

**INQUIRY INTO IMPACT OF THE PHASE-OUT OF  
AUSTRALIAN LIVE SHEEP EXPORTS BY SEA ON NEW  
SOUTH WALES**

**Organisation:** Animal Liberation  
**Date Received:** 18 September 2024

---



Portfolio Committee No. 4

# **Inquiry into the impact of the phase-out of Australian live sheep exports by sea on NSW**

---

An **Animal Liberation** submission



We don't have a duty to **speak** for the animals;  
we have an obligation to be **heard** for the animals.

- Matt Ball

## DOCUMENT DETAILS

Animal Liberation. 2024. A submission by Animal Liberation in response to Portfolio Committee No. 4's Inquiry into the impact of the phase-out of Australian live sheep exports by sea on New South Wales. Submission prepared by Alex Vince and Lisa J Ryan.

## ABOUT ANIMAL LIBERATION

Animal Liberation has worked to permanently improve the lives of all animals for over four decades. We are proud to be Australia's longest serving animal rights organisation. During this time, we have accumulated considerable experience and knowledge relating to issues of animal welfare and animal protection in this country. We have witnessed the growing popular sentiment towards the welfare of animals, combined with a diminishing level of public confidence in current attempts, legislative or otherwise, to protect animals from egregious, undue, or unnecessary harm. Our mission is to permanently improve the lives of all animals through education, action, and outreach.

## INTELLECTUAL PROPERTY RIGHTS

© Animal Liberation 2024



Unless otherwise noted, copyright and any other intellectual property rights in this publication are owned by Animal Liberation. All material in this publication is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International Licence. Creative Commons Attribution 4.0 International Licence is a standard form licence agreement that allows you to copy, redistribute, remix, transmit and adapt this publication provided you attribute the work, you do not use it commercially and you distribute your contribution under this creative commons licence. The licence terms are available via [creativecommons.org/licenses/by-nc-sa/4.0/](https://creativecommons.org/licenses/by-nc-sa/4.0/).

## CONTACT & ENQUIRIES

Animal Liberation

Images courtesy of Jo-Anne McArthur / WeAnimals unless otherwise stated.



## **Acknowledgement of country**

We acknowledge the Traditional Owners of country throughout Australia and that this document was prepared on land stolen from and never ceded by the Gadigal People.

Portfolio Committee No. 4

20 September 2024

Via email: [portfoliocommittee4@parliament.nsw.gov.au](mailto:portfoliocommittee4@parliament.nsw.gov.au)


We are pleased to submit Animal Liberation's formal response to the Portfolio Committee No. 4's Inquiry into the impact of the phase-out of Australian live sheep exports by sea on New South Wales.

Animal Liberation strongly supports the Australian Government's commitment and decision to end live sheep exports by sea by May 1, 2028. Our submission outlines the key reasons why we believe this phase-out is necessary and long overdue on animal welfare grounds:

- i. Decades of evidence has shown the severe welfare impacts on sheep during lengthy sea voyages, including heat stress, injury, disease, and high mortality rates;
- ii. The inherent risks and suffering involved in long-distance sea transport of live animals cannot be mitigated, even with regulatory changes;
- iii. Public attitudes towards animal welfare have shifted significantly, with growing opposition to live exports;
- iv. The economic importance of live sheep exports is limited, accounting for less than 2% of the sheep industry's value.

Our submission provides a comprehensive analysis of the animal welfare issues, economic impacts, public opinion, and ethical considerations surrounding live sheep exports. We also offer recommendations for managing the transition, including developing alternative ethical industries.

We would add, for the record, that live animal export is a Commonwealth responsibility, not a state matter. Given that the Australian government has already decided to end live sheep exports and legislated an end date, we are concerned that this inquiry has no meaningful purpose. Similarly, we are concerned that it is costing the NSW taxpayer significant money without a meaningful objective. Instead, we believe the NSW Government could and should redirect its focus and resources to addressing other pressing animal welfare priorities that require immediate attention.



We appreciate the opportunity to contribute to this inquiry, and Animal Liberation would welcome the chance to provide further information or clarification to the Committee if required.

*Sincerely,*

**Alex Vince**

Campaign director

**Lisa J. Ryan**

Regional campaign manager



# EXECUTIVE SUMMARY

This submission provides feedback on Portfolio Committee No. 4's Inquiry into the impact of the phase-out of Australian live sheep exports by sea on New South Wales. Our analysis identifies several significant issues that require addressing:

## 1: ANIMAL WELFARE MUST BE THE PRIMARY CONSIDERATION

Transport is one of the deadliest elements of animal agriculture. Decades of evidence has shown the severe welfare impacts on sheep during sea voyages, including heat stress, injury, disease, and high mortality rates. Reviews have found that on-board conditions during peak summer months cannot ensure animal welfare is maintained. The suffering of animals during these voyages is unacceptable and unjustifiable.

## 2: THE PHASE-OUT TIMELINE ALLOWS FOR INDUSTRY TRANSITION

The 4-year transition period provides more than adequate time for affected producers and supply chain businesses to adapt. Other countries, including New Zealand, have successfully phased out live exports in shorter timeframes.

## 3: ECONOMIC IMPACTS ON NSW ARE LIKELY TO BE MINIMAL

Western Australia accounts for almost all of Australia's current live sheep exports by sea, with NSW not directly participating in this trade. Since 2019-20, Western Australia has been the only state exporting live sheep by sea. As a result, any economic effects of the phase-out on NSW are likely to be indirect and minimal, potentially manageable with appropriate transition support if needed.

## 4: PUBLIC ATTITUDES TO ANIMAL WELFARE HAVE EVOLVED

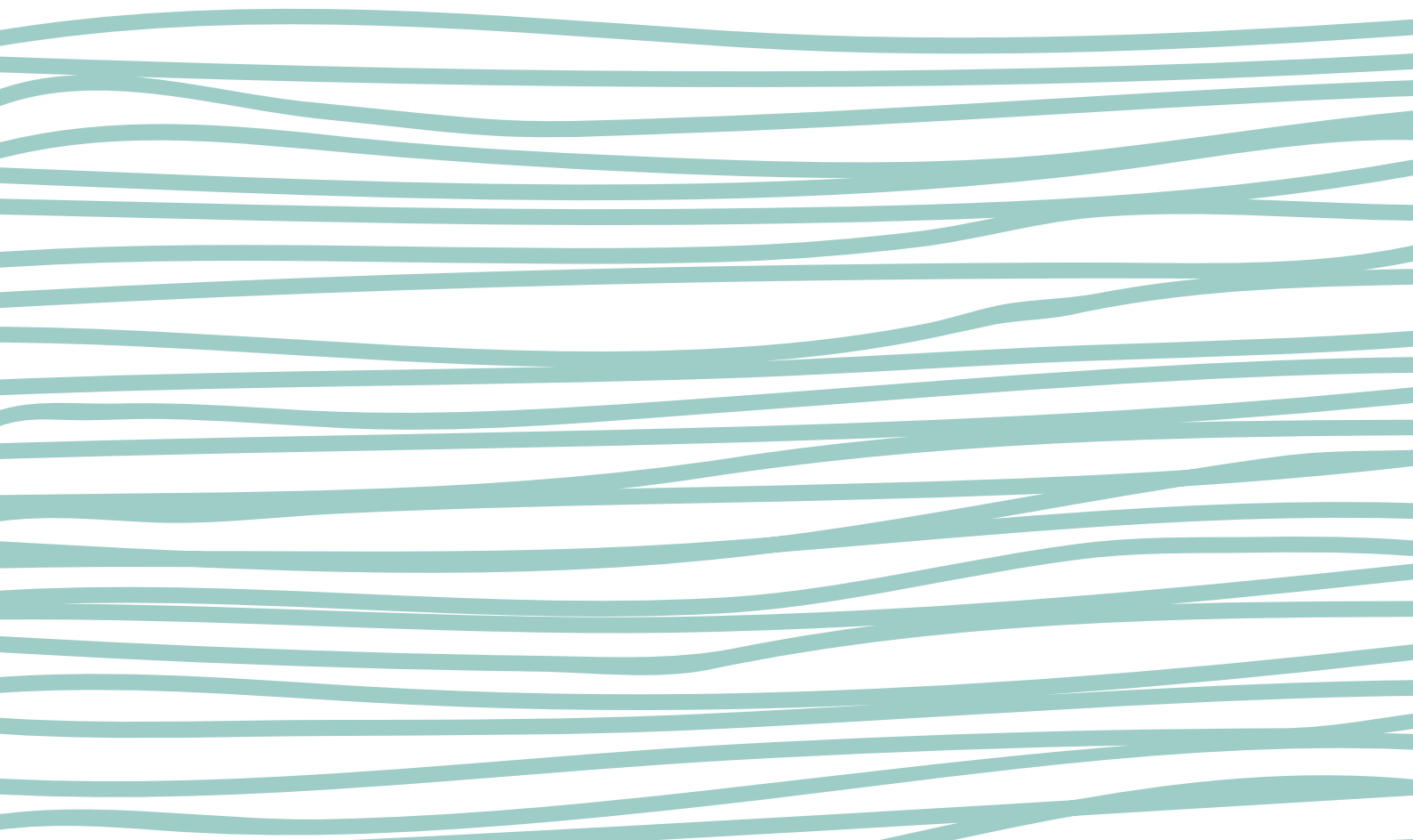
There is strong and growing public opposition to live exports in Australia. Ending the trade aligns with community and global expectations on animal welfare.

## 5: THE PHASE-OUT WILL ENHANCE AUSTRALIA'S REPUTATION

Ending live sheep exports will strengthen Australia's standing in animal welfare standards. This may have trade benefits for other agricultural exports.

SECTION ONE

# RESPONSE



## SECTION ONE

# RESPONSE

---

## 1 BACKGROUND

Australia has historically been one of the world's largest exporters of live sheep, primarily to markets in the Middle East (Glyde et al. 2023). The trade began in the 1970s and peaked in the early 2000s when Australia was exporting over 6 million sheep annually (Davey and Fisher 2018). Since that time, exports have declined significantly, primarily due to changing market conditions and increased community scrutiny and awareness of animal welfare issues (Acil Allen 2023; Glyde et al. 2023; Wahlquist 2023; Commonwealth of Australia 2024).

In 2022-23, Australia's live sheep export industry continued its long-term decline, with exports valued at \$77 million. This represents a significant decrease from \$415 million in 2002-03, highlighting the industry's diminishing economic impact over the past two decades (Collins 2024). Western Australia accounts for almost all of Australia's current live sheep exports by sea (Renwick 2024), and, since 2019-20, it has been the only state exporting live sheep by sea (ABARES 2023).

Ending the live export of sheep has been a policy of the Australian Labor Party ('ALP') since 2018 (Remeikis 2018). It was made in response to footage of a voyage that killed over 2,000 sheep the previous year (Wahlquist 2018). More recently, Labor recommitted to its policy of phasing out the live export of sheep if elected in the lead-up to the 2022 Federal election (Sullivan et al. 2022).

## 2 ANIMAL WELFARE

As managing animal welfare is a contentious contemporary issue (Rousing et al. 2001; Schipp and Sheridan 2013; Colditz et al. 2014; Futureye 2018; WOA 2024), it is critical that its meaning be made clear (Phillips 2009). The issue of animal welfare is multifaceted (Dawkins 2012), encompassing scientific (Mason 2023), ethical (Alonso et al. 2020), economic (Stokes et al. 2020), and political dimensions (Hårstad 2023). Although widely recognised as important, there is no universally accepted definition of 'animal welfare' (Mellor 2016; Reimert et al. 2023). This is partially due to the influence of people's beliefs and perspectives on what constitutes 'good' or 'bad' animal welfare, which can vary based on cultural, scientific, religious, or political backgrounds (Jago et al. 2000; Caruana 2020; Garcia and McGlone 2022; Sinclair et al. 2022). Advocates of animal welfare aim to widen the moral sphere of society to encompass not only the interest of humans but also the interests of other-than-human animals (Singer 2001; Callicott 2013; Francione 2022). In order to achieve this, the animal welfare movement elevates animals as stakeholders (Clancy 2018; Capozzelli et al. 2020; Smart 2022).

An individual's welfare refers to their ability to cope with their environment

(Broom 1986). Mellor and Reid (1994) outlined five (5) interrelated welfare domains, including:

1. nutrition;
2. environment;
3. health;
4. behaviour, and;
5. mental well-being.

Mellor and Reid (1994) defined "good welfare" as being present when an animal's needs in these domains are adequately met (Mellor and Reid 1994). These are known as the 'Five Domains' of animal welfare (RSPCA Australia 2024a). In cases where human actions have negative effects on animal welfare, there is a moral obligation to mitigate these impacts to the extent possible (Broom 1989; Littin et al. 2004). In assessing an individual's welfare, it is important to consider their health as well as their emotional and psychological state, such as feelings of pain, fear, and pleasure (Broom 1998; Broom 2001). When an individual is unable to cope with a problem, they experience stress, which occurs when the environment exceeds the individual's control systems and reduces their fitness (Broom and Johnson 1993).

Animal welfare is an important issue for the live export industry for three (3) key reasons: 1) economic returns; 2) community attitudes and; 3) international socio-political relations (Fleming et al. 2020a). Social concern for the welfare of animals in the Australian live export industry is significant (Willis et al. 2021). The industry receives frequent media and advocacy attention (Hastreiter 2013; Coleman 2018; Sinclair et al. 2018; Buddle and Bray 2019), particularly in response to incidents involving adverse welfare outcomes in countries receiving Australian animals (Hampton et al. 2020). These incidents often generate debate on whether the trade should be banned or be more rigorously regulated (Chaudhri 2014). As such, the trade remains deeply controversial. The following section will apply these considerations to the live export trade and its impact on animal welfare.

## **2.1 LIVE EXPORT AND ANIMAL WELFARE**

Transport is one of the deadliest elements of animal agriculture (Greger 2007; Kevany 2022). Overwhelming evidence confirms that the live export trade involves unacceptable suffering and cruelty (RSPCA Australia 2022). This is notably so during long sea journeys; sheep exported from Australia to the Middle East are sent on one of the world's longest sea journeys (Carnovale and Phillips 2020). Though such voyages take an average of between 20-21 days (Phillips 2020), some can take up to five (5) weeks (DPIRD 2020). During that time, sheep leave the Australian winter and arrive in the Middle East's summer, where temperatures can climb over 40°C (Carnovale and Phillips 2020).

Industry reports indicate that mortality rates on these voyages are approximately four (4) times greater than for shorter voyages (Norri and Norman 2012).

The live export trade is fundamentally at odds with recognising the sentience and inherent worth of animals (Morfuni 2011; Coghlin 2014; Evans 2018). Transporting large numbers of sentient beings on long sea voyages as if they were inanimate cargo presents severe ethical issues that cannot be mitigated through regulatory changes (Jones and Davies 2016; Buddle et al. 2018; Singer 2018; Dunston-Clarke et al. 2020; Hing et al. 2021; Duval et al. 2024).

Key animal welfare issues include:



### 2.1.1 HEAT STRESS

Excessive exposure to high heat levels can be fatal (Stockman et al. 2011). Historical studies have shown that most mortalities associated with the live export trade occur aboard the ship (Norris et al. 1989). In addition to the contraction of disease aboard live export ships, such as salmonellosis, which “inevitably” causes deaths (Higgs et al. 1993), heat stress has long been a key animal welfare concern (Norris and Richards 1989). This is because sheep accumulate heat when exposed to continuous high heat and humidity (Stockman et al. 2011).

Though sheep can regulate their body temperature, they are vulnerable to heat stress, particularly when travelling through equatorial regions (Carnovale and Phillips 2020). Studies have shown that extended exposure to heat and humidity leads to a rise in the body temperature of sheep, suggesting that their mechanisms for dissipating heat are insufficient to cope with the added heat load (Stockman et al. 2011).

During field studies, sheep are able to dissipate heat gained during the day as there is a fluctuation in environmental temperature that decreases at night (Silanikove 2000). However, diurnal temperature fluctuation is absent during live export. Consequently, sheep have reduced opportunities to lose heat at night, causing heat to accumulate (Stockman et al. 2011). Even with ventilation systems, temperatures and humidity on ships can reach dangerous levels (Caulfield et al. 2014). In 2018, the McCarthy Review found that on-board conditions during peak summer months cannot ensure animal welfare is maintained (McCarthy 2018).



JO-ANNE MCARTHUR / WE ANIMALS

### 2.1.2 MORTALITY

Although mortality rates have improved over time, sheep still die on virtually every voyage (Caulfield and Foster 2019). As such, mortality remains a serious concern in the live export trade. In February 2024, the *MV Bahijah*, transporting over 15,000 sheep and cattle to Jordan, was ordered to return to Australia due to security concerns in the Red Sea (Towie 2024). Upon arrival off the coast of Western Australia, the Department of Agriculture, Fisheries and Forestry ('DAFF') confirmed that a number of animals had died on board (RSPCA Australia 2024a). DAFF subsequently reported that total mortalities since January 5, 2024 stood at four (4) cattle and sixty-four (64) sheep on board the vessel, with an additional seven (7) cattle and six (6) sheep dying on land after disembarkation (DAFF 2024). Such rates continue to be unacceptable to the Australian public (Australian Alliance for Animals 2024; Mundy et al. 2024; RSPCA Australia 2024b).



JO-ANNE MCARTHUR / WE ANIMALS

### 2.1.3 INJURIES AND ILLNESS

Close confinement, unfamiliar environments, and rough seas can lead to injuries (RSPCA Australia 2023a). The cramped conditions on ships increase the risk of physical trauma, including bruising, lacerations, and fractures (Phillips 2022). Sheep may suffer injuries from slipping on wet floors, being trampled by other animals, or colliding with structures during ship movements (EFSA et al. 2022). Respiratory diseases are particularly common during live export. The high stocking density and poor ventilation on ships create ideal conditions for the spread of pathogens (Phillips 2022). Pneumonia is a significant concern, often caused by stress-induced immunosuppression combined with exposure to airborne irritants like ammonia from animal waste (Carnovale and Phillips 2020; RSPCA Australia 2024b).

The issues outlined in subsections 2.1.1, 2.1.2, and 2.1.3 are far from theoretical - numerous investigations and whistleblower reports have documented appalling conditions and animal suffering on live export voyages over many years. While regulatory changes have led to minor improvements, the fundamental welfare risks of long-distance sea transport remain.

### 3 JUSTIFICATION FOR A PHASE-OUT

Animal Liberation strongly endorses the Australian Government's commitment to phase out live sheep exports by sea by 1 May 2028. However, we advocate for an accelerated timeline to mitigate ongoing and avoidable animal suffering, in line with clear public expectations.

Animal Liberation firmly believes that the cessation of live sheep exports by sea is both ethically imperative and morally justified, given the inherent and severe animal welfare risks associated with this practice, and the repeated failures by successive governments and the industry to regulate the trade. Our position is grounded in six (6) key considerations:

1. Advancements in scientific understanding of animal sentience: Recent scientific research has significantly expanded our knowledge of animal cognition, emotions, and sentience (Birch et al. 2020; Browning and Birch 2022; de Waal 2022). The conditions inherent to live export are fundamentally incompatible with respecting the sentience and intrinsic value of these animals;
2. Evolving community expectations: Surveys have shown that strong animal welfare policies impact how Australians vote (Villanueva 2015; O'Sullivan 2016; Rodan and Mummary 2016; WAP 2016; Anon. 2023). Public opinion has consistently demonstrated opposition to live animal exports, as evidenced by numerous polls (Sinclair et al. 2018; RSPCA South Australia 2021; RSPCA Australia 2022; RSPCA Australia 2023b; Zhou 2024). Similarly, surveys have found that a significant proportion of the Australian public believe many employees in the industry do not have sufficiently high regard or concern for animal welfare (Buddle et al. 2018). Continuing this trade runs counter to evolving societal values and expectations regarding animal welfare;
3. Viable alternatives exist: Demand for animal products is a crucial component of limiting the rise in global temperatures and plays a critical role in maintaining public health (Jia et al. 2023). Demand for plant-based substitutes is growing globally, with Australia the third-fastest growing vegan market worldwide (Curtain and Grafenauer 2019). Since 2015, there has been a fivefold increase in the number of plant-based substitutes available in Australia (Estell et al. 2021). The development of such substitutes offers ethical alternatives to meet market demand without commodifying sentient beings (Rubio et al. 2020). These options not only address animal welfare concerns but also present more sustainable and healthier alternatives to traditional animal products (Bogueva et al. 2022; Bryant 2022);

4. Economic importance is limited: Live sheep exports constitute less than 2% of the sheep industry's value and a mere 0.1% of Australia's total agricultural exports (Renwick 2024). The economic impact of phasing out this trade is manageable, particularly with a well-planned transition period;
5. Reputational risk: The continuation of live exports poses an ongoing risk to Australia's reputation and social licence to operate (Davey and Fisher 2020; Zhou 2024). This reputational damage could have far-reaching consequences for other agricultural exports;
6. Regulatory failure: Despite multiple reviews and regulatory changes, serious welfare incidents persist. The fundamental ethical issues inherent in this trade cannot be adequately addressed through regulation alone.

For these reasons, we strongly support the Australian Government's commitment to phase out live sheep exports by sea. However, we will continue to urge consideration of an accelerated timeline given the ongoing and avoidable suffering involved.

## 4 ECONOMIC IMPACTS AND INDUSTRY TRANSITION

Though the phase-out of live sheep exports by sea will require industry adjustments, the economic impacts are likely to be limited and manageable, particularly for New South Wales. The Federal Government's allocation of \$64.6 million of public money to assist producers and the supply chain demonstrates a significant commitment to supporting affected stakeholders (DAFF 2024). We urge the New South Wales government to align its policies with the federal phase-out plan and consider additional measures to support this transition.

Key economic considerations include:

- i. Limited economic significance: The total value of live sheep exports in 2022-23 was \$76.9 million, less than 2% of the sheep industry's total value (Zhou 2024). This relatively small contribution suggests that the overall economic impact of the phase-out in NSW will be limited;
- ii. Transition period: With a 4-year transition period until May 2028, the industry has ample time to adjust production systems and develop alternative markets (Glyde et al. 2023). While this gradual approach allows for a more manageable economic transition, we advocate for an accelerated timeline to mitigate ongoing and avoidable animal suffering;
- iii. Emerging opportunities: The growing demand for plant-based foods and cellular agriculture, largely due to concerns related to health, animal welfare, and the environment (Flint et al. 2023; Imran and Liyan 2023; Bogueva and Marinova 2024),

provides alternative economic opportunities (Boukid 2021). Forecasts by Bloomberg Intelligence suggest that sales of plant-based meat alternatives could reach \$74-118 billion by 2030, while Credit Suisse predicts sales to reach \$88–263 billion by 2030 (Caputo et al. 2024).

For NSW specifically, given the minimal direct involvement in live exports, economic impacts are likely to be very limited. Any effects would be indirect, potentially including:

- i. Expanding plant-based and cellular agriculture industries;
- ii. Government transition assistance for affected businesses/communities;
- iii. Developing new markets for ethical, plant-based products;
- iv. Diversification of farming enterprises towards more ethical, climate suitable and sustainable pursuits.

With appropriate planning and support, we believe the phase-out can be managed without significant negative economic impacts on NSW. The ethical imperative of ending this trade far outweighs the limited economic costs.

## 5 PUBLIC OPINION AND SOCIAL LICENCE

Public attitudes towards animal welfare have shifted significantly in recent years, with growing concern about practices in intensive animal agriculture and live exports (Coleman 2018; Coleman et al. 2022; Morton et al. 2022). This changing social context is an important consideration for all policymakers.

Numerous polls and studies have found strong public opposition to live animal exports:

- i. Rising concern: The level of public concern about live animal export has risen significantly, from approximately 50% in 2009 to 76% in 2018 (RSPCA Australia 2023a);
- ii. Negative sentiment: An independent academic survey of 522 Australians found that 60% of respondents had negative feelings about the live export trade, while only 14% had positive feelings. The study also revealed that 42% of respondents believed the live export trade should be ended (Sinclair et al. 2018);
- iii. Western Australian support: Public opposition to live exports is particularly strong in Western Australia, despite it being the state most economically reliant on the trade. A 2023 poll found that ~71% of Western Australians supported ending live sheep exports (RSPCA Australia 2023a; RSPCA SA 2024);

- iv. National support for the phase-out: There is strong support for a phase-out approach, with ~86% of Australians supporting the federal government's plan to phase out live sheep exports (RSPCA Australia 2023a).

These findings demonstrate a clear and growing public consensus against live animal exports, with particularly strong support for phasing out the practice. As public understanding of animal sentience and cognition has grown, so too has concern about practices that cause animal suffering. By ending live sheep exports, the government and industry can demonstrate responsiveness to community concerns and evolving ethical standards. This can help build trust and support for transitioning towards more ethical forms of agriculture.

## 6 CONCLUSION AND RECOMMENDATIONS

The phase-out of live sheep exports by sea represents a necessary and overdue step to address serious ethical concerns regarding the treatment of sentient beings. While it will require some industry adjustment, the impacts on NSW are likely to be minimal and manageable with appropriate transition planning.

By ending this ethically problematic trade, Australia can enhance its reputation as a leader in recognising animal sentience and rights. We urge the Committee to support this important reform and focus on ensuring a smooth transition that respects the inherent worth of animals while supporting affected communities.

Based on the evidence and arguments presented above, we make the following recommendations to the Committee:

1. Support the Australian Government's commitment to phase out live sheep exports by sea by May 1, 2028, while considering options to accelerate this timeline;
2. Recommend development of a comprehensive transition package to support affected producers, businesses and communities in shifting towards more ethical and sustainable industries. This should include:
  - a. Financial assistance for transitioning to plant-based agriculture;
  - b. Support for expanding plant-based food processing capacity;
  - c. Programs to develop new markets for ethical, plant-based products;
  - d. Regional development initiatives for affected communities.
3. Ensure animal welfare standards are maintained and enforced during the transition period, while recognising that welfare measures alone cannot address the fundamental ethical issues;
4. Consider expanding the phase-out to cover all live animal exports by sea, given the

similar ethical issues involved;

6. Recommend ongoing monitoring and reporting on animal welfare outcomes in the sheep industry to ensure standards are maintained post-phase-out, while working towards a longer-term transition away from animal agriculture.

Thank you for your consideration of this submission. We would welcome the opportunity to provide further information or clarification to the Committee if required.

# REFERENCES

Acil Allen. *Performance and Value of the Live Sheep Export Trade*; Available online: [www.mla.com.au/globalassets/mla\\_corporate/research\\_and\\_development/final\\_reports/acil\\_allen\\_final\\_report\\_live\\_sheep\\_trade\\_aug23\\_update\\_final.pdf](http://www.mla.com.au/globalassets/mla_corporate/research_and_development/final_reports/acil_allen_final_report_live_sheep_trade_aug23_update_final.pdf) (2023).

Australian Alliance for Animals. Animal welfare at risk over decision to return livestock to MV Bahijah; Available online: [www.allianceforanimals.org.au/ourwork/media\\_release\\_animal\\_welfare\\_at\\_risk\\_livestock\\_mv\\_bahijah](http://www.allianceforanimals.org.au/ourwork/media_release_animal_welfare_at_risk_livestock_mv_bahijah) (2024).

Alonso, M.; González Montaña, J.; Lomillos, J. Consumers' concerns and perceptions of farm animal welfare. *Animals* **2020**, *10*(3), 385.

Anonymous. Polling puts animal welfare on the agenda for Federal election. Available online: [https://greens.org.au/news/media\\_release/polling\\_puts\\_animal\\_welfare\\_agenda\\_federal\\_election](https://greens.org.au/news/media_release/polling_puts_animal_welfare_agenda_federal_election) (2021).

Australian Bureau of Agricultural and Resource Economics and Sciences. *Phase Out of Live Sheep Exports by Sea: Background Information and Analysis*; Australian Bureau of Agricultural and Resource Economics and Sciences: Canberra, Australia, **2023**.

Australian Veterinary Association. *A Short Review of Space Allocation on Live Export Ships and Body Temperature Regulation in Sheep*; Available online: [www.ava.com.au/siteassets/advocacy/ava\\_literature\\_review\\_live\\_sheep\\_export\\_may\\_2018\\_final\\_1.pdf](http://www.ava.com.au/siteassets/advocacy/ava_literature_review_live_sheep_export_may_2018_final_1.pdf) (2018).

Birch, J.; Schnell, A.; Clayton, N. Dimensions of animal consciousness. *Trends Cogn. Sci.* **2020**, *24*(10), 789–801.

Bogueva, D.; Marinova, D.; Bryant, C. Meat me halfway: Sydney meat loving men's restaurant experience with alternative plant based proteins. *Sustainability* **2022**, *14*(3), 1290.

Bogueva, D.; Marinova, D. Projected future trends of plant based meat analogues; In *Handbook of Plant Based Meat Analogues*; Ravishankar, G., Rao, A., Tahergorabi, R., Mohan, A., Eds.; Academic Press: Washington, USA, **2024**.

Boukid, F. Plant based meat analogues: from niche to mainstream. *Euro. Food Res. Tech.* **2021**, *247*, 297–308.

Broom, D. Indicators of poor welfare. *Brit. Vet. J.* **1986**, *142*, 524–526.

Broom, D. Ethical dilemmas in animal usage; In *The Status of Animals*; Paterson, D., Palmer, M., Eds.; CAB International: Wallingford, United Kingdom, **1989**.

Broom, D.; Johnson, K. *Stress and Animal Welfare*; Kluwer: Dordrecht, Netherlands, **1993**.

Broom, D. Welfare, stress and the evolution of feelings. *Adv. Stud. Behav.* **1998**, *27*, 371–403.

Broom, D. Coping, stress and welfare; In *Coping with Challenge: Welfare in Animals including Humans*; Broom, D. Ed.; Dahlem University Press: Berlin, Germany, **2001**.

Broom, D. Transport stress in cattle and sheep with details of physiological and other indicators. *Deutsche tierärztliche* **2003**, *110*, 83–89.

Browning, H.; Birch, J. Animal sentience. *Philos. Compass* **2022**, *17*(5), e12822.

Bryant, C. Plant based animal product alternatives are healthier and more environmentally sustainable than animal products. *Future Foods* **2022**, *6*, 100174.

Buddle, E.; Bray, H. How farm animal welfare issues are framed in the Australian media. *J. Agric. Environ. Ethics* **2019**, *32*, 357–376.

Callicott, J. *Thinking Like a Planet: The Land Ethic and the Earth Ethic*; Oxford University Press: New York, United States, **2013**.

Capozzelli, J.; Hecht, L.; Halsey, S. What is the value of wild animal welfare for restoration ecology? *Resor. Ecol.* **2020**, *28*(2), 267–270.

Caputo, V.; Sun, J.; Staples, A.; Taylor, H. Market outlook for meat alternatives: challenges, opportunities, and new developments. *Trends Food Sci. Tech.* **2024**, *148*, 104474.

Carnovale, F.; Phillips, C. The effects of heat stress on sheep welfare during live export voyages from Australia to the Middle East. *Animals* **2020**, *10*(4), 694.

Caruana, L. Different religions, different animal ethics? *Anim. Front.* **2020**, *10*(1), 8–14.

Caulfield, M.; Cambridge, H.; Foster, S.; McGreevy, P. Heat stress: a major contributor to poor animal welfare associated with long haul live export voyages. *Vet. J.* **2014**, *199*(2), 223–228.

Caulfield, M.; Foster, S. Submission to the Interim Inspector General of Live Animal Exports; Available online: [www.igawiae.gov.au/sites/default/files/2022\\_08/vets\\_against\\_livestock\\_exports.pdf](http://www.igawiae.gov.au/sites/default/files/2022_08/vets_against_livestock_exports.pdf) (2019).

Chaudhri, R. Animal welfare and the WTO: the legality and implications of live export restrictions under international trade law. *Fed. L. Rev.* **2014**, *42*(2), 279–307.

Clancy, E. Animals as community stakeholders: inclusion of pets in social policy and practice. *Fam. Soc.* **2018**, *95*(4).

Coghlin, S. Australia and live animal export: wronging nonhuman animals. *J. Anim. Ethics* **2014**, *4*(2), 45–60.

Colditz, I.; Ferguson, D.; Collins, T.; Matthews, L.; Hemsworth, P. A prototype tool to enable farmers to measure and improve the welfare performance of the farm animal enterprise: the unified field index. *Animals* **2014**, *4*, 446–462.

Coleman, G. Public animal welfare discussions and outlooks in Australia. *Anim. Front.* **2018**, *8*(1), 14–19.

Coleman, G.; Hemsworth, P.; Hemsworth, L.; Munoz, C.; Rice, M. Differences in public and producer attitudes toward animal welfare in the red meat industries. *Front. Psychol.* **2022**, *13*, 875221.

Collins, J. Media release: \$107 million to support phase out of live sheep exports by sea; Available online: [https://minister.agriculture.gov.au/watt/media\\_releases/support\\_phase\\_out\\_live\\_sheep\\_exports\\_sea](https://minister.agriculture.gov.au/watt/media_releases/support_phase_out_live_sheep_exports_sea) (2024).

Commonwealth of Australia. *Advisory Report: Export Control Amendment (Ending Live Sheep Exports by Sea) Bill 2024*; Commonwealth of Australia: Canberra, Australia, **2024**.

Commonwealth Government Department of Agriculture, Fisheries and Forestry. *Phase Out of Live Sheep Exports By Sea Transition Support*; Available online: [www.agriculture.gov.au/sites/default/files/documents/2024\\_25\\_BUDGET\\_FACTSHEET\\_LSP0%20FINAL.pdf](http://www.agriculture.gov.au/sites/default/files/documents/2024_25_BUDGET_FACTSHEET_LSP0%20FINAL.pdf) (2024).

Crawford, L.; Schaefer, H. A Report into the Effects of Pre transport Curfew of Livestock Off Feed and Water; Available online: [www.dpi.nsw.gov.au/\\_data/assets/pdf\\_file/0011/1553654/Literature\\_Review\\_Pre\\_Transport\\_Curfew\\_of\\_Livestock.pdf](http://www.dpi.nsw.gov.au/_data/assets/pdf_file/0011/1553654/Literature_Review_Pre_Transport_Curfew_of_Livestock.pdf) (2024).

- Curtain, F.; Grafenauer, S. Plant based meat substitutes in the flexitarian age: an audit of products on supermarket shelves. *Nutrients* **2019**, *11*(11), 2603.
- Davey, A.; Fisher, R. *Economic Issues Associated with the West Australian Live Sheep Export Trade*; Pegasus Economics: Macquarie, Australia, **2018**.
- Dawkins, M. *Why Animals Matter*; Oxford University Press: Oxford, United Kingdom, **2012**.
- de Waal, F. Sentience as part of emotional lives. *Anim. Sentience* **2022**, *32*(22).
- Department of Agriculture, Fisheries and Forestry. MV Bahijah livestock vessel updates; Available online: [www.agriculture.gov.au/about/news/mv\\_bahijah\\_live\\_updates](http://www.agriculture.gov.au/about/news/mv_bahijah_live_updates) (2024).
- Dunston Clarke, E.; Willis, R.; Fleming, P.; Barnes, A.; Miller, D.; Collins, T. Duval, E.; Lecorps, B.; von Keyserlingk, M. Are regulations addressing farm animal welfare issues during live transportation fit for purpose? A multi country jurisdictional check. *R. Soc. Open Sci.* **2024**, *11*(1), 231072.
- EFSA Panel on Animal Health and Welfare; Nielsen, S.; Alvarez, J.; Bicout, D.J.; Calistri, P.; Canali, E.; Drewe, J.A.; Garin-Bastuji, B.; Gonzales Rojas, J.L.; Gortázar Schmidt, C.; Michel, V.; Miranda Chueca, M.Á.; Padalino, B.; Pasquali, P.; Roberts, H.C.; Spooler, H.; Stahl, K.; Velarde, A.; Viltrop, A.; Winckler, C.; Earley, B.; Edwards, S.; Faucitano, L.; Marti, S.; Miranda de La Loma, G.C.; Nanni Costa, L.; Thomsen, P.T.; Ashe, S.; Mur, L.; Van der Stede, Y.; Herskin, M. Welfare of small ruminants during transport. *EFSA J.* **2022**, *20*(9), e07404.
- Estell, M.; Hughes, J.; Grafenauer, S. Plant protein and plant based meat alternatives: consumers and nutrition professional attitudes and perceptions. *Sustainability* **2021**, *13*(3), 1478.
- Evans, B. Animal cruelty, discourse, and power: a study of problematisations in the live export policy debates; Available online: [https://eprints.qut.edu.au/122417/1/Brodie\\_Evans\\_Thesis.pdf](https://eprints.qut.edu.au/122417/1/Brodie_Evans_Thesis.pdf) (2018).
- Fleming, P.; Wickham, S.; Barnes, A.; Miller, D.; Collins, T. Review of livestock welfare indicators relevant for the Australian live export industry. *Animals* **2020**, *10*(7), 1236.
- Flint, M.; Bowles, S.; Lynn, A.; Paxman, J. Novel plant based meat alternatives: future opportunities and health considerations. *Proc. Nutr. Soc.* **2023**, *82*(3), 370–385.
- Francione, G. Animal welfare and society: Pt. 1, the viewpoints of a philosopher. *Anim. Front.* **2022**, *12*(1), 43–47.
- Futureye. *Australia's Shifting Mindset on Farm Animal Welfare*; Futureye Pty. Ltd.: Windsor, Australia, **2018**.
- Garcia, A.; McGlone, J. Animal welfare and the acknowledgement of cultural differences. *Animals* **2022**, *12*(4), 474.
- Glyde, P.; Middleton, S.; Neil, H.; Snowdon, W. *Independent Panel Report: Phase Out of Live Sheep Exports by Sea*; Commonwealth Government Department of Agriculture, Fisheries and Forestry: Canberra, Australia, **2023**.
- Greger, M. The long haul: risks associated with livestock transport. *Biosec. Bioterror.* **2007**, *5*(4), 301–311.
- Hampton, J.; Jones, B.; McGreevy, P. Social licence and animal welfare: developments from the past decade in Australia. *Animals* **2020**, *10*, 2237.
- Hårstad, R. The politics of animal welfare: a scoping review of farm animal welfare governance. *Rev. Policy Res.* **2023**, *41*(4), 679–702.
- Hastreiter, M. Animal welfare standards and Australia's live exports industry to Indonesia: creating an opportunity out of a crisis. *Washington University Global Studies Law Review* **2013**, *12*, 181–203.
- Higgs, A.; Norris, R.; Richards, R. Epidemiology of salmonellosis in the live sheep export industry. *Aust. Vet. J.* **1993**, *70*(9), 330–335.
- Hing, S.; Foster, S.; Evans, D. Animal welfare risks in live cattle export from Australia to China by sea. *Animals* **2021**, *11*(10), 2862.
- Imran, M.; Liyan, Z. Productions of plant based meat: functionality, limitations and future prospects. *Euro. Food Res. Tech.* **2023**, *249*, 2189–2213.
- Jago, J.; Fisher, A.; Neindre, P. Animal welfare and product quality; In *Biological Resource Management: Connecting Science and Policy*; Balázs, E., Galante, E., Lynch, J., Schepers, J., Toutant, J., Werner, D. Werry, P., Eds.; Springer: Berlin, Germany, **2000**.
- Jia, J.; Dawson, T.; Wu, F.; Han, Q.; Cui, X. Global meat demand projection: Quo Vadimus? *J. Clean. Prod.* **2023**, *429*, 139460.
- Jones, B.; Davies, J. *Backlash: Australia's Conflict of Values over Live Exports*; Finlay Lloyd Publishers: Braidwood, Australia, **2016**.
- Kevany, S. More than 20 million farm animals die on way to abattoir in US every year. Available online: <https://amp.theguardian.com/environment/2022/jun/15/more-than-20-million-farm-animals-die-on-way-to-abattoir-in-us-every-year> (2022).
- Littin, K.; Mellor, D.; Warburton, B.; Eason, C. Animal welfare and ethical issues relevant to the humane control of vertebrate pests. *N. Z. Vet. J.* **2004**, *52*, 1–10.
- Mason, G. Animal welfare research is fascinating, ethical, and useful but how can it be more rigorous? *BMC Biol.* **2023**, *21*, 302.
- McCarthy, M. *Independent Review of Conditions for the Export of Sheep to the Middle East During the Northern Hemisphere Summer*; Department of Agriculture and Water Resources: Canberra, Australia, **2018**.
- Mellor, D.; Reid, C. Concepts of animal well being and predicting the impact of procedures on experimental animals. Available online: [www.wellbeingintlstudiesrepository.org/cgi/viewcontent.cgi?article=1006&context=expawel](http://www.wellbeingintlstudiesrepository.org/cgi/viewcontent.cgi?article=1006&context=expawel) (1994).
- Mellor, D. Updating animal welfare thinking: moving beyond the 'Five Freedoms' towards 'A Life Worth Living'. *Animals* **2016**, *6*(3), 21.
- Morfuni, L. Pain over profit: an analysis of the live export trade. *Deakin L. Rev.* **2011**, *16*(2), 497–538.
- Morton, R.; Hebart, M.; Ankeny, R.; Whittaker, A. An investigation into 'community expectations' surrounding animal welfare law enforcement in Australia. *Front. Anim. Sci.* **2022**, *3*.
- Mundy, G.; Trigger, R. MV Bahijah live export ship berths in Fremantle but animals do not need to be offloaded, authorities say; Available online: [www.abc.net.au/news/2024-02-01/mv-bahijah-live-export-ship-berths-fremantle-to-offload-animals/103412828](http://www.abc.net.au/news/2024-02-01/mv-bahijah-live-export-ship-berths-fremantle-to-offload-animals/103412828) (2024).
- Norri, R.; Norman, G. *National Livestock Export Industry Shipboard Performance Report 2011*; Meat and Livestock Australia Ltd.: North Sydney, Australia, **2012**.
- Norris, R.; Richards, R.; Dunlop, R. An epidemiological study of sheep deaths before and during export by sea from Western Australia. *Aust. Vet. J.* **1989**, *66*(9), 276–279.
- Norris, R.; Richards, R. Deaths in sheep exported by sea from Western Australia: analysis of ship master's reports. *Aust. Vet. J.* **1989**, *66*, 97–102.
- O'Sullivan, S. Animals and the politics of equality; In *The Political Turn in Animal Ethics*; Garner, R., O'Sullivan, S., Eds.; Rowman and Littlefield: London, UK, **2016**.

Phillips, C. *The Welfare of Animals: The Silent Majority*; Springer: Dordrecht, Germany, 2009.

Phillips, C. Sheep farmers urged to heed live export heat stress research. Available online: [www.sheepcentral.com/sheep\\_farmers\\_urged\\_to\\_heed\\_live\\_export\\_heat\\_stress\\_research](http://www.sheepcentral.com/sheep_farmers_urged_to_heed_live_export_heat_stress_research) (2020).

Phillips, C. Zoonotic disease risks of live export of cattle and sheep, with a focus on Australian shipments to Asia and the Middle East. *Animals* **2022**, 12(23), 3425.

Reimert, I.; Webb, L.; van Marwijk, M.; Bolhuis, J. Review: towards an integrated concept of animal welfare. *Animal* **2023**, 17(S4), 100838.

Remeikis, A. Labor promises to ban live sheep exports and have meat processed in Australia. Available online: [www.theguardian.com/australia-news/2018/may/03/labor\\_promises\\_to\\_ban\\_live\\_sheep\\_exports\\_and\\_have\\_meat\\_processed\\_in\\_australia](http://www.theguardian.com/australia-news/2018/may/03/labor_promises_to_ban_live_sheep_exports_and_have_meat_processed_in_australia) (2018).

Renwick, A. Australia is set to ban live sheep exports. What will this mean for the industry? Available online: <https://theconversation.com/australia-is-set-to-ban-live-sheep-exports-what-will-this-mean-for-the-industry-229908> (2024).

Rodan, D.; Mummery, J. Doing animal welfare activism everyday: questions of identity. *Continuum* **2016**, 30(4), 381–396.

Rousing, T.; Bonde, M.; Sorensen, J. Aggregating welfare indicators into an operational welfare assessment system: a bottom up approach. *Acta Agriculturae Scandinavica, Section A: Animal Science* **2001**, 30, 53–57.

RSPCA Australia. Live sheep export is cruel, unpopular and unsustainable; Available online: [www.rspca.org.au/latest\\_news/blog/live\\_sheep\\_export\\_cruel\\_unpopular\\_and\\_unsustainable](http://www.rspca.org.au/latest_news/blog/live_sheep_export_cruel_unpopular_and_unsustainable) (2022).

RSPCA Australia. RSPCA Australia Submission: Phase Out of Live Sheep Exports by Sea; Available online: [https://kb.rspca.org.au/wp-content/uploads/2023/07/2023\\_05\\_31\\_Submission\\_Phase\\_Out\\_of\\_Live\\_Sheep\\_Exports\\_by\\_Sea.pdf](https://kb.rspca.org.au/wp-content/uploads/2023/07/2023_05_31_Submission_Phase_Out_of_Live_Sheep_Exports_by_Sea.pdf) (2023a).

RSPCA Australia. Media release: More than 7 in 10 Western Australians still want live sheep export to end; Available online: [www.rspca.org.au/latest\\_news/media\\_centre/breaking\\_news\\_more\\_7\\_10\\_western\\_australians\\_still\\_want\\_live\\_sheep\\_export\\_end](http://www.rspca.org.au/latest_news/media_centre/breaking_news_more_7_10_western_australians_still_want_live_sheep_export_end) (2023b).

RSPCA Australia. What are the Five Domains of Animal Welfare? Available online: [https://kb.rspca.org.au/knowledge\\_base/what\\_are\\_the\\_five\\_domains\\_of\\_animal\\_welfare](https://kb.rspca.org.au/knowledge_base/what_are_the_five_domains_of_animal_welfare) (2024a).

RSPCA Australia. Media release: RSPCA statement on the DAFF decision and the unloading of animals from the MV Bahijah; Available online: [www.rspca.org.au/latest\\_news/media\\_centre/rspca\\_statement\\_on\\_the\\_daff\\_decision\\_and\\_the\\_unloading\\_of\\_animals\\_from\\_the\\_mv\\_bahijah](http://www.rspca.org.au/latest_news/media_centre/rspca_statement_on_the_daff_decision_and_the_unloading_of_animals_from_the_mv_bahijah) (2024b).

RSPCA Australia. Media release: Starving, sweltering and sick independent data debunks industry claims and reveals the ongoing trust of live sheep export; Available online: [www.rspca.org.au/latest\\_news/media\\_centre/starving\\_sweltering\\_and\\_sick\\_independent\\_data\\_debunks\\_industry\\_claims\\_and\\_reveals\\_the\\_ongoing\\_truth\\_of\\_live\\_sheep\\_export](http://www.rspca.org.au/latest_news/media_centre/starving_sweltering_and_sick_independent_data_debunks_industry_claims_and_reveals_the_ongoing_truth_of_live_sheep_export) (2024c).

RSPCA South Australia. The cruel, the bad and the ugly: debunking Australia's live export industry; Available online: [www.rspcasa.org.au/debunking\\_australias\\_live\\_export\\_industry](http://www.rspcasa.org.au/debunking_australias_live_export_industry) (2021).

RSPCA South Australia. Good riddance to shameful chapter in SA's past; Available online: [www.rspcasa.org.au/good\\_riddance\\_to\\_shameful\\_chapter\\_in\\_sa\\_past](http://www.rspcasa.org.au/good_riddance_to_shameful_chapter_in_sa_past) (2024).

Rubio, N.; Xiang, N.; Kaplan, D. Plant based and cell based approaches to meat production. *Nat. Comm.* **2020**, 11, 6276.

Schipp, M.; Sheridan, A. Applying the OIE Terrestrial Animal Health Code to the welfare of animals exported from Australia. *Revue scientifique et technique* **2013**, 32(3), 669–683.

Silanikove, N. Effects of heat stress on the welfare of extensively managed domestic ruminants. *Livest. Prod. Sci.* **2000**, 67, 1–18.

Sinclair, M.; Derkley, T.; Fryer, C.; Phillips, C. Australian public opinions regarding the live export trade before and after an animal welfare media exposé. *Animals* **2018**, 8(7), 106.

Sinclair, M.; Lee, N.; Hötzel, M.; de Luna, M.; Sharma, A.; Idris, M.; Derkley, T.; Li, C.; Islam, M.; Iyasere, O.; Navarro, G.; Ahmed, A.; Khruapradab, C.; Curry, M.; Burns, G.; Marchant, J. International perceptions of animals and the importance of their welfare. *Front. Anim. Sci.* **2022**, 3.

Singer, P. *Practical Ethics*; Cambridge University Press: New York, USA, 2001.

Singer, P. The live export trade is unethical. It puts money ahead of animals' pain; Available online: <https://theconversation.com/the-live-export-trade-is-unethical-it-puts-money-ahead-of-animals-pain-96849> (2018).

Smart, N. Animals as stakeholders; In *Animals and Business Ethics*; Thomas, N., Ed.; Palgrave Macmillan: London, UK, 2022.

Stockman, C.; Barnes, A.; Maloney, S.; Taylor, E.; McCarthy, M.; Pethick, D. Effect of prolonged exposure to continuous heat and humidity similar to long haul live export voyages in Merino wethers. *Anim. Prod. Sci.* **2011**, 51, 135–143.

Stokes, J.; Mullan, S.; Takahashi, T.; Monte, F.; Main, D. Economic and welfare impacts of providing good life opportunities to farm animals. *Animals* **2020**, 10(4), 610.

Sullivan, K.; Varischetti, B.; McCosker, M. Labor confirms plan to end live sheep exports if Albanese becomes PM. Available online: [www.abc.net.au/news/2022-05-05/labor-federal-election-win-would-end-live-sheep-exports/101041416](http://www.abc.net.au/news/2022-05-05/labor-federal-election-win-would-end-live-sheep-exports/101041416) (2022).

Towie, N. Live export ship to remain in WA with 15,000 livestock after regulator blocks voyage to Israel; Available online: [www.theguardian.com/australia-news/2024/feb/05/live-export-ship-stranded-off-western-australia-with-15000-livestock-after-regulator-blocks-voyage-to-jordan](http://www.theguardian.com/australia-news/2024/feb/05/live-export-ship-stranded-off-western-australia-with-15000-livestock-after-regulator-blocks-voyage-to-jordan) (2024).

Villanueva, G. 'In the corridors of power': how the animal movement changed Australian politics, 1979–1991. *Aust. J. Politics Hist.* **2015**, 61(4), 546–561.

Wahlquist, C. Death of 2,400 Australian sheep on ship to Middle East sparks investigation. Available online: [www.theguardian.com/world/2018/apr/05/disgusting-death-of-2900-australian-sheep-on-ship-to-middle-east-sparks-investigation](http://www.theguardian.com/world/2018/apr/05/disgusting-death-of-2900-australian-sheep-on-ship-to-middle-east-sparks-investigation) (2018).

Wahlquist, C. Australia to phase out live sheep export amid opposition from peak farmers body; Available online: [www.theguardian.com/australia-news/2023/mar/03/australia-to-phase-out-live-sheep-export-amid-opposition-from-peak-farmers-body](http://www.theguardian.com/australia-news/2023/mar/03/australia-to-phase-out-live-sheep-export-amid-opposition-from-peak-farmers-body) (2023).

Western Australian Department of Primary Industries and Regional Development. Sheep live export. Available online: [www.agric.wa.gov.au/sheep/sheep-live-export?page=0%2C1](http://www.agric.wa.gov.au/sheep/sheep-live-export?page=0%2C1) (2020).

Willis, R.; Dunston Clarke, E.; Keating, L.; Fleming, P.; Collins, T. Australian livestock export industry workers' attitudes toward animal welfare. *Animals* **2021**, 11(5), 1411.

World Animal Protection. New research reveals Aussies want strong animal welfare commitments this election; Available online: [www.worldanimalprotection.org.au/news/new-research-reveals-aussies-want-strong-animal-welfare-commitments-election](http://www.worldanimalprotection.org.au/news/new-research-reveals-aussies-want-strong-animal-welfare-commitments-election) (2016).

World Organisation for Animal Health. Animal Welfare: A Vital Asset for a More Sustainable World; Available online:  
[www.woah.org/app/uploads/2024/01/en\\_woah\\_visionpaper\\_animalwelfare.pdf](https://www.woah.org/app/uploads/2024/01/en_woah_visionpaper_animalwelfare.pdf) (2024).

Zhou, I. Export Control Amendment (Ending Live Sheep Exports by Sea) Bill 2024; Available online:  
[https://parlinfo.aph.gov.au/parlInfo/download/legislation/billsdgs/9775790/upload\\_binary/9775790.pdf](https://parlinfo.aph.gov.au/parlInfo/download/legislation/billsdgs/9775790/upload_binary/9775790.pdf) (2024).



# CONTACT US

Postal Address:



Alex Vince, Campaign Director  
Lisa J Ryan, Regional Campaign Manager

Connect with us on social media

