Ministry for Primary Industries
Manatū Ahu Matua

Welfare Pulse

Animal welfare in New Zealand and around the world

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CONTENTS

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Tēna koutou katoa

We are pleased to bring you another issue of *Welfare Pulse*, the Ministry for Primary Industries' magazine with news and updates from New Zealand and relevant for New Zealand. This issue has been delayed by another COVID-19 event – this time based on Auckland. Teams across MPI continue to work to support animals and their owners and carers through the ongoing impacts of COVID. This is the focus of an article in this issue.

This issue brings regular updates on the development and implementation of our standards, our teams and highlights from our work programmes. There are also interesting updates from elsewhere including on zoos, dogs, calves and NAWAC. We also belatedly acknowledge Wayne Ricketts' NZVA award.

Nga mihi – best wishes and happy reading.

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Back-rub

Introduction

This article discusses the condition called back-rub. This is an injury that is identified primarily in cattle during transport. It is the most common cause of animal welfare regulatory infringements issued by MPI since the Animal Welfare (Care and Procedures) Regulations came into effect in October 2018.

Fifty-four animal welfare regulations came into effect in October 2018 under the Animal Welfare Act 1999. Of the 54 regulations, 16 related to "stock transport". One of these regulations related to the condition called "back-rub".

Regulation 32 "Prevention of back-rub" states that "a person must not transport a cattle beast, deer, sheep, goat, or pig in a manner that causes back-rub". The vast majority of breaches of regulation 32 have been identified in cattle.

The regulation defines back-rub as follows

"A skin abrasion that –

(a) is bleeding or discharging; and

(b) is located on the head, hips, neck, spine, or high points on the back; and

(c) covers a combined area of more than 50 cm^2".

Back-rub occurs in transport as a result of the dorsal surface of the animal, at the points defined in the regulation, coming in contact with the superstructure of a livestock vehicle or crate. Commonly the height of the animal is a significant factor, as well as the position of the animal within the crate, such that during the journey the dorsal surfaces of the animal can come into contact with the superstructure of the truck or trailer. Cattle transport crates commonly have two decks, and back rub occurs more commonly with animals transported on the top deck. Commonly the height of the top deck is lower than the bottom deck.

Skin lesions are often seen over the sacral and coccygeal vertebrae or points of the hips, but rarely on the other surfaces of the animal as defined in the regulation. To breach the regulation the skin abrasion must include non-compliance with all sections (a), (b) and (c) of regulation 32. MPI Verification Services (VS) veterinarians have identified almost all infringements issued by MPI against this regulation at ante-mortem inspection at meat slaughter premises. VS staff put together a file of evidence including photographs of the lesions against a standard measure to demonstrate the lesion(s) cover a combined area of over 50 cm^2, a veterinary report including identification tags and Animal Status Declaration information and trucking docket information linking the animal(s) involved with the owner/supplier and with the transport company and journey. This file is then referred to MPI Compliance who make the final decision on whether the case breaches the regulation and if the evidence clearly links the animal to the supplier and transporter. In the majority of cases it is the transporter who is issued with the infringement notice of $500 per animal.

MPI Compliance data

MPI Compliance received 672 animal welfare cases from 1 January to 9 June 2020; this is less than for the same period in 2019 when 797 animal welfare cases were received. 51.2 percent of this year's cases have been referrals from MPI Verification Services veterinarians. MPI Compliance has served 337 infringements notices (from 1 January to 9 June 2020) related to the Care and Procedures regulations.

48.3 percent of all infringement notices issued so far in 2020 (to 9/6/20) relate to back-rub. This is slightly below the same period in 2019 where 51.9 percent of infringements issued were for this offence. All referrals for back-rub in 2020 have come from MPI VS staff at meat processing premises.

Note: Verification Services also identify significant numbers of animal welfare cases of back-rub that do not meet the criteria required to breach the regulation, particularly regarding the more than 50 square cm requirement.

Discussion

The result of back-rub injuries can vary from noticeable areas of blackened hair on the hide, to noticeable patches of hair loss, to more severe lesions with deeper trauma to the skin surface, causing bleeding and discharging to an extent as defined in the regulation wording above. In more severe cases the lesions extend through the dermis and subcutaneous tissue and in some cases down to the bone. These lesions cause significant pain and distress to the animals and in many instances they are unable to escape from the situation as they are relatively densely packed within the crate with other cattle. MPI sees a wide range of back-rub lesions many of which do not meet the threshold as defined in the regulation.

Back-rub lesions are painful for the animals affected whether or not the lesions meet the requirement for an infringement defined in the regulation. When these animals are slaughtered there can be significant bruising to the underlying tissues.

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The carcass will need to be trimmed in most cases to remove the bruised subcutaneous tissue and muscle, which impacts financially on the farmer and processing company alike. However, more serious is the welfare consequence to the animals involved. The injuries appear to be due to an accumulation of abrasive forces over some time and would be accompanied by sustained pain and distress for the animal.

Anecdotally, risk factors for back-rub lesions are tall cattle travelling long distances on the upper decks of stock trucks. There is an extensive amount of work published overseas around bruising and stress associated with land transport of cattle. However, New Zealand is unique in that invariably our animals travel on 2-tier trucks where the upper deck is significantly shorter than the lower deck. Additionally, our trucks are not designed 'fit for purpose', rather they are designed to transport multiple species and different ages of animals, resulting in a compromised design for some classes of livestock.

Length of the journey is also a common factor such that the abrasion and back-rub lesions get worse the longer the journey and the more abrasion that occurs.

It is very unlikely that any other source of injury would cause similar lesions. Meat processing premises are required to meet the requirements of the Commercial Slaughter Code of Welfare (1 October 2018) which includes facilities that do not cause injury to animals. Compliance with the code of welfare is monitored by MPIVS veterinarians.

Other possible causes of these lesions could be damage caused by poor yarding design on farms or sale yards or riding behaviour within a group of animals, namely young bulls, within a consignment. With these scenarios, the appearance of the injuries, and the circumstances (riding activity in bulls), allow for differentiation of these injuries from the more classic back-rub transport related injuries. MPIVS has a comprehensive animal welfare training and calibration programme using photographs and videos to ensure all staff have been calibrated to assess when each of the relevant regulations has been breached.

Conclusion

There has been some work by a number of livestock transport companies to increase the height of the top deck of the standard livestock transport crates to minimise the risk of these lesions in larger/taller animals. However these redesigns have been limited by the national crate standard that limits the height of transport crates for health and safety reasons.

Other initiatives that have been taken include the use of single deck trucks to transport abnormally large or tall animals. This may minimise the risk of breaching the regulation but adds to the cost of transport in what is a very competitive industry.

Better communication between all parties involved in the supply chain plays a critical role in preventing these injuries. Timely communication between the supplier, transporter, agent and processor to identify high risk animals can assist in minimising the risks of pain and distress to animals and to the enforcement of the regulation by MPI.

Further work is needed by all parties to address the causes of this condition continuing to be a major cause of injury, pain and suffering in livestock transport.

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New animal welfare regulations

New regulations to strengthen our animal welfare system have been approved by the Government. The new regulations clarify who can perform significant surgical procedures on animals and in what circumstances.

They relate to a wide variety of animals and procedures performed for a variety of reasons including:

- animal or farm management purposes, e.g. castration;
- animal health, e.g. dentistry;
- identification, e.g. branding;
- breeding, e.g. rectal pregnancy examinations;
- harvesting products, e.g. deer velvet antler removal; and
- aesthetics, e.g. cropping dogs' ears to make them stand upright.

The majority of the regulations reflect current practice, but some raise the standards under which procedures can be performed. For example, some regulations, such as freeze branding dogs, require that pain relief be provided to the animal throughout the procedure.

The regulations were issued in August 2020. However, to provide time for people to understand their new obligations under the regulations the vast majority will have a delayed commencement and come into force on 9 May 2021.

Most of the regulations have prosecutable offences which could result in fines and criminal convictions. Others are infringement offences, with a penalty fee attached. In circumstances when there is a severe impact on an animal, a prosecution may be taken directly under the Animal Welfare Act, which has substantially higher penalties than the regulations.

The new regulations, the Animal Welfare (Care and Procedures) Amendment Regulations 2020, are available on the **New Zealand Legislation website**. These will be incorporated into the Animal Welfare (Care and Procedures) Regulations 2018 in the future.

For more details on the new regulations visit the **Ministry for Primary Industries website**.

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MPI Animal Welfare Compliance Prosecution Results

February 2020 – July 2020

Kunicich, February 2020

Laura Jane Kunicich appeared before Judge McDonald in the Kaitaia District Court and pleaded guilty to the one charge under section 14 of the Animal Welfare Act of keeping a severely lame heifer alive while it was in such a condition that it was suffering unreasonable pain or distress. She was fined $1200 and ordered to pay the vet costs of $420 and $130 court costs.

Lassen, February 2020

Gregory John Lassen pleaded guilty in the Christchurch District Court to two charges, one relating to failing to treat lameness and one charge for failing to provide adequate food for sheep. Some sheep were emaciated to the extent that euthanasia was necessary to end suffering, some were lame from poor hoof care. He was convicted and fined $8,200.

Jones, February 2020

James Michael Jones was charged in the Kaitaia District Court with obstruction of an Animal Welfare Inspector who was trying to take a bodily sample from a dead calf. He was convicted and discharged and ordered to pay $500 to an animal welfare charity.

Steiner, February 2020

Glen Raymond Steiner was charged in the Tokoroa District Court after a significant number of tail-break injuries were identified in a dairy herd of approximately 407 cows, with around 76 percent of the herd affected, some with multiple injuries. He was given four months community detention, 120 hours community work, disqualification from owning or being in charge of all bovine animals for 3 years, and ordered to pay vet bills of $954.

Kirk, April 2020

James Andrew Nicholas Kirk was charged in the Nelson High/District Court for failing to follow a direction to provide veterinary treatment or euthanasia to a yearling bull, thus prolonging its pain and distress. He was convicted and sentenced with a total fine of $3,550.

Robinson, May 2020

Ross Derek Sidney Robinson was charged in the Whangarei High/District Court for failing to provide treatment to a Friesian cow with severe black mastitis. After changing his plea to guilty, he was convicted and sentenced with a fine of $1800 plus $959 veterinary costs and $130 court costs.

Kuriger, June 2020

Tony Kuriger, Oxbow Dairies Ltd, was charged in the Palmerston North District Court with ill treatment of dairy cattle by failing to care for underweight and lame cattle. He was convicted and ordered to pay veterinary and export report fees of $4060. The company was also found guilty of wilful ill-treatment and fined $30 000.

Martin, June 2020

Alan John Charles Martin was charged in the Kaikohe District Court with failing to meet the physical, health and behavioural needs of six Hereford cattle and a Hereford cow, namely proper and sufficient food. Additionally he failed to ensure a mob of 60 sheep were shorn, ill-treated a Hereford cow by not providing adequate treatment, ill-treated a Hereford cow with cancer eye and ill-treated a Hereford bull by not ensuring it was dead after euthanasia. The judge took a starting point of $6500 across all four charges, raised that to $8000 because of convictions in 2017, gave him 20 percent discount for his guilty pleas, leaving an end fine of $6400 ($1600 plus court costs per charge). He was also ordered to pay $1136.50 vet fees and disqualified from owning or having authority over farm animals for 5 years.

StemVet NZ Ltd, July 2020

StemVet NZ Ltd was sentenced on 2 charges in the Tauranga District Court. The first charge, under section 55 of the Agricultural Compounds and Veterinary Medicines Act 1997, was that between 18 December 2015 and 25 February 2019 on 71 separate occasions the defendant sold a trade name product “SGF 1000” in breach of a condition that it should not be sold. On this charge the defendant was fined $3,750.

The second charge, under section 83 of the Animal Welfare Act 1999, was carrying out a project with a trade name product “SGF 1000” without the approval from the Animal Ethics Committee. On this charge the defendant was fined $750.

Whitaker, July 2020

Ian Christopher Whitaker was charged in the Whangarei High/District Court with failing to comply with section 11 of the Animal Welfare Act 1999 by not providing treatment to an ill Friesian heifer that was laterally recumbent and close to death. He was sentenced and fined $4000.

Codes of ethical conduct

– approvals, notifications and terminations since Welfare Pulse issue 30

All organisations involved in the use of live animals for research, testing or teaching are required to adhere to an approved code of ethical conduct.

Codes of ethical conduct approved

Nil

Notifications to MPI of arrangements to use an existing code of ethical conduct

- Cave and Harvey Research (to use AgResearch Ltd's code)
- Estendart Holdings Ltd (to use AgResearch Ltd's code)
- Ministry for Primary Industries Disease Control Group (to use AgResearch Ltd's code)
- neXtgen Agri Ltd (to use Invetus NZ Ltd's code)
- Nutrinza (to use University of Waikato's code)
- Smart Farm Data Ltd (to use AgResearch Ltd's code)
- SNPshot Technologies Ltd (to use AgResearch Ltd's code)
- StemVet New Zealand Ltd (to use Waikato Institute of Technology Ltd's code)

Amendments to codes of ethical conduct approved by MPI

Nil

Minor amendments to codes of ethical conduct notified to MPI

Nil

Codes of ethical conduct revoked or expired or arrangements terminated or lapsed

Nil

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Codes of Welfare

– update on consultation, development and review

Codes of welfare are issued by the Minister for Primary Industries under the Animal Welfare Act 1999. Codes outline minimum standards for care and handling of animals and establish best practices to encourage high standards of animal care.

Issued by the Minister

Amendment to Code of Welfare: Dairy Housing

Under Development

Code of Welfare: Breeder Chickens

A complete list of the codes of welfare can be found on our website at: **https://www.agriculture.govt.nz/protection-and-response/animal-welfare/codes-of-welfare/**

The codes review timeline is at: **https://www.agriculture.govt.nz/protection-and-response/animal-welfare/national-animal-welfare-advisory-committee/**

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Poultry Breeder Code of Welfare

The National Animal Welfare Advisory Committee (NAWAC) is reviewing the Layer Hen Code of Welfare and the Meat Chicken Code of Welfare in 2020. However, their first priority is developing a Breeder Code of Welfare for layer and meat chicken breeders. There is currently no such code and this is a priority for NAWAC in discussions with the Poultry Industry Association of New Zealand and the Egg Producers Federation.

The industry has organised visits to a breeder farming operation, and a date is being finalised for the NAWAC poultry subcommittee to visit a layer hatchery and view beak tipping using infrared beam technology.

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Alternatives to CO_2 Update

Further to the article in the previous issue of Welfare Pulse, Ngaio Beausoleil has provided the following update.

Unfortunately, the 2020 Swiss Federal Food Safety and Veterinary Office 3Rs Symposium – *Alternatives to CO_2* – due to be held in Switzerland in May has been postponed. Ngaio Beausoleil has again been invited to be on the scientific committee and to give a presentation when the event does take place. On the basis of the 2019 Research Roadmap, FSVO has released a targeted research call on alternatives to CO_2. The aim of this research call is to evaluate gases or gas mixtures in comparison to CO_2 which might humanely induce unconsciousness prior to euthanasia and slaughtering, in two age groups of mice, rats, poultry and pigs. Information can be found at **https://www.simap.ch/shabforms/COMMON/search/searchresultDetail.jsf**

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UFAW appointment

MPI's Animal Welfare teams have long enjoyed links with the Universities Federation of Animal Welfare (UFAW) and Humane Slaughter Association (HSA) as a member, sharing conferences (https://www.ufaw.org.uk/ufaw-news/news/post/219-animal-welfare-across-borders-meeting-hong-kong), referring to HSA advice in codes of welfare and contributing to initiatives such as humane rodent control guidance.

Dr Huw Golledge BSc PhD was appointed as the new chief executive of both UFAW and its sister charity, HSA, following the retirement of Dr Robert Hubrecht at the end of 2019. Dr Golledge's background is in neuroscience, with specialties in animal welfare, electrophysiology, animal behaviour, bioethics and anaesthesia. Before joining UFAW and the HSA he was a senior research associate at Newcastle University working on neurophysiological and behavioural methods to assess and improve the welfare of laboratory animals. He is interested in the application of rigorous scientific investigation to advance the understanding and ultimately to improve the welfare of animals. Highlighting the long and proud tradition that both organisations have in working to improve knowledge and understanding of animals and their needs through scientific research, education and training, Dr Golledge stated "I consider it a privilege to lead the charities as they enter a new decade of pushing the boundaries of our knowledge to benefit animal welfare. I also look forward to helping both charities disseminate the findings of the research we fund, and animal welfare science more generally to everyone who can use this information to improve animal welfare, from governments and regulators to animal caretakers and the general public."

Outstanding service award for Wayne Ricketts

At the end of 2019, the New Zealand Veterinary Association (NZVA) recognised Dr Wayne Ricketts with an Outstanding Service Award. While Wayne has many strings to his bow, much of his career has been focused on the well-being of animals, starting from an interest in welfare during transport during his time with the New Zealand Ministry of Agriculture. A move to the Animal Welfare Directorate saw him in the role of Technical Adviser to the National Animal Welfare Advisory Committee, which included an involvement in the development of codes of welfare. During this time, he also acted as adviser to two Ministers of Agriculture.

Wayne then moved to the NZVA as the Veterinary Resources Manager where he also co-chaired the National Animal Welfare Emergency Management Advisory Group for seven years. He joined World Animal Protection in 2014 as Programme Manager Disaster Management for the Asia-Pacific region. In this role he worked with countries in the Asia-Pacific region to help them with emergency planning for communities and their animals during disasters.

Wayne was among the first cohort of veterinarians to attain membership in animal welfare of the Australian and New Zealand College of Veterinary Scientists. He is currently the MPI National Animal Welfare Emergency Management Coordinator.

Animal welfare apart, Wayne also plays a huge role in the pastoral care and wellbeing of veterinarians. He has been an active member of the NZVA wellbeing committee and provides outstanding support through the NZVA mentoring scheme to all veterinarians (especially young and recent graduates experiencing personal and professional issues).

Photo credit: Phil Stewart

World Associations of Zoos and Aquariums: Animal-Visitor Interactions (AVI) Guidelines

Zoos and aquariums have seen a rapid growth in interactive experiences in recent years. The progression from simply displaying zoo and aquarium animals for visitors to observe, to presenting experiences that bring humans and animals into close proximity, has rapidly gained momentum as zoos and aquariums have evolved. From walk-through, swim-through or drive-through experiences to direct animal contact, such as touch pools, hands-on education animals or petting areas/touch paddocks, the interactive experiences are varied.

Some studies have shown that such interactions contribute to an increase in pro-conservation behaviours and to enhance conservation education (e.g. Skibins & Powell[1], 2013; Powell & Bullock, 2015[2]). Although such AVIs are popular, the effect of visitor presence or direct contact on the animal's well-being must also be considered, as assuring positive animal welfare at all times is of paramount importance. Other responsibilities include considering the safety of visitors and the animals, regular evaluation of the relevance of the interactive experience and the ability of the message being delivered to encourage subsequent positive responsible behaviours.

As more zoos and aquariums introduce AVIs to their visitor experiences, there will be increasing opportunities to evaluate the effectiveness of animal interactions in regard to conservation education, and also to carefully consider the welfare of animals in these interactions. Importantly, there is evidence that in some AVIs some animals may display behaviours indicating discomfort. More research is required to directly evaluate the impacts of such experiences, and it is the responsibility of the zoos and aquariums providing AVIs to undertake this work and to provide visitors with interactions that do not impede the animals' welfare.

As more and more travel agencies question whether animal visitor interactions are ethical, it is imperative that the World Associations of Zoos and Aquariums (WAZA) has clear guidelines for members to use to assure ourselves that we are meeting best practice standards and community expectations for the animals in our care. It is important that we lead this conversation with our community as leading zoos and aquariums.

Zoos and aquariums have a responsibility to achieve high standards of animal welfare in support of their goals as modern conservation organisations. This includes animal welfare in the context of animal-visitor interactions (AVIs). Any animal that participates in an AVI should have opportunities for positive welfare outcomes. The guidelines are based on the scientific evidence provided in the World Zoo and Aquarium Animal Welfare Strategy.

The guidelines for members of WAZA on animal-visitor interactions in WAZA member zoos are based on the 2003 WAZA Code of Ethics and Animal Welfare (WAZA 2003), the 2015 World Zoo and Aquarium Animal Welfare Strategy (Mellor, Hunt & Gusset, 2015) and the 2015 WAZA resolution on animal interactions [3].

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1 Skibins, J. C., & Powell, R. B. (2013). Conservation caring: Measuring the influence of zoo visitors' connection to wildlife on pro-conservation behaviors. *Zoo Biology, 32*(5), 528-540.

2 Powell, D. M., & Bullock, E. V. (2014). Evaluation of factors affecting emotional responses in zoo visitors and the impact of emotion on conservation mindedness. *Anthrozoös, 27*(3), 389-405.

3 *Resolution 70.1* adopted at the 70th WAZA Annual Conference (2015).

Improving calf health and welfare through the automation of early disease indicators

Disease detrimentally affects animal health and welfare and has significant economic impacts on farm associated with the costs of disease prevention, control, and treatment, and reduced production. Implications also arise relating to product quality, consumer demand for animal products and biosecurity. Additionally, zoonoses and the extra stress farmers experience when caring for sick animals pose concerns to human health.

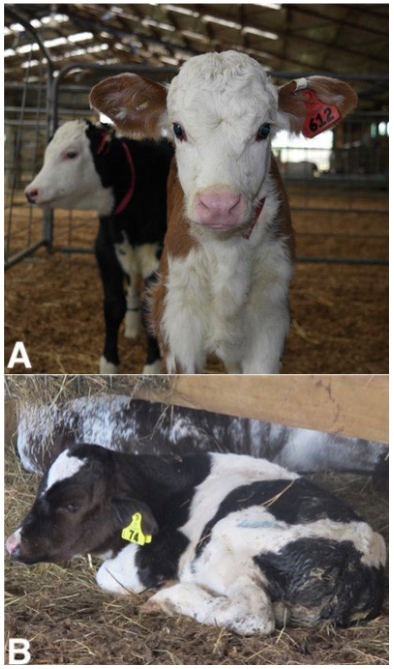

Photo credit: Gemma Lowe & Mairi Stewart

(A) Healthy and alert calf compared to (B) a calf with NCD displaying clinical symptoms including diarrhoea and dehydration.

Neonatal calf diarrhoea (NCD) is one particular disease of significant concern to beef and dairy industries worldwide. Commonly affecting calves during their first 28 days of life, NCD is a leading cause of calf morbidity and mortality. An enteric disease, NCD is caused by pathogens including Escherichia coli, Cryptosporidium, Salmonella, rotavirus and coronavirus. These pathogens inflict substantial intestinal damage causing affected animals to suffer from severe diarrhoea, resulting in dehydration, weight loss, anorexia, acidosis, and electrolyte imbalances. By the time clinical symptoms are evident much of the associated intestinal tissue damage has already occurred.

With automation increasing in the livestock industry, the development of non-invasive, automated on-farm systems with the capabilities to detect animals presenting early signs of disease are essential. Such systems would be beneficial for minimising the severity of disease through promoting earlier treatment and isolation of diseased animals.

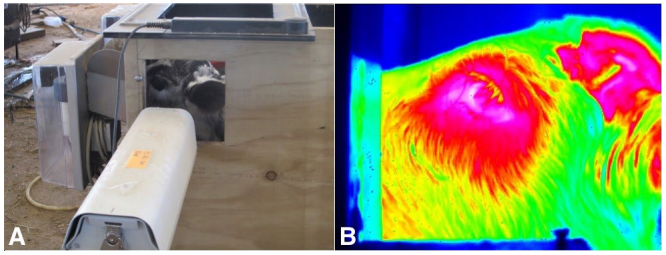

Photo credit: Gemma Lowe & Mairi Stewart

(A) Automated infrared camera collecting images of the eye and cheek regions as a calf feeds from an automatic milk feeder with (B) example infrared image.

To facilitate the development of such automated systems we investigated the suitability of several behavioural and physiological responses which could be incorporated into automated systems to act as early indicators of NCD. Feeding behaviours were recorded using automatic milk feeders. Automated infrared cameras, which measure radiated heat, were installed at the milk feeders to collect infrared images. Algorithms were developed to automate infrared image analysis of the eye and cheek areas. Lying behaviours were recorded using accelerometers. These responses were recorded in heifer calves which were monitored daily for clinical signs of NCD and assigned to either 5L/d (as per common practice in NZ) or 10L/d milk allowances. Higher milk allowances are more commonly used with automatic calf feeders and in overseas systems.

Prior to clinical signs, feeding behaviours typically only changed for calves on the 10L/d milk allowance with a decrease in milk consumption and increased total and rewarded (calf consumed milk) visits to the feeder. We considered the lack of change for calves on the 5L/d milk allowance to reflect an inability for these calves, being on a comparatively restricted diet, to alter their feeding behaviour whilst ensuring enough consumption to maintain function. There was a decrease in eye and cheek temperatures, for calves on a 5L/d milk allowance, which was considered to be due to a restriction of blood flow to the extremities in response to the development of fever and a lower metabolic rate. Regardless of milk allowance, lying time and the number of lying bouts decreased and average duration of lying bouts increased prior to clinical signs. These changes in lying behaviours represent a reduction of activity and were attributed to calves becoming lethargic and attempting to conserve energy as they try to overcome the disease.

Photo credit: Mairi Stewart

Calf feeding from an automatic milk feeder.

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For calves on 10L/d and 5L/d milk allowances, the total number of visits to the feeder and number of lying bouts were the single strongest indicators of disease, respectively. Regardless of milk allowance, combinations of feeding and lying behaviours, and additionally infrared temperatures for calves on the 5L/d milk allowance, provided the strongest composite indicators of disease.

This research has made significant progress towards development of a prototype system for automated early disease detection in calves. Future testing on commercial farms is required to develop a fully integrated monitoring system, capable of reliably and non-invasively assessing calf health and welfare on-farm. Integration of the strongest measures identified in our research into automated systems has the potential to improve decision-making abilities for farmers, decrease economic costs and ultimately improve calf health and welfare.

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Increasing the visibility of New Zealand's Ministerial Advisory Committees

The Animal Welfare Act 1999 established a National Animal Welfare Advisory Committee and a National Animal Ethics Advisory Committee.

The National Animal Welfare Advisory Committee (NAWAC) advises the Minister on issues relating to the welfare of animals; develops, and advises the Minister on, codes of welfare; and makes recommendations to the Minister on regulations to be made under section 183A prescribing animal welfare standards or requirements. The current chair of NAWAC is Dr Gwyneth Verkerk, a retired veterinarian from Hamilton.

The National Animal Ethics Advisory Committee (NAEAC) advises the Minister and the Director-General on ethical and animal welfare issues arising from research, testing, and teaching (RTT); codes of ethical conduct for the use of animals for RTT; and recommends, for approval by the Director-General under section 109, such persons who are, in the opinion of the Committee, suitable for appointment as accredited reviewers to review compliance with those codes. NAEAC also provides advice to Animal Ethics Committees. The current chair of NAEAC is Mr Grant Shackell, a retired scientist from Mosgiel.

Both committees are conscious that the public has an ongoing interest in their work and for the need to be transparent in the way that they operate. In order to address the need for transparency and to build and maintain confidence in New Zealand's animal welfare system, the two committees have each put in place workplans that make their activities more available to the public.

Recently, the two committee web pages have been made easier to access and can be found simply by searching the committee acronyms (NAWAC or NAEAC).

Meeting minutes are published once they have been ratified, and these can be found on the appropriate page. Documents that each committee publishes are currently being revised and updated. These are also available on the web pages.

Both committee hold four ordinary meetings each year. Members of the public can attend the open section of these meetings.

For details about meeting attendance please contact the appropriate committee secretariat at nawac@mpi.govt.nz or naeac@mpi.govt.nz

Animal sentience
– its relevance to animal welfare and living a good life

The National Animal Welfare Advisory Committee (NAWAC) wants more people to become familiar with the concept of animal sentience and what it means for our interactions with animals.

Animal sentience – emotions, feelings and experiences

NAWAC understands animal sentience to mean that animals have emotions, feelings, perceptions and experiences that matter to them, and that these can be negative (such as pain or boredom) as well as positive (such as pleasure or comfort).

While we don't necessarily know whether animals' emotions, feelings and experiences are similar to those of humans or felt with the same intensity, they nevertheless matter to individual animals and hence have an impact on animal welfare.

Animal welfare is linked to the way animals feel and experience the world

Just as experiences can be negative or positive, the state of animal welfare can be described on a scale from negative to positive.

There are two types of experiences that will impact on an animal's welfare:

- experiences critical for survival (e.g. thirst, hunger, pain) motivate animals to engage in behaviours that correct imbalances in its internal state (e.g. feeding or drinking). Survival-critical experiences are generally negative because they signal that something is going wrong or soon will go wrong.
- experiences relating to how animals perceive their environment. These situation-related experiences can be negative or positive (e.g. pleasure, feeling secure, boredom, loneliness, fear).

Preventing negative experiences can at best lead to a neutral state of welfare – a state where animals are surviving (e.g. animals do not feel excessively hungry or thirsty or anxious). Good animal welfare, and a good life, can only be achieved when animals can also have experiences that are rewarding and positive.

Helping animals to live a good life

Emotions and feelings are subjective and cannot be measured directly. But we don't necessarily need direct evidence of *how* animals feel to achieve good animal welfare and a good life.

Here are three important steps which, when taken together, allow animals to thrive[1]:

- Cater for animals' basic needs. When animals are sick, uncomfortable or underfed/malnourished they may not be able to engage in rewarding behaviours, even if they are given the opportunity to do so. The best way to ensure animals feel healthy and comfortable is to find out exactly what nutrition they need to maintain optimal health and ensure they have access to facilities to help them to maintain their comfort, such as appropriate shade and shelter. These measures will ensure that negative experiences are minimised, allowing animals to engage in rewarding behaviours when the opportunity is presented.
- Give animals opportunities to engage in rewarding behaviours that promote positive experiences. This could be achieved, for example, by making sure that they have appropriate social companions, or by providing environmental enrichment to allow exploration, mental stimulation and the choice to engage in different behaviours.
- Where negative experiences cannot be avoided, we can look at changing husbandry practices to reduce their negative impact. For example, steps can be taken to improve how animals are handled to reduce their fear of humans. Likewise, the amount of pain an animal experiences due to the performance of painful husbandry procedures can be reduced by providing pain relief where this is not already mandatory.

When providing opportunities for rewarding behaviours…

Keep in mind the natural behaviour of the animal. Opportunities, depending on species, include a choice of foods of different textures, smells and tastes, access to devices or material they can explore and/or manipulate (e.g. straw, grooming brushes, novel items, toys), voluntary access to areas of interest (for examples the outdoors, hide-outs, platforms) or opportunities for exercise and other rewarding activities, such as play.

A simple way to provide positive experiences is to allow animals to bond with others of their kind or appropriate companions of other species, allowing positive relationships between animals to be established and maintained. Positive human-animal interactions can also promote positive experiences.

Importantly, animals, just as humans, like to feel safe and make their own choices – they like to exert some control over their lives.

1 For more information see Mellor, D.J. and Beausoleil, N.J., 2020. Moving Beyond a Problem-based Focus on Poor Animal Welfare Toward Creating Opportunities to Have Positive Welfare Experiences. In *Mental Health and Well-being in Animals*, Ed McMillan FD; p.50. (ISBN # 1786393409, 9781786393401)

For examples see below links:

Companion animals

https://www.spca.nz/advice-and-welfare/article/exercise-and-enrichment-for-dogs

https://www.spca.nz/advice-and-welfare/article/enrichment-tips-for-cats

https://www.spca.nz/advice-and-welfare/article/creating-an-enriching-home-and-environment-for-your-rabbits?cat=pets&subcat=rabbits

Sheep and dairy cattle

https://www.sruc.ac.uk/news/article/2380/cows_brush_with_happiness

https://www.sruc.ac.uk/downloads/download/1493/promoting_positive_animal_welfare_in_dairy_cattle_and_sheep

Zoo animals

https://www.youtube.com/watch?v=f2qouhXOIPo&feature=youtu.be

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Breaking news

NAWAC's thinking on sentience has been released on line here: https://www.agriculture.govt.nz/protection-and-response/animal-welfare/national-animal-welfare-advisory-committee/animal-sentience-their-emotions-feelings-and-experiences-of-life/

If you have ideas for more case studies on positive welfare, please email nawac@mpi.govt.nz

Animal welfare in a time of Covid

Covid-19 may not have immediately brought to most people's minds the potential for animal welfare issues, but, like a stone thrown into a pond, its ripples managed to spread far and wide into the primary sector, and their effects will be felt for some time yet.

The shutting down of ports in Asia due to infected workers meant that processing plants in New Zealand had to slow down, forcing farmers to hold on to livestock for longer. The additional stones thrown by drought in some areas, floods in others, and a bovine TB outbreak leading to movement restrictions for a large area of Hawke's Bay, added up to a perfect storm for many farmers, as ever-dwindling feed supplies were gobbled up by mouths that should have long departed the farm.

In short, 2020 has been a struggle for many New Zealand farmers and their animals, despite being the industry that has kept our economy afloat through the pandemic crisis. It has therefore been humbling to be a part of a huge collaborative effort on behalf of farmers to maintain animal welfare and to keep the industry going.

Restrictions on travel into New Zealand certainly contributed to the country's rapid containment and elimination of the SARS-CoV-2 virus, but not without some consequence to the primary sector. A significant number of overseas-based shearers and pregnancy scanners form part of the rural landscape from year-to-year, however, the ability of these workers to travel to New Zealand was abruptly halted by the Government. This created the potential risks of:

- some farmers being forced to unknowingly feed non-pregnant animals through a significant feed shortage, essentially sacrificing dry matter that should have gone to those that need it most;
- a large number of unshorn ewes potentially becoming cast at lambing, failing to seek shelter in inclement weather, and losing lambs to exposure;
- unshorn sheep being predisposed to fly-strike later in the year.

Beef + Lamb NZ have been working closely with Federated Farmers, the Shearing Contractors' Association, and the Ministry for Primary Industries to mitigate these risks. At the time of writing work is still being done to get shearers into the country for the coming summer.

It is hoped that the heightened recognition of farming industries as the backbone of New Zealand's economy will lead to heightened recognition of the work being done by farmers and their support organisations to ensure the food we export is safe to eat and comes from animals that led comfortable and fulfilling lives, even in the face of economic hardship and a global pandemic.

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NZ Dog Judges Health Scheme

The Dogs NZ Canine Health & Welfare Committee has been working with the New Zealand Dog Judges Association as it looks to develop and implement a scheme where judges help eliminate any trends toward exaggerations before they give rise to health problems. The overarching goal of the scheme will be to influence the breeding of sounder and healthier pedigree dogs.

It is acknowledged that judges have a strong influence on the dogs which are selected as breeding animals. Dogs that do well in the shows are likely to be more desirable for breeding. If dogs with physical exaggerations are selected as award winners, then there is a risk that the physical exaggeration will continue to a point of detriment to the breed.

The format being considered is based on the Nordic Kennel Unions Breed Specific Instructions (BSI). The BSI document lists breeds at risk of developing health problems, provides guidelines for judging, and has a form which judges must complete at the conclusion of judging each at risk breed.

Breeds included on the document will be determined based on collaboration between dog show judges, breed clubs and the Canine Health & Welfare Committee. There is a template provided by the existing BSI but there will likely be some phenotypic differences considering New Zealand's geographic isolation. Consideration will be given to an estimated risk for unhealthy exaggerations of the breed characteristics and possible misinterpretation of the breed standard. The scheme will be reviewed on a basis yet to be determined, which will likely see breeds move on and off the scheme.

The document will increase a judge's awareness of problems related to exaggerated physical features. For the judge, the scheme complements the Breed Standards and describes easily recognisable conformation features related to negative health impacts. It is important to note that the scheme does not require the judge to be a veterinarian. It will be emphasised that these features should be considered when awarding best of sex of each breed since, by these awards, the judge is saying the dog is worthy of the title Champion.

Basic considerations for all dogs include breathing, eyes, bite and teeth, weight, skin and coat, movement, and behaviour. Specific guidelines are yet to be determined for the Dogs NZ scheme, however an example under the BSI for German Shepherd is as follows:

Areas of risk are:

1. **Hindquarters:** Over-angulated and cow-hocked hindquarters with instability in hocks.
2. **Top line:** Arched and cut away in loin and croup.

Exaggeration in presentation with extreme handling precludes assessment of the demands of the standard: "the position of hind legs is slightly backwards whereby the hind limbs are parallel to each other when seen from the rear". Evaluation of the movement should be made at both trot and walk.

It is anticipated that Dogs NZ will manage the collection of this data after judges complete the forms at each judging appointment. By collecting this data, it is hoped that Dogs NZ can see any trends in physical exaggerations before they become a welfare issue; we can determine if breeders are selectively breeding away from exaggerated features; and, if intervention in conjunction with relevant breed clubs can be done, we can see where a problem is determined to exist.

This scheme will complement the various Dogs NZ inherited disease schemes well, as it will address the conformation aspect of breed-specific health concerns. Schemes such as the entire breed compulsory health testing Litter Registration Limitations (LRLs) consider inherited disease in the form of DNA diseases (progressive retinal atrophy, exercise induced collapse and the dilute gene) and multifactorial conditions such as hip and elbow dysplasia. The Judges scheme, with its conformation focus, will mean that the inherited disease screening will be reinforced by awarding non-exaggerated dogs and tracking physical features which may result in negative animal welfare outcomes.

The National Animal Welfare Advisory Committee (NAWAC) has been presented with this proposal and Dogs NZ looks forward to working with the New Zealand Dog Judges Association in the introduction of this new initiative.

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NAEAC, ANZCCART-NZ and AAALAC International Collaborations

AAALAC International is a non-governmental organisation that has been accrediting laboratory animal care and use programmes since 1965. It was the first organisation in the world to provide this service and is the only organisation today that provides a global accreditation service for animal research, testing and teaching programmes. AAALAC is a voluntary accrediting organisation that enhances the quality of research, teaching and testing by promoting humane, responsible animal care and use. It provides advice and independent assessments to participating institutions and accredits those that meet or exceed applicable standards. The AAALAC International accreditation programme is science-based and sensitive to cultural and legal differences, whilst still ensuring high standards of animal welfare.

In 2008, with sponsorship from the Ministry of Agriculture and Forestry (now the Ministry for Primary Industries, MPI), AAALAC visited nine institutions in New Zealand to provide an update about the accreditation programme and to be more accessible to questions about the programme from scientists, veterinarians and institutional administrators. At that time, AAALAC accredited 750 programmes in 29 countries. Today, approximately 1030 programmes located in 49 countries around the globe participate in the accreditation programme. Other noteworthy changes within AAALAC since that time include the addition of ANZCCART-NZ and the Commonwealth Veterinary Association (AAALAC accredits programmes in eleven Commonwealth nations) as Member Organisations to AAALAC. Dr Jim Webster serves as the delegate from AZNCCART-NZ to AAALAC. In addition, Dr Virginia Williams continues to serve as an ad hoc specialist, assisting with the conduct of accreditation site visits in the region. Also, through its Education and Outreach programme, AAALAC has also become a more regular participant in ANZLAA and ANZCCART conferences.

AAALAC recently met with NAEAC and ANZCCART-NZ representatives to discuss collaboration in areas of mutual interest. To that end, we hope AAALAC's Senior Director, Dr Javier Guillen, will be presenting at the next ANZCCART conference on the transparency agreement on animal research that he helped to forge in Spain. AAALAC will also be sponsoring a presentation on AAALAC's accreditation programme by Dr Virginia Williams. During the meeting with the NAEAC and ANZCCART-NZ representatives, AAALAC pledged to help sponsor sessions or conference activities in the coming years.

Other potential opportunities discussed during the meeting that will be explored include AAALAC International being listed by MPI as an alternative to use of an accredited reviewer and possible mention of AAALAC's accreditation programme in the MPI's Good Practice Guide for the use of animals in research, testing and teaching. A further opportunity for collaboration involves sharing information throughout the New Zealand scientific community about the Global 3Rs Awards Programme co-sponsored by AAALAC and the International Consortium for Innovation & Quality in Pharmaceutical Development (IQ), wherein up to four 5,000 USD awards are granted each year for innovative contributions toward the 3Rs of animal research. It is hoped more nominations will be submitted from New Zealand.

The last topic discussed pertained to encouraging members of the New Zealand animal research community to apply to become an ad hoc consultant/specialist. Members of AAALAC's Council on Accreditation first serve as ad hocs, during which time they develop their assessment skills. AAALAC has begun to have preliminary discussions regarding establishing a Council Section that would serve Australia and New Zealand, thereby building upon Council Sections based in Europe, North America and the Pacific Rim. The application form to serve as an ad hoc may be downloaded from the AAALAC website at: **https://www.aaalac.org/about/apply-to-become-an-ad-hoc/**.

More information about AAALAC International's accreditation programme, including the steps to achieve accreditation or apply to serve as an ad hoc consultant/specialist, may be found at: **www.aaalac.org**

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Companion Animals in New Zealand 2020

In 2020, Companion Animals New Zealand (CANZ, formerly New Zealand Companion Animal Council) has once again conducted Aotearoa's largest general survey of NZ pet owners. The survey seeks to answer vital basic questions such as "How many pets are in New Zealand?" The survey also investigates various elements of the human-animal bond, responsible animal ownership and animal welfare.

New Zealand continues to be a nation of animal lovers, with 64 percent of households having at least one pet. This equates to approximately 4.3 million pets, of which 1.2 million are cats. Cats are the most popular pet, with 41 percent of households having at least one feline, while dogs are in second place with 34 percent household penetration.

The survey results confirm the strength of the human-animal bond, with all species except fish primarily considered to be a member of the family. This feeling was strongest towards dogs, with 78 percent of households considering their canine to be a family member. For equines, about even numbers of households considered their horse to primarily be a family member or a hobby (33 percent and 32 percent, respectively).

In terms of responsible animal ownership, unfortunately our survey shows rates of desexing in cats and dogs to be slightly lower than those reported by CANZ in 2015. 88 percent of cats and 71 percent of dogs are desexed, with owners of undesexed pets citing cost and feeling the procedure is unnecessary as important reasons for not desexing. Despite New Zealand having a significant cat overpopulation problem, 16 percent of owners of undesexed cats state their cat is not desexed as they feel it is important to have at least one litter of kittens, and 12 percent state their cat is not desexed as they intend to keep it for breeding.

The survey also explored owner perceptions about companionship of their animals with both humans and conspecifics. Dogs, rabbits, and horses are all social species. Despite this, owners of these animals only felt that providing regular companionship with others of the same species was very important in 31 percent, 48 percent and 60 percent of households, respectively. When asked how important owners felt it was to provide regular companionship with humans, this was rated as very important for 81 percent of dogs, 68 percent of rabbits and 68 percent of horses.

The Companion Animals in New Zealand 2020 report can be accessed at **www.companionanimals.nz/publications**. For further information please contact the author.

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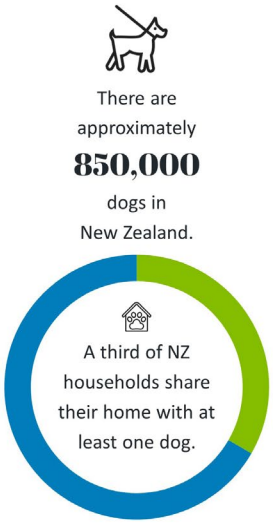

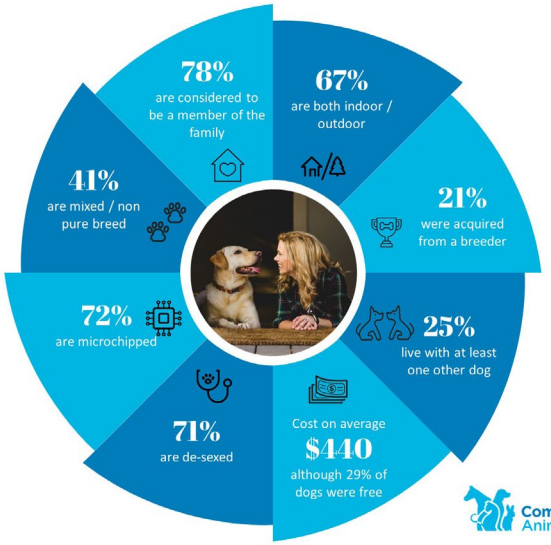

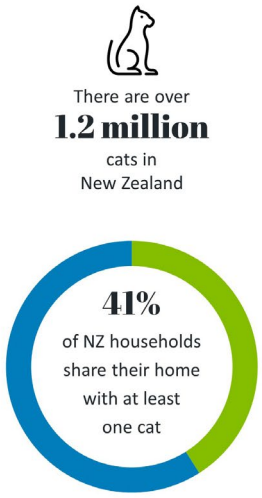

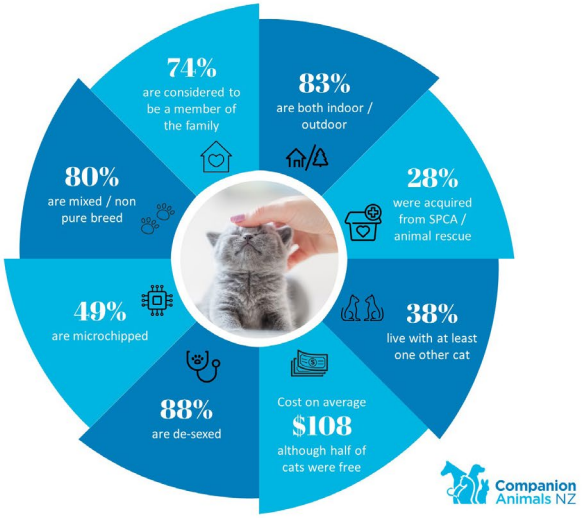

Collaboration is king for a new phase of Chinese animal welfare

Today, mainland China has no animal welfare legislation. It would be inaccurate, however, to assume that the concept is of little interest. We recently conducted a literature review to investigate the academic attention the concept had garnered in China in 10 years ending in 2018. What we found was nearly 600 academic papers, published in Chinese, by Chinese scientists, directly relating to animal welfare (publication pending). It seems animal welfare matters in China, only that we literally speak a different language, and maybe, practically and philosophically, too.

At the core of my recently submitted PhD thesis was the burning question; HOW can we contribute to improving farm animal welfare in Asia? I started by interviewing the leaders of international animal welfare organisations around the world to find out if I could identify themes that predicted successful and unsuccessful campaigns that ran across borders. The results were clear. Most of the successful initiatives described by leaders had familiar elements; engaging stakeholders and communities in locally-led and culturally respectful ways, and the importance of knowledge, moderation, flexibility and the identification and leverage of mutual benefits [1]. To be unsuccessful, initiatives only had to forget some of these key tenets, or worse, fall into the trap of eliciting a feeling of defensiveness of identity, cultural or personal [1].

Armed with this knowledge, I altered my question; HOW can we collaborate to support the improvement of farm animal welfare in Asia? It may seem like a subtle change, but it is a vitally integral one, the repercussions of which can result in the success or failure of any initiatives in the region. It was all about respecting differences, understanding culture, and, supporting empowered local solutions. To find the answers to my new question I set about asking the most obvious stakeholders; livestock industry leaders in Asia. While often overlooked in the development phase of farm animal welfare initiatives, livestock leaders are arguably in the best position to understand the challenges, and to devise and enact solutions better than anyone else. So, facilitating translated focus groups in the north, south and centre of China, Malaysia, Thailand, Vietnam, India and Bangladesh, I sat down with industry businessmen, agricultural government representatives, industry veterinarians, government veterinarians, and leading local academics. Kindly giving me their time I posed questions around a few key themes; what they see as the benefits to addressing animal welfare [2] in order to find mutual benefits; what might motivate them to improve animal welfare [3], and what they see as the most important animal welfare issues, and solutions [4]. Based on some earlier studies that had Chinese farmers and slaughtermen highlighting the lack of pre-slaughter stunning as the largest threat to animal welfare [5], I also sought to ascertain the willingness to embrace the practice of stunning for improved welfare, and why [6]. I walked away with a plethora of useful information and understanding, stakeholder supported opportunities for success initiatives, and most importantly, optimism and hope for the international future of the animal welfare movement.

Based on this premise, the Animal Welfare Standards Project (**www.animalwelfarestandards.org**) entered its third funded phase, tasked with the establishment of a collaborative Chinese animal welfare centre. The result is the Sino-Australian Animal Welfare Centre, with a hub in Beijing, and partners in Hangzhou, Guangzhou, Inner Mongolia, Fushan, and Zhengzhou. Despite its very recent establishment, Chinese partners are already undertaking local animal welfare research; from the effects of extreme cold on sheep, to an analysis of the welfare of fish being transported to markets live. Supported by coaching workshops, webinars, and the creation of a training platform and resources in Chinese, the anticipated results at the completion of the project will be multifaceted. Not only will the project support the further development of local animal welfare experts and add to an increasing body of Chinese animal welfare literature, but it will also result in an established centre from which our Chinese counterparts can build from and engage leaders from all over the world for collaboration into the future.

China hosts the world's largest pork industry, currently in the dark throes of dealing with African Swine Flu, and a population at the epicentre of near pandemic Corvid-19, born out of a market trading in wildlife species; Chinese animal management practices are likely to receive a special level of attention in the near future. The establishment of the Sino-Australian Animal Welfare Centre is perfectly placed to support this new phase of attention with local Chinese science and newly established Chinese animal welfare experts. If the recent challenges faced by the animal-human relationship in China have a silver lining, it might be just that; an opportunity to show international support, and, for the generation of respectful international collaboration.

1. Sinclair, M. and C.J.C. Phillips, Key Tenets of Operational Success in International Animal Welfare Initiatives. Animals, 2018. 8(6).
2. Sinclair, M., C. Fryer, and C.J.C. Phillips, The Benefits of Improving Animal Welfare from the Perspective of Livestock Stakeholders across Asia. Animals, 2019. 9(4): p. 123.
3. Sinclair, M., et al., Motivations for industry stakeholders in China, Vietnam, Thailand and Malaysia to improve livestock welfare Animals, 2019. 9(7): p. 416.
4. Sinclair, M. and C.J.C. Phillips, International livestock leaders' perceptions of the importance of, and solutions for, animal welfare issues. Animals, 2019. 9(6): p. 319.
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6. Sinclair, M., et al., Livestock Stakeholder Willingness to Embrace Preslaughter Stunning in Key Asian Countries. Animals, 2019. 9(5): p. 244.

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Zoo Visitor Perceptions of Animal Welfare Accreditation

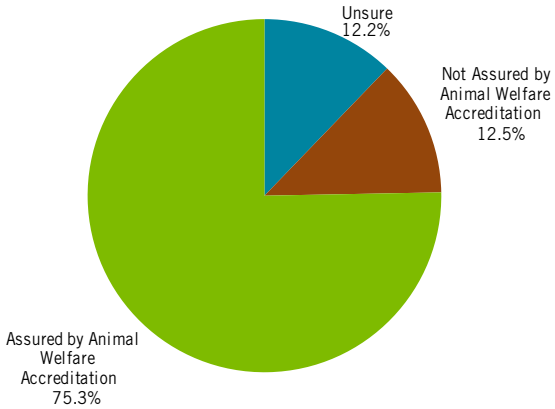
In recent years, formal accreditation programmes based upon contemporary animal welfare science have been developed to assess animal welfare within zoos, such as the accreditation programme of the Zoo and Aquarium Association Australasia (ZAA)[1] based on the Five Domains Model. Animal welfare is an important responsibility for any zoo, but does this scientific approach, and the ensuing accreditation, provide everyday zoo visitors with assurance of the welfare of the animals they see during their visit?

In November 2017 research was conducted to examine this question via a survey of visitors to Wellington Zoo; this research was in partial fulfilment of my Master of Business Administration degree with Massey University. Visitor perceptions were tested on a range of scenarios with the result that animal welfare accreditation programmes do, on the whole, provide assurance to visitors about the welfare of animals they see while visiting an animal welfare accredited zoo (see Figure 1).

While this is an encouraging confirmation for the zoos participating in animal welfare accreditation programmes, the research found that zoo visitors are not actually aware of these programmes operating in zoos. Given these findings, and with animal welfare being a core tenet of the social licence to operate for any zoo, the principal recommendation of this research is for both zoos and accrediting organisations to significantly increase marketing and communication of the animal welfare accreditation programmes to their respective communities. ZAA have recently undertaken a social media campaign to lift awareness of animal welfare accreditation across Australia and New Zealand.

The full research report has been published in the open access *Journal of Zoo and Aquarium Research*, Vol. 8, No. 3 (2020).

Figure 1. Visitor perceptions of assurance from animal welfare accreditation N = 395



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1 https://www.zooaquarium.org.au/public/Animal-Welfare/ZAA-Accreditation/Public/Animal-Welfare/ZAA-Accreditation.aspx?hkey=0ef83e58-d110-407f-8609-7ff0031a7a56

Appointment to the National Animal Welfare Advisory Committee

The Minister of Agriculture has appointed Dr Grant McCullough to the National Animal Welfare Advisory Committee for a three-year term from 1 November. He replaces Julie Wagner and provides knowledge and experience of veterinary science.

Grant is the founder and owner of Veterinary Hospital Group – a group of 10 vet clinics across the Auckland area. He is the current President of the NZ Veterinary Association and is also an independent Director of Troy Laboratories – an Australian based veterinary pharmaceutical company.

Grant lives on a lifestyle block on the outskirts of Auckland and runs a 50 hectare beef farm north of Auckland.

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