

Welfare pulse



MARCH 2012 | ISSUE 10

**Ship movement as a stressor
of animals during live export**

**Ethics around
the use of modern technology**

Heat stress in dairy cattle

In this issue...



Welfare Pulse

Welfare Pulse is published three times a year by the Ministry of Agriculture and Forestry (MAF). It is of special relevance to those with an interest in domestic and international animal welfare developments.

The articles in this magazine do not necessarily reflect Government policy.

For enquiries about specific articles, refer to the contact listed at the end of each article.

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WELFARE TRAINING

for slaughter plant workers

The successful uptake of new science or technology has often been a barrier to implementation of new standards. Not so in the case of Palmerston North company Achieve Enterprises Limited and the Alliance Group, who have been working together to train staff at slaughter plants about standards within the code of welfare for commercial slaughter.

Copies of the Animal Welfare (Commercial Slaughter) Code of Welfare 2010 have been distributed to slaughter plants. Personnel from a number of Alliance Group's South Island plants have been on courses where they receive animal welfare training in the handling and management of animals - from arrival through to, and including, slaughter.

Courses have been held at Pukeuri near Oamaru and Lorneville, just outside of Invercargill. The two intensive days of workshop activity provided a background to the importance of animal welfare, including international trends and consumer perspectives. Explanation of requirements outlined in the code was a central component of the programme.

Highlights of the workshop were practical sessions where participants were asked to audit actual meat plant facilities and identify features, problems and opportunities for improvement.

The course was initially developed by Achieve Enterprises Limited (AEL) and has been presented to industry since 2004. After the retirement of one of the key presenters (Dr Per Madie), Dr Jim Edwards of World Veterinary Consultants Limited was invited to join Ross Davies to

Dr Jim Edwards assists Teremoana Ngu of the Alliance Lorneville plant with online assessment.



continue providing training.

"The new code requires slaughter plant personnel to be competent and appropriately trained" says Dr Edwards. "It also positions New Zealand's meat exports well because the animal welfare practices it promotes are well accepted by our export markets."

"We emphasis minimum standards and give participants a good insight into changing global attitudes towards animal welfare. They are all also given a copy of the code and full course notes to keep."

The Alliance Group is at the forefront of animal welfare training and since 2004 has trained more than 300 of its staff using the Achieve Enterprises training package.

Gary McLennan, Group Development Manager, Alliance Group says a major benefit of the training provided by Achieve Enterprises has been the development of recognised competencies in its people.

"The training satisfies the competency recommendations within the code and good animal welfare practise not only meets our legal obligations but ensures our customers receive the highest quality product".

"Alliance considers itself a market led organisation, one that holds the values and wishes of its customers in the highest regard."

Workshop participants are exposed to the science and technology that underpins animal welfare in the meat processing environment. Understanding anatomy and physiology have significant impact on the status of animal welfare in the industry - these dictate the behaviour of animals and explain species-specific behavioural characteristics that impact on design and operation of good handling facilities.

In terms of the actual slaughter process, knowledge of anatomy and physiology by operators is of major importance when ensuring humaneness. The workshop includes

the principles of ritual slaughter, primarily halal (Islamic) slaughter because of its importance to New Zealand meat exports.

Achieve Enterprises' programme is comprehensive with a focus on requirements and practises from live animal handling through to and including slaughter. Downstream meat quality benefits of good welfare practice are of secondary importance but add weight to the drive for improvement.

At the end of each workshop participants are required to undergo assessment that can be completed using one of two modes. The first is face to face or one on one examination of the individual's competency. The second, and more commonly used approach, is an online quiz and short answer assessment.

The online tool has been developed by Achieve Enterprises using the "Moodle" internet teaching platform. Assessments are usually carried out by utilising a bank of computers all linked to Achieve Enterprises' industrial training website (www.jumpstart.ac.nz) which randomly selects questions. Tutors are available to assist participants complete this "open book" assessment as required.

The New Zealand Qualifications Authority (NZQA) provides oversight of outcomes of the training in the form of Unit Standard registration. Learning outcomes and assessment activities are closely monitored and moderated by the authority through the New Zealand Industry Training Organisation.

"It's pleasing to find that participants quite readily achieve the 60 percent



Ross Davies presenting code minimum standards.

pass mark with the assessment tool, many scoring over 80 percent and 90 percent. For many, this is their first experience of external assessment and so gaining a pass is extremely empowering" says Ross Davies, Achieve Enterprises' Managing Director.

"This is especially so when it is understood that the assessments cover a wide range of material relating to animal welfare and meat processing."

Unit Standards Background

Unit Standard 20644 says candidates must be able to demonstrate an understanding of the Animal Welfare Act 1999 as it applies to the meat processing industry, and also demonstrate an understanding of good practice in animal welfare in relation to the meat processing industry.

Unit Standard 23354 is designed to assess candidate knowledge of livestock behaviour prior to slaughter in a meat processing plant. People credited with this Unit Standard are able to describe the behavioural traits of livestock in relation to species; describe livestock behaviour in relation to livestock yard design; and

describe livestock behaviour and animal welfare requirements during transportation.

Unit Standard 23353 considers competency in the principles of pre-slaughter stunning of animals in the meat processing industry. People credited with this Unit Standard are able to describe the principles of pre-slaughter stunning; the physiological factors affecting the selection of the stunning method; the methods and basic equipment design for pre-slaughter stunning; and the signs of an effective pre-slaughter stun.

Unit Standard 23352 is designed to assess knowledge of the slaughtering of animals in the meat processing industry. People credited with this unit standard are able to describe the principles of humane slaughter; the physiological factors affecting the selection of the slaughter method; and describe slaughter techniques.

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Appointments to NAEAC



The Minister for Primary Industries recently appointed Hon Robyn Kippenberger and Mr Ian Buchanan to the National Animal Ethics Advisory Committee (NAEAC). Both appointments are for a three-year period.

Robyn Kippenberger replaces Peter Mason who served on the committee for three years. She was nominated by the Royal New Zealand SPCA (RNZSPCA) and provides knowledge and experience of animal welfare advocacy.

As the RNZSPCA's

National Chief Executive, Robyn has grown the organisation from three staff and \$900,000 income to 18 staff and an income of almost \$3 million. She has also led initiatives that include "One of the Family", an empathy education programme in intermediate schools, the introduction of SPCA standards and accreditation for pork, chicken and eggs production, and gaining government funding for the Inspectorate.

Robyn received an international award in saving the lives of abandoned animals. She was one of five recipients of the 2010 Henry Bergh Leadership Award and the first outside the United States. The SPCA's initiative "Saving Lives" focuses on reducing euthanasia of unwanted animals with the by-line that "every life is precious" and Robyn was instrumental in establishing this.

Ian Buchanan replaces David Peart MNZM who had served on the committee for six years. He was nominated by Local Government New Zealand and provides a lay perspective alongside the professional and technical input of the other members.

Ian has a science background, with a post-graduate degree in biological science from Victoria University and a career largely dedicated to natural resource management and conservation. This consisted of a 20 year stint in freshwater fisheries and wildlife management and a parallel career in local government politics, culminating with being elected as chair of the Wellington Regional Council and a member of the National Council of Local Government New Zealand in 2004. Ian retired from local government in 2010 and now devotes his time to business interests, is manager of the Masterton Golf Club and a member of the New Zealand Conservation Authority.

CODES OF ETHICAL CONDUCT

– approvals, notifications and terminations since issue 9

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

Transfers of codes of ethical conduct approved: Nil

Code holder name changes: Nil

Amendments to codes of ethical conduct approved: Nil

Notifications to MAF of minor amendments to codes of ethical conduct: Nil

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

- Grace, Neville (to use Estendart Ltd's code)

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

- KODE Biotech Ltd

Approvals by the Director-General of MAF for the use of non-human hominids: Nil

Approvals by the Minister of Agriculture of research or testing in the national interest: Nil

Linda Carsons

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EARTHQUAKE impact on research

The Christchurch Animal Research Area (CARA) buildings suffered structural damage after the earthquakes of 2010/11 which eventually resulted in some areas becoming uninhabitable for researchers, and others only able to be accessed by essential personnel.

CARA has produced a poster that details the impacts the earthquakes have had on their facility and the animals housed within it. [View or download a copy of the poster.](#)

The National Animal Ethics Advisory Committee (NAEAC)
invites applications or nominations for the:

THREE Rs AWARD 2012

To reward and promote implementation of Three Rs
principles in research, testing and teaching

The Three Rs (replacement, reduction and refinement) are the cornerstone of the ethical use of animals in research, testing and teaching. This award celebrates achievements in the implementation of the Three Rs and promotes the concept within the scientific community and to the wider public. The award is co-ordinated by NAEAC and sponsored by the Royal New Zealand SPCA and is made to an individual, group or institution within New Zealand that shows great commitment to, or innovative implementation of, the Three Rs, or whose work will help to promote awareness of Three Rs principles.

The prize will consist of a certificate and a financial award of \$2,000, which will be presented at the NAEAC AEC workshop on Friday 16 November 2012. Receipt of the award will be publicised in selected media, although specific details of the work involved can be restricted if appropriate.

Applications or nominations (with knowledge of nominee) should be sent to:

NAEAC Secretariat
c/- Ministry of Agriculture and Forestry
P O Box 2526
Wellington 6140

There is no application form but you must provide:

- evidence of how the applicant or nominated individual, group or institution qualifies for the Award (maximum of three pages)
- curriculum vitae of the applicant(s) or nominee(s)
- the names and contact details of up to two potential referees
(who may, at the committee's discretion, be approached for comment)

Applications close on Friday 20 July, 2012.

Please direct enquiries to the NAEAC Secretariat (email naeac@maf.govt.nz)

Ethics around the use of MODERN TECHNOLOGY

As veterinary medicine develops and new procedures become available, the discussion on how far we are prepared to go to keep our companion animals alive must begin. Just because we can, does that mean we should? Technology is developing at a rapid rate and the ethical questions need to be asked so the answers have been thought through by the time this technology is more freely available.

In human medicine, life is sacrosanct and every available effort is made to maintain it. In veterinary medicine, euthanasia is a recognised treatment option and is carried out regularly. In human medicine the patient is able (usually) to give an informed consent, whereas with animals, a third party makes this decision. The animal doesn't seek out the vet or know what treatments are available or is able to choose what should happen. All decisions are made by an owner – who may have a variable level of attachment to the animal - including where the animal will live, what it will be fed, how much exercise it will get and whether it will live or die.

The animal/owner bond is a well known emotional state. The animal is considered part of the family; often thought of as a substitute child. There may be other emotional attachments if the animal belonged to someone who has died, and elderly people often reflect their own mortality in their ageing pet. This puts pressure on owners to do everything they can for their pets; to keep the animal going 'at all cost'. It may mean everything to the owner to extend the life of the animal no matter what. But where does the interests of the animal lie? Who looks after them? There are strict guidelines about treatment for humans who



are unable to speak for themselves - is something similar needed for companion animals?

Already, humans change animals to suit our expectations of them and to make them more compatible with our lives. This is done through genetic selection for a certain look or coat type etc, surgical neutering to make them fit into our households, or training animals to do what we want them to do. Are technological advances more of the same?

Medical procedures standard in human medicine are becoming available for companion animals. Kidney transplants, prosthetic limbs, hip replacements and cardiac valve replacements are becoming part of the treatment line up options for pets. Owners expect vets to offer the best treatments available. Does that include these options?

Beginning with kidney transplants, there are several important considerations involved in the procedure. Firstly, where does the

donor come from? The animal donating its kidney has no say in what is happening. There is no benefit to the donor's life by donating a kidney – if anything there is more cost to the donor with a healthy animal going through a surgery that holds no benefit for itself, or worse, being sacrificed to provide a kidney for another animal, born into different circumstances. In some facilities where kidney transplants are available, the recipient pet owners have to adopt the donor cat after the surgery. Would the donor cat have a better life where it may have no life otherwise? Is organ donation an exploitation of an animal? Does this open the door for organ farming where we grow animals until we need their organs?

Secondly, the recipient animal has no option in giving consent for the surgery. The kidney transplant commits the animal to a lifetime of anti-rejection drugs that may have a variety of side effects. Extending the

life of an elderly animal with renal failure may not be in the best interests of the animal. Is the extra time gained worth the cost to the animal?

Prosthetic limbs are another area of advancement in veterinary medicine. Again, this is a procedure performed without the animal's specific consent – consent is given by a third party who doesn't have to go through the surgery and the post op maintenance of the limb and its associated problems. Is the gain of mobility worth the ongoing discomfort of the stump? Would the animal be better off on three legs? Are we swapping a healed amputation site for a stump that requires careful management to stay pain free? The owner's life may have been made better by allowing the person to feel they have done everything they possibly could to help the animal, but is the animal's life any better?

Another technology still at the experimental stage is cloning. Already genetic material is being stored so that when cloning a cherished pet is possible and the original dies, there is a carbon copy to take its place. What if the copy is different to the original? Having the same genetic makeup does not guarantee an exact replica. The owner will be several years older than they were for the first pet and may have changed in their ideas and behaviours. This will mean the clone has a different environment to grow up in and will show a different outcome to the original. Will the clone then be rejected by the owner and what if the surrogate mother gives birth to more than one offspring? Will these animals be rejected and euthanased as surplus? Should we be cloning animals when there are

thousands of healthy but homeless animals' euthanased every year?

Veterinarians often help owners make difficult decisions about their animals. Each case is different with owners having different values, ideas and financial capability. The process of making the right choice for that owner can be influenced by other pressures of life that may have nothing directly to do with the animal involved. There is no doubt that most owners love their animals and want the best for them and as technology advances and the options for diagnosis and treatment increase, so does the pressure to treat 'at any cost'. The ability to prolong the animal's life is very appealing to both owners and veterinarians as the idea of immortality is very seductive. No-one wants to suffer the feeling of loss caused by the death of a pet and some will do everything they can to avoid it.

Humans find the idea of becoming disabled, sick or even growing old very unsettling. Animals grow old and deal with disability and disease without the same hang-ups humans exhibit. We have to be careful we don't put more of our human ideas and expectations onto animals and cause them unnecessary suffering in the process. Are we always changing animals to suit us rather than respecting their individuality – their "animalness"? Or are they just property to do with what we will, as long as we aren't cruel or abusive?

The procedures discussed here are those that are available now. The future has a way of happening rapidly and we need to be prepared to look at new technologies and be aware of those ethical questions about what is going on. Humans have a

responsibility to safeguard the welfare of animals and ensure their interests are taken into account. Just because we can prolong the lives of some animals, does that mean we should?

Karen Phillips, BVSc, MACVSc.
Deputy-Chair, National Animal Welfare Advisory Committee

Codes of Welfare – update on issue, consultation, development and review

Note: update as of 9 February 2012

Recommended to the Minister

- Goats
- Meat Chickens

In post-consultation process

- Layer Hens
- Llamas and Alpacas

Under development

- Equine
- Temporary Housing (including boarding establishments)

Under development

- Rodeo

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NAWAC MEMBERSHIP

and decision-making

Criticism of the composition of the National Animal Welfare Advisory Committee (NAWAC), and its “industry dominated” membership and decision-making is based on a misunderstanding of the processes that govern the Committee, says Chair John Hellström.

In part, there is a misunderstanding because these processes are not clearly documented for public scrutiny. However, the criticism also reflects a lack of appreciation of the requirements of the Animal Welfare Act 1999 under which NAWAC operates.

NAWAC was established under the Animal Welfare Act 1999 (the Act) to provide independent advice on animal welfare to the Minister responsible for the administration of the Act (currently the Minister for Primary Industries). NAWAC replaced the Animal Welfare Advisory Committee, which had operated in a similar but non-statutory role since 1989.

There are 11 members of NAWAC and all are appointed by the Minister, not by the Ministry of Agriculture and Forestry (MAF). Under the Act, nine of these members must be selected for their knowledge in, and experience of:

- veterinary science, agricultural science and animal science;
- the commercial use of animals;
- the care, breeding, and management of companion animals;
- ethical standards and conduct in respect of animals;
- animal welfare advocacy;
- the public interest;
- environmental and conservation management; and
- any other area the Minister considers relevant.

The other two members of the Committee, the independent chairs of NAWAC and the National Animal Ethics Advisory Committee

(NAEAC), generally have experience and qualifications within the above areas. MAF recommends Chairs to the Minister, and the Chairs then recommend members to the Minister for appointment. Cabinet approves all committee appointments.

When a new member is required because of the retirement by rotation or resignation of an existing member, the chair seeks suggestions from organisations that are likely to know of suitable people to approach. These organisations include the Royal Society of New Zealand, the New Zealand Veterinary Association, the Society of Animal Production, the Department of Conservation, Crown Research Institutes, universities, New Zealand Institute of Primary Industry Management, New Zealand Agricultural and Resource Economics Society, Te Puni Kokiri, the Ministry of Womens' Affairs, the Consumers' Institute and the RNZSPCA and Federated Farmers.

Although members may be recommended by an organisation, they serve in their own right and do not represent that organisation. Members serve three-year terms and a maximum of two terms.

NAWAC has been well served throughout its existence with high-calibre members committed to improving animal welfare. The qualifications of current members include three veterinary degrees, five PhDs and a range of other relevant degrees. Aside from their technical expertise, members represent a

very extensive range of experience, knowledge and passion about animal welfare and ethics.

It should not be a surprise that most of the people with the skills and knowledge set down in the Act have spent a large part of their lives working with animals, many in an agricultural setting. However, only four of the current committee are currently working in an area that could be described as closely aligned with farming interests.

It is worth noting that the current review of the Act will provide an opportunity to make the process for the nomination and appointment of people to NAWAC more independent and transparent by clearly setting and documenting the processes in the Act.

There are a number of ways that NAWAC reports its decision making. The minutes of all NAWAC meetings are publically available and the policies and guidelines the Committee operates under are all available on the website. The explanations behind the content of each code, how decisions are reached on code content, and how submissions from the public are considered, are set down in reports. These reports are produced for the Minister to explain the basis of the recommendations contained in each code and are required under section 74(2) of the Act which gives very clear guidance on their content.

The reports must include:

- the reasons for the committee's recommendations; and
- the nature of any significant

differences of opinion about the code, or any provisions in it that have been shown by the submissions; and

- the nature of any significant differences of opinion about the code, or any provisions in it that have occurred within the committee.

In order to increase the transparency of particularly contentious decisions, NAWAC has recently adopted multi criteria decision analysis as a formal tool to document these decisions. The results of these analyses will be included in the code reports for public scrutiny.

John Hellström
Chair, National Animal Welfare Advisory Committee (NAWAC)
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Welfare Pulse to become electronic

Welfare Pulse has always been available in both print and PDF format from the Ministry of Agriculture and Forestry's (MAF) website:

<http://www.maf.govt.nz/news-resources/publications>

Following a review of all MAF publications, it has been decided that from 2012 *Welfare Pulse* will only be available in electronic format. To continue receiving *Welfare Pulse* you must be subscribed to the electronic edition.

To receive *Welfare Pulse* electronically please sign up for alerts at www.biosecurity.govt.nz/lists/ and click on animal welfare and then tick "*Welfare Pulse* magazine".

A new look for *Welfare Pulse*

We have been producing *Welfare Pulse* since early 2009. Its purpose is to be a single publication that covers everything from research and advice to relevant new publications and projects both within New Zealand and internationally. *Welfare Pulse* serves a key role in sharing information amongst all groups involved in animal welfare and highlighting invaluable contributions made to the welfare and humane treatment of animals.

This year brings with it some changes to *Welfare Pulse* that will provide an opportunity to enhance the publication. This is the first issue in a solely electronic format.

The circulation of *Welfare Pulse* is approximately 2000. Without the constraints of a hard-copy publication we will no longer be restricted by page limitations enabling articles with more photos, illustrations and even video. We will also be able to include links to further information relating to an article.

At this stage we are looking to continue producing three to four issues a year but from the next issue you will see a new design (as mentioned in Issue 9) and articles that are shorter, punchier, timelier and easier to read electronically.

The electronic format provides the subscriber the option to print as many hard copies as desired for distribution throughout their lab or office, or to only print particular articles. *Welfare Pulse* will continue to be available on the MAF website, ensuring back issues are always readily available.

Welfare Pulse remains an important part of animal welfare in New Zealand and although changes are being made, we are committed to maintaining the high standards and quality of the publication.

General subscriptions

Please contact us by email at animawelfare@maf.govt.nz if you no longer wish to receive *Welfare Pulse* or would like to provide feedback about the magazine.

CHIP IT OR LOSE IT

– the 80/20 factor

An unsung hero of the February 2011 earthquake in Christchurch is the size of a grain of rice and costs less than anything else companion animal owners can do to ensure their pets' safety.

Animals carrying this tiny microchip information capsule discretely under the skin of their "scruff" were hugely advantaged when they were presented to or rescued by the SPCA and Christchurch Council Animal Control after fleeing in terror from their homes when the quakes hit.

The Canterbury SPCA handled 800 animals during the three months after the quake, the majority staying many days before being reunited with their families or rehomed in Canterbury and throughout New Zealand.

Collars with Council tags or identity disks are notoriously easily shed when an animal strays so afford scant insurance. In Christchurch, in the midst of the disaster, it quickly became obvious that animals that carried their identity details tucked safely under their skin had an enormous advantage in terms of being rapidly "found".

In some cases families were able to uplift their micro-chipped animal within the hour of it being scanned by the SPCA, Council or vets. In one instance an animal owner was contacted through database information before the rescuer had even left SPCA reception.

The statistics were unequivocal. Only 20 percent of all animals received were micro-chipped, but of those 80 percent were able to be returned to families. The 80 percent of un-chipped animals fared much worse, with less than 20 percent being returned and all others never re-

uniting with their own families.

In the midst of the chaos of hundreds of animals pouring in to the Canterbury SPCA, microchips were also used to ensure correct identification of each animal.

"Un-chipped" animals were "chipped" immediately and the numbers, photos and details recorded to ensure correct and permanent identification was established.

As Timaru SPCA and boarding kennels were being used to home overflow animals it was imperative that none were misplaced. Up to 200 animals were boarded with the SPCA for quake evacuated families while they struggled to establish accommodation.

Others also gave their time and services free of charge, including the New Zealand Companion Animal Register crew, who spent hundreds of hours helping identify animals and enter data from new chips inserted to found animals.

To ensure as many animals as possible were chipped for safety if they strayed in any future events, Christchurch Animates pet stores offered free micro-chipping to 2000 animals during the recovery phase after the earthquake. Funds donated to the SPCA were provided to Christchurch vets who, working at extremely reduced rates, achieved free micro-chipping of 10 000 animals. At the same time the Companion Animal Register donated over 12 000 free registrations to Christchurch pet owners.

The Royal New Zealand SPCA has since received grants totalling \$18 000 to fund micro-chipping for animals in the quake prone areas of Wellington,



Napier, Hastings and Gisborne. This will also enable SPCAs to publicise the benefits of microchips and encourage more pet owners to "chip" their pets.

Anyone who has lost a beloved animal will understand the time, effort, heartache and worry that this causes. The message is clear: chip your animal or risk losing it. The chips, simply inserted by a vet or technician from the SPCA or Council, can be read by a 'wand' passed over the animals' body. All information and contact details are registered and stored in either one or both national databases available in New Zealand

The Government National Dog Database was developed to hold information for every registered dog in the country. Access to the stored information is restricted to local councils.

The Companion Animal Database was established for all animals and is a 24 hour service, accessible to registrants. An animal can be listed as missing by it's owner and if a "chipped" animal is found, database staff will contact the listed owner by email or phone, enabling rapid return.

Robyn Kippenberger
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HEAT STRESS

in dairy cattle



Photo: AgResearch Ltd

High ambient temperatures, solar radiation and humidity, and low wind movement are environmental factors that can put strain on farm animals and lead to heat stress. Karin Schütz from AgResearch provides an update of current research that looks at heat stress in dairy cattle.

If the environment allows, most animals will alter their behaviour in order to cool down. They do this by seeking cooler microclimates for example, and by changing activity patterns and body postures. In addition to behavioural adaptations, energy demanding physiological responses as well as decreases in feed intake will occur to reduce heat production and maintain body temperature.

There is consistent evidence across farm species that hyperthermia is harmful to production. In New Zealand, Holstein-Friesian cows begin to produce less milk when temperature exceeds 21°C and humidity 75 percent over three days (a temperature humidity index of 68).

However, animals will change their behaviour in order to cope with the situation well before production is compromised. Cattle without access to cooling adopt behavioural strategies, such as changing grazing time of day, body postures and increased water consumption. Our research has shown that dairy cattle

are highly motivated to use shade in warm weather and consider shade a valuable resource that they are willing to compete for.

These changes in animal behaviour can provide an early insight into how animals are responding to environmental conditions, making them a useful tool for examining animal preferences for different cooling methods.

Shade use in dairy cattle increases with higher ambient air temperature and solar radiation and the provision of shade in late lactation improves daily milk production by approximately 0.5 kg/cow. Protection from solar radiation is an important design feature of shade and dairy cows, when given a choice, prefer at least 50 percent blockage. Cows will spend more time in shade if the level of protection is greater and shade use is directly related to solar radiation levels.

Welfare benefits of shade, such as preventing a rapid increase in respiration rate and body temperature, are greater when all cows can use the resource at the

same time. We found that shade use was more than twice as high when all cows could access the resource simultaneously and use increased with warmer weather. These results indicate that cattle will use shade to prevent an increase in internal body temperature, but this heat mitigation strategy is only effective if a sufficient area of shade is available. Research from feedlots in Australia suggests that cows should have access to at least four square metres of shade per cow. Our research team has investigated shade use on commercial dairy farms in the Waikato for two consecutive years to explore how much shade is needed per cow in order to provide optimal cooling.

We are also currently exploring the relationship between respiration rate and a panting score system. This system is a farmer-friendly tool to determine when animals are experiencing heat stress (by looking out for signs such as drooling, open-mouth panting and extension of the tongue) so action can be taken when needed.

Although it is clear that shade is beneficial and seems to be valuable to cattle, cooling with water is actually more efficient at reducing respiration rate and body temperature than shade alone. In New Zealand, the body temperature of dairy cattle often peaks around afternoon milking time, in part, because the cows often walk a considerable distance to the milking parlor.

The use of sprinklers at the milking parlor in the afternoon is an effective way to reduce heat load and approximately 40 percent of New Zealand dairy farms use sprinklers at the milking shed. However, there is evidence that some cows may find sprinklers aversive. Dairy cows preferred to use shade over sprinklers or no cooling in New Zealand; 62 percent of the cows preferred shade over sprinklers and

65 percent preferred shade over no cooling.

The Animal Behaviour & Welfare Team at AgResearch Ltd, Ruakura, has collaborated for many years with Dr. Cassandra Tucker at the University of California, Davis, to investigate the effects of climate on the welfare of dairy cattle using behavioural and physiological indicators.

Relatively little is known about voluntary use of water cooling by cows and this concept was explored in a study in California which examined how non-lactating dairy cows would use a specially designed “cow shower”. In the study, cows used these “showers” for, on average, three hours per day at temperatures greater than 20°C. Shower use increased in warm weather. These

results indicate that cooling with water may be heavily used by cows in specific situations. An understanding of preferences for specific design features of water cooling, such as droplet size and impact, and the role of previous experience and control over delivery may help to improve water cooling of cattle.

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RANGE OF SERVICES

at welfare centre



The United States Department of Agriculture Animal and Plant Health Inspection Service (APHIS) Center for Animal Welfare was established to be the go-to place for animal welfare science, training, education and policy strategy.

The Center resides within the Animal Care programme of APHIS. Animal Care is charged with enforcement of the Animal Welfare Act and the Horse Protection Act. Together with the Humane Slaughter Act, this comprises the complete set of federal animal welfare legislation in the United States.

Formed in 2009 in Kansas City, Missouri, the Center is staffed with specialists that cover many of the species regulated under the federal Animal Welfare Act and have expertise in the areas of marine mammals, big cats, elephants, primates and dogs, in addition to biophysics.

In collaboration with other animal welfare entities, the Center is creating a diverse network of partners and experts to serve as a national resource in the growing field of animal welfare. While technical training is provided to regulatory officials, the Center

has no direct regulatory function and can work in a non regulatory capacity providing a variety of services including leadership and facilitation of dialogue on animal welfare issues.

While initially focusing on domestic activities, the long term goal for the Center is to become an active player in the international field of animal welfare.

Since its formation, several major initiatives have been implemented. To enhance the efficiency and consistency of the inspection and enforcement process, the Center hosted a joint training of Animal Care and Investigative Enforcement Services employees. This has been followed up with a series of topic specific webinars for Animal Care employees to enhance their skills and expertise.

The Center is also working with professional commercial dog breeder organisations and has initiated several efforts to get the industry to address welfare needs without relying on government standards and regulations. A related initiative was to bring together Local, State, and Tribal leaders to discuss with Federal partners ways to collaborate to achieve greater compliance with applicable laws to enhance the welfare of animals in the commercial kennel environment. These efforts remain ongoing.

In April 2011, the Center hosted a scientific seminar on Tuberculosis in elephants that drew nearly 150 participants, including international participants from Canada and India. A number of captive elephants have recently been found to have tested positive for

tuberculosis in the United States and this disease, if left untreated, can result in the death of the animal. Tuberculosis is a zoonotic disease and so can also affect other animals and humans, and the occurrence of this disease in elephants has public safety implications. The seminar was designed to bring experts on tuberculosis in elephants and humans with an emphasis on diagnostics, epidemiology, public health, and treatment together in one place to discuss the current science, gaps and challenges.

So what's ahead? Training for APHIS employees and development of long term strategies to address welfare issues will continue to be a primary focus. Outreach to licensees to help them fully understand what is required and expected of them under the Animal Welfare Act and HPA will continue to be a priority.



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What is the International Society for APPLIED ETHOLOGY?



Appplied ethology is a field of study where the focus is on animals in human care, or within the influence of human actions. Instead of focusing on behaviour as a population-level phenomenon, most applied ethologists are interested in functions on an individual or group level. Research within applied ethology serves to increase our knowledge of how animals behave and on the effect and nature of human-animal-interactions. In addition, researchers work to identify the most important needs of these animals, and to provide information on the welfare status of animals in different situations, using behaviour as a key measure.

The International Society for Applied Ethology, or ISAE, has its origins in the United Kingdom and was created in Edinburgh in 1966 as the

Society for Veterinary Ethology. In 1991 the Society's name was changed to ISAE and it has since become increasingly international with 575 current members from all over the world, including scientists, university students and other academic experts who share a common interest in applied animal behaviour (or applied ethology). The official scientific journal of the ISAE is *Applied Animal Behaviour Science*.

The main activity of the ISAE is to organise annual scientific congresses for its members and other interested parties. Congresses have been organised for 45 years and are held in different locations annually, alternating between European and non-European countries. The congresses usually attract between 200 and 400 attendees, mainly scientists and students within the area, but each

year members of different interest groups (such as politicians, decision makers, representatives of animal-related industries and animal welfare lobbyists) also visit.

Topics covered reflect important and current research within applied ethology, and usually focus on the behaviour and welfare of production animals, companion animals, laboratory animals, zoo animals and wild animals. Even though the society does not focus on animal welfare per se, a large proportion of the presented research is typically on topics related to animal welfare.

Regional activity is very important for the ISAE and currently the Society has 11 regions covering all continents. Regular meetings and seminars are held between regions. Although membership is largely concentrated in Europe and North America, there

are very active members in other regions such as Japan, Australasia and South America. ISAE aims for world-wide coverage, as applied ethology is a topic of importance within all types of animal management and husbandry, providing tools to increase productivity, promote human-animal interactions and evaluate and increase animal welfare.

As ISAE covers a great proportion of all scientists within applied ethology in the world, the society provides an impressive body of knowledge and expertise. This is reflected in the fact that ISAE members are frequently asked to sit as experts on different bodies and organisations including the Council of Europe, the Association for the Study of Animal Behaviour Certification scheme for Animal Behaviourists, and the Board of Trustees of the Association for the Assessment and Accreditation of Laboratory Animal Care International (AALAC).

The Society welcomes members with an academic background (including students) and an interest in

applied ethology. The programme at congresses is of high scientific quality, while also providing an inspiring, friendly and open atmosphere. More information about ISAE, forthcoming meetings and how to become a member can be found at www.applied-ethology.org.



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A UNIFIED VOICE

for Animal Agriculture in the USA

“Divide and conquer” is an age-old tactic used to tear apart an army, relationship, business or entire industry. As the animal rights movement began to take form in the United States of America (USA) in the early 1980s, farm and ranch organisations became concerned about the impact this movement would have on agriculture. Leaders representing all sectors of animal agriculture joined together in a new, unified response to these threats and formed the Animal Agriculture Alliance’s predecessor organisation, the Animal Industry Foundation, in 1987.

The Alliance was founded specifically to monitor animal rights campaigns and ensure agriculture had a unified voice representing the true industry to the public. Over the past 25 years the animal rights movement has dramatically expanded in the USA,



but the Alliance remains a unified voice for farmers, ranchers and food-related industries.

Our mission is to communicate the important role of animal agriculture to our nation’s economy, productivity, vitality, and security. We help consumers understand that animal well-being is central to producing safe, high-quality, affordable food and other products essential to our daily lives.

our ability to maintain a healthy agricultural industry and thus, our national security.

The Alliance provides a forum for stakeholders to work together to understand the issues of most concern to the public, monitor the campaigns of the activist community and then communicate factual information to help the public better understand modern food production. We serve as the “go to” organisation for media on-farm animal welfare issues, and we provide stakeholders with resources and tools to help them communicate about hot button topics including animal welfare, environmental stewardship, and biotechnology.

Over the years we have co-ordinated numerous coalition efforts in response to anti-modern agricultural campaigns such as the animal rights-driven *Meatless Mondays* campaign and an upcoming Food Day campaign sponsored by numerous activist groups (not related to the World Food Day campaign by the United Nations). The Alliance works to provide a positive voice for agriculture correcting misinformation.

It is recognised that one of the biggest challenges facing farmers and ranchers today in the USA – as well as across the world – is feeding a growing population. In the USA, most youth are at least three generations removed from the farm; they lack a strong understanding of where food comes from and how it is produced. The potential impact by animal rights advocates and anti-modern farming activists on future generations could be devastating to



We have also organised many educational efforts. Our Adopt-a-Teacher programme provides agricultural resources to teachers in urban areas. With the rise of social media, we have worked to share resources through our Facebook and Twitter pages and have developed a network of passionate “advocates”. Our College Aggies Online scholarship competition, now in its third year, empowers agricultural students to use new media to share their agricultural stories. Social media represents a new frontier for the agriculture community to connect with consumers far removed from the farm.

Finally, one of our unique roles is serving as the USA national co-ordinator for agricultural stakeholder input to the development of international farm animal

welfare guidelines by the World Organisation for Animal Health (OIE). With a coalition of more than 150 individuals representing more than 40 organisations, the Alliance develops a consensus opinion representing American agriculture to submit to both the US Department of Agriculture and the OIE. We have served in this role since 2004.

The Alliance is a non-profit organisation and today remains a broad-based coalition of individual farmers, ranchers, producer organisations, suppliers, packer-processors, private industry scientists, veterinarians, and retailers. For more information, visit the Alliance website at www.AnimalAgAlliance.org or contact us at info@animalagalliance.org. American agriculture has a wonderful story to share, and we at the Alliance are proud to help ensure its future.



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Appointments to NAWAC

The Minister of Agriculture recently appointed Dr Penny Fisher to the National Animal Welfare Advisory Committee (NAWAC) and reappointed Dr Karen Phillips for a second term. Both appointments are for a three-year period.

Dr Fisher replaces Dr Phil Cowan who had served on the committee for 5½ years. She was nominated by Landcare Research NZ Ltd and provides knowledge and experience of environmental and conservation management. Dr Fisher currently leads research in the area of pest animal management, with projects relating to control of possums, rodents, mustelids and rabbits. Her main areas of expertise are in toxicology and non-target risk assessment, with a current focus on assessing and improving animal welfare aspects of applying pest control methods.

Nominated by the New Zealand Veterinary Association, Dr Phillips is a farm and companion animal veterinarian in Central Hawke's Bay and a member of the Australian and New Zealand College of Veterinary Scientists in both pharmacology and animal welfare. She is also an animal welfare adviser to the Hawke's Bay Emergency Management Group.



Dr Penny Fisher



Dr Karen Phillips



Ship movement as a stressor of animals during LIVE EXPORT

Have you ever been on a ship and felt seasick? If you have, the chances are that you felt pretty uncomfortable and wondered how long the feeling would last.

You move from your comfortable seat in the lounge to stand on the deck and stare at the horizon, eking out the last few hours of the journey whilst eagerly anticipating the return to dry land. Now imagine that you are a sheep feeling the same way, except that you have no idea how long you will be kept in this moving shed, tossing and turning as it makes its way across the ocean. There's nothing you can do about it. In addition, you've also been subjected to mustering, yarding, loading, trucking and lairage prior to boarding the ship to begin your long

journey by sea.

If you can place yourself in this situation you may understand why the stress of being in a moving vessel may just be the final straw that makes some sheep give up on live export shipments. Most manage to make their way to the feed and water troughs and tough out the journey. For some however, it is just too much, they can't face the added stress of fighting their way through to the troughs and instead lie motionless, head crooked back, waiting for whatever fate is coming to them. The scientists call it 'learned helplessness'. Some will never reach their destination as inappetence, or 'shy feeding', is one of the main factors affecting mortality of sheep on ships.

Is this scenario based on reality, or is it just an anthropomorphic assessment? To find out about one of the suspected major stressors for animals being exported by sea, the movement of the ships, scientists at the Centre for Animal Welfare and Ethics at the University of Queensland are simulating the movement of the ship on land to examine in detail the responses of the sheep.

Anecdotal evidence suggests that the movement of ships causes significant stress. Stockpeople on the ships tell you that mortality rates increase and sheep suffer to a larger extent during high seas. Although we know that species such as humans, dogs and cats are relatively susceptible to motion sickness, other species may also be susceptible. Ruminant livestock cannot vomit from their mouths, which is probably because of the large size of their rumen, but they can experience 'internal vomiting' which is the shunting of abomasal and duodenal contents towards the rumen. We therefore have no real reason to expect that they do not experience motion sickness in the same way as other mammals.

There are three principal types of movement that sheep are subjected to on ships: roll (side to side), pitch (end to end) and heave (up and down). In addition, large waves may slam into the side of the vessel, moving the ship



sideways. At the Centre for Animal Welfare and Ethics, to distinguish the effects of roll, pitch and heave, we utilise a flight simulator platform with a cage above in which we can hold two sheep. The platform has two motors underneath that can tilt the platform in any direction and back in a programmable manner. This allows us to simulate typical roll and pitch movements or combinations of the two. Heave is achieved by mounting the apparatus on a pallet which is moved up and down by an electric forklift. The platform cage is fitted with cameras and covered with a cloth to avoid the sheep having to look at a moving room.

The sheep are first adapted to handling and being held in the platform cage prior to being subjected to movement on the platform. When subjected to platform movement, the behaviour and heart rate responses of the sheep are monitored over several 30 minute periods. After each treatment the sheep are turned out to a paddock to see if the treatment has had a long term effect on their behaviour. Two people attend the procedures throughout in case the sheep become adversely affected by the treatment.

What can be done about the stress induced by the movement of the ship? The captain of the ship has some control over roll, as he/she is able to activate stabilisers below the water



line. This is useful because the angle of roll is much greater than pitch. Anatomically sheep probably have most resilience to roll, as the foot is inflexible in a sideways movement. In humans it is heave that is known to be the most likely to induce sea sickness. The only control over heave that the captain has is to seek calm water if he knows that the heave is sufficient to severely stress the animals. Heave will be uniform throughout the ship, but roll and pitch are known to be lowest in the centre of the ship. With this in mind, partially filled vessels may lessen the stress imposed on sheep by containing them towards the centre of the ship

After testing different movements alone and in combination, and in conjunction with the other stressors experienced by sheep during live

export, the scientists at the Centre for Animal Welfare and Ethics will have an accurate picture of how stressful ship movement is to the sheep. This will add to their recent work on ammonia on ships and contribute to a better understanding of the extent of the stress that sheep experience during live export.

This research is supported by the Centre for Animal Welfare and Ethics, the Humane Society International, the Humane Slaughter Association, as well as Consejo Nacional de Ciencia y Tecnología, Mexico, for a studentship for Eduardo Santurtun.

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PEOPLE WHO LOVE ANIMALS

(Too Much)



“Yet I should kill thee with much cherishing.” – Romeo and Juliet Act 2, scene 2.

It seems that every day there is a new case of animal hoarding appearing in the American media. Concerned humane society or state workers are shown removing animals that are matted, ill and emaciated - and quite often dead animal carcasses and neglected children as well. It is not that hoarding has become much more common, although the economic downturn puts further pressure on those already in well over their heads. Hoarding simply became something that people got better at “seeing”.

Television series such as Animal Planet’s “Confessions: Animal Hoarding” made it absolutely clear just what might lie behind the doors of a house that smells a bit odd and keeps its curtains closed. And the public came to understand that hoarding is symptomatic of mental illness and a person in need—not just evidence of laziness and moral failings. As a result, more people are recognising hoarding, and reporting it. More neighbours, family members and veterinarians are beginning to wonder about the household that holds a hard-to-specify number of animals under less-than-wonderful conditions of care.

Part of this shift in the public mind is the understanding that it doesn’t matter how *much* you love animals, as much as how *well* you love them. Sometimes this responsibility means

not being impulsive, it means keeping up with preventative health care, training, grooming and hygiene. Sure, there may be some tears on the sofa and some hairs on the counter, but the responsible person ensures that the dog has all his or her shots and anti-parasitics, food and water, a clean place to sleep, and the exercise and attention needed for a good life. And that the human inhabitants of the household get the same.

Watching shows where people are surrounded by thousands of sick animals or dead animals buried under piles of trash should not lead us to think “well, I’m okay. I’m not that bad!” What hoarders show in extreme, many of us participate in, in more subtle ways. Data from the United States (US) shows some unsettling trends over the course of the last five to 10 years, beginning before the recent economic downturn. While the number of pets in the US has grown, pet obesity has increased, as has diabetes, external and internal parasite infestation and dental disorders. These are all becoming more common and visits to the veterinarian have declined.

None of this is because people love their pets any less. It is often out of a kind of love that pets are over fed, left in hot cars rather than at home, not vaccinated or chipped out

of misplaced fear that it might be harmed, and showered with toys and treats and not taken to the scary vet.

The danger is that even as we become more aware of the extremes of hoarding, our idea of “normal” pet care is sliding in that direction. The antidote to this is to keep a firm grasp on the need to balance giving animals what they want, with giving them what they need, and realising that with animals, as with people, love is not a matter of how strongly you feel, but how well you treat the object of your affection – not only in impulsive moments but over the entire course of their lives.

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Across our desks

A selection of interesting items from newsletters, journals and websites which have crossed our desks.

Guidance on the severity classification of scientific procedures involving fish: report of a Working group appointed by the Norwegian Consensus-Platform for the Replacement, Reduction and Refinement of animal experiments (Norecopa)

The severity classification of procedures using animals is an important tool but existing mechanisms may not be relevant for fish. This article discusses a website designed to assist with severity classification for procedures using fish.

Hawkins, P. et al. (2011). *Laboratory Animals* 45, 219-224

Bathing behaviour in parrots

Spraying water on captive parrots was shown to stimulate them to perform bathing behaviour, which is important to maintain feather condition. Other parrots that observed this bathing behaviour, but which were not sprayed, also showed mock bathing behaviour, suggesting that this behaviour may have an important social function.

Murphy, S et al. (2011). *Applied Animal Behaviour Science* 132, 200-210

Review of meat chicken welfare

This review examines the international approach to the meat chicken industry and shows that countries that have a small number of integrated, self-regulated companies, such as the United States and Australia, may be less able to respond to future welfare requirements in the meat chicken industry than those countries in which the industry is more diverse, with greater competition and more government regulation, such as in Europe. However, similar welfare issues affect intensively-housed meat birds worldwide.

Robins, A. and Phillips, C.J.C. *World's Poultry Science Journal* 67 (02), 351-369

Vaccination of Atlantic Salmon

Commercially produced salmon are vaccinated in Norway in order to avoid severe infections and reduce the use of antibiotics, but it was thought that the vaccine itself may cause peritonitis. It was shown that vaccinated fish show less interest in food and less interest in performing social behaviours than control fish, especially on the day of the vaccination. These behavioural changes suggest that the vaccine causes the fish pain.

Björge, M.H. et al. (In press). *Applied Animal Behaviour Science*

Wallowing in pigs

This article outlines the benefits of providing a wallow for pigs which include providing the pig with a substrate which it can use to remove parasites, to cool efficiently and to protect the skin from sunlight. The wallow may also play an important social role. The author suggests that the provision of a wallow should be considered by pig producers who are interested in their animal's welfare.

Bracke, M.B.M. (In press). *Applied Animal Behaviour Science*

Housing conditions for meat rabbits

Rabbits live in large groups in the wild, which is thought to provide protection from predators. In captivity they are best housed in groups of 4-5 to a cage, which decreases negative effects of housing them in larger groups sizes such as aggression and disease from contamination. Sticks of soft wood fixed to the cage wall on which the rabbits can gnaw were shown to reduce bodily injury caused by aggression.

Szendro, Z. and Zotte, A. (2011). *Livestock Science* 137, 296-303

Enrichment for laboratory mice

Provision of enrichment for mice can be beneficial for their welfare, however the placement of the enrichment within the cage can effect the amount of competition and aggression that the mice engage in to obtain the enrichment. Dispersing enrichment throughout the cage, rather than clustering it in one area, was recommended.

Akre, A.K. et al (2011). *Applied Animal Behaviour Science* 131, 145-152

Shelters for Hamsters

Laboratory hamsters make nests out of bedding material and sleep nocturnally. It was found that if provided with shelter, hamsters will use it to nest in, and generally preferred to nest in shelter in the form of a medium length pipe that was closed at one end.

Veillette, M et al. (2011). *Animal Welfare* 20, 601-611

Nitrous oxide for castrated piglets

Nitrous oxide (NO), or laughing gas, was tested to see if it could be used to reduce the pain of castration in piglets. It was found that it sedated the piglets, but they woke up when castration was performed, so it was not suitable to use to reduce pain during the procedure. However they did display less huddling behaviour and more tail-wagging than control piglets, indicating a reduction in pain post-surgery.

Rault, J.L. and Lay, D.C. (2011). *Journal of Animal Science* 89, 3318-3325

The pain of dehorning and disbudding

This review discusses the different types of methods that are used for disbudding or dehorning cattle and the evidence available that may indicate the amount of pain and distress that each technique causes. The authors also discuss chronic pain that may occur following dehorning.

Stafford, K.J. and Mellor, D.J. (2011). *Applied Animal Behaviour Science* 135, 226-231

Alternatives to castration in farm animals

Castration is a painful procedure for farm animals and alternatives that can avoid the performance of this procedure can benefit the animals welfare. Alternatives including sending pigs for slaughter at a lower body weight to avoid “boar taint” and the use of non-surgical procedures such as immuno-castration are discussed.

Rault, J. et al., (2011). *Applied Animal Behaviour Science* 135, 214-225

Inflammatory bowel disease in dogs

Inflammatory bowel disease is a common, but poorly understood disease affecting dogs. This study examined the veterinary records of dogs with the disease and found that five breeds of dogs, the German Shepherd, Weimaraner, Rottweiler, Border Collie and Boxer, were significantly more likely to develop the disease than other dogs. The progression of the disease in Border Collies may be different to that of the other four breeds.

Kathrani, A. et al (2011). *Veterinary Record* 169, 635-638

Health of dogs from puppy farms

This study examined the responses of dogs who had been previously used for breeding in a puppy farm, compared to dogs that hadn't been used in this way and found that the former puppy farm breeding animals had a higher rate of health problems. Some behavioural changes in dogs were also identified as a result of living in the stressful conditions often encountered in puppy farms, but many of the problems can be overcome with rehabilitation techniques.

McMillan, F.D. (2011). *Applied Animal Behaviour Science* 135, 86-94

Your feedback

We look forward to hearing your views on *Welfare Pulse* and welcome your comment on what you would like to see more of, less of, or something new that we have yet to cover. Please send your feedback to us by emailing animalwelfare@maf.govt.nz

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