



Welfare Pulse

Animal welfare in New Zealand and around the world

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Blood-sucking bugs as secret research assistants

Blood samples are an essential prerequisite to answering various questions in biological research. However, taking a blood sample from wild birds usually requires trapping them and drawing blood with a needle. This causes stress for the individual under investigation and during the sensitive period of reproduction it can lead to nest abandonment.

A solution for this problem was found in the development of a “bug-egg”. A blood-sucking Triatomine bug is placed into a hollow dummy egg, in the shape and colour of the bird’s natural eggs.

The “bug-egg” consists of two halves, held together by a screw-in thread and a nut, or alternatively mini-magnets, to leave more space for the bug in small eggs. The bug can put its proboscis through the gap between the halves or the holes around the circumference of the egg to suck blood, but it cannot escape.

The “bug-egg” is added to the nest and the bird continues incubating its own eggs. The bite of a blood-sucking insect usually remains unnoticed. This is possible thanks to their proboscis, with a diameter of 0.02 mm, being considerably thinner than a needle and the ‘injection’ of an analgesic.



“Bug-eggs” for common terns (*Sterna hirundo*, egg size 42x31mm). Photo by Christina Bauch.

After 10 to 30 minutes the bug has usually finished its blood meal and the “bug-egg” is taken out of the nest. The blood can be drawn from the bug’s abdomen with a syringe. A heparin-like substance, secreted by the bug, prevents clotting.

The method has been successfully validated for various parameters in the blood such as hormones, haematological parameters and DNA. The blood of the host remains essentially undigested in the bug for several hours and the amount of the bug’s secreted fluids is negligible.

Triatomines develop through five larvae stages. All of them suck

continued...



Blood-sucking bugs *continued...*

blood, in amounts according to their increasing size (approx. 0.1 ml for larvae stage 2 and 0.3 ml for larvae stage 3). The larval stage can be selected depending on the quantity of blood required and considering the size of the bird to ensure its welfare.

Using this method, blood samples have been successfully collected in a long-term study in a breeding colony of common terns and the smaller common swifts. The method allows repeated blood sampling of the same individuals over years, avoiding trap shyness and minimizing disturbance during reproduction. ■

Christina Bauch

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Research articles on this topic

Becker et al. (2006) A non-invasive technique to bleed incubating birds without trapping: a blood-sucking bug in a hollow egg. *Journal of Ornithology* 147: 115-118.

Bauch et al. (2013) "Bug-eggs" for common swifts and other small birds: minimally-invasive and stress-free blood sampling during incubation. *Journal of Ornithology*

Securing futures for retired race horses



Fairy King Prawn and Unique Jewellery were born and raised in New Zealand. Fairy King Prawn became a multiple champion overseas and they have returned to NZ as companions for their retirement.

New Zealand is internationally recognised as a producer of sound, durable and competitive horses.

There are approximately 120 000 horses in New Zealand. Thoroughbred and harness racing horses (from foals to adults) are estimated at 42 000 and there are approximately 6000 horses registered with Equestrian Sports. The majority of the remainder are kept for sports and leisure. There are also a small numbers of feral horses in New Zealand with the herd in the Kaimanawa region managed to approximately 800.

Racing contributes \$1.6 billion to the New Zealand economy (0.9 percent of the gross domestic product). A total of 52 732 people are involved in the racing industry when you include casual staff, part-time workers and volunteers – a total of 1.2 percent of the population.

Underpinning all of this is the health and wellbeing of these horses.

The welfare priority for New Zealand Thoroughbred Racing (NZTR), the thoroughbred racing industry's governing body, is securing working futures for retired racehorses. While all thoroughbreds registered with NZTR are

	Racing	Wine	Seafood
Contribution to gross domestic product	\$1.64 billion	\$1.5 billion	\$1.7 billion
Direct employment – full time employees	8 877	5 940	10 520
Total employment – full time employees	17 000	16 500	26 600

New Zealand's racing industry is comparable in economic impact to the wine and seafood industries.

continued...

Securing futures *continued...*

microchipped, freeze-branded and DNA tested, once they leave the industry they are no longer within the industry's jurisdiction and this presents a challenge.

There are 4000 thoroughbred horses born every year. On their retirement from racing many racehorses continue their careers on stud farms in the thoroughbred breeding industry and some will be retrained and rehomed as equestrian, leisure or companion animals.

Currently there are several private, non-profit organisations providing rehabilitation and rehoming services for owner's unable to keep horses, principally in Auckland, Rotorua and Canterbury. Due to high demand some of these have waiting lists. Horses in most need are taken first. As well as providing a place for these horses to recover, these organisations also find more permanent homes.

Thoroughbreds are among the most agile, intelligent and trainable of all breeds, and can easily adapt to a second career.

NZTR is in the process of submitting to the Department of Internal Affairs a rule change which would place requirements on the owner of a horse leaving the racing industry to inform NZTR when a horse is sold or gifted to another party, including the full identity and contact details of the new owner.

This is just one part of a growing understanding in the thoroughbred industry that providing aftercare is not only the right thing to do but also part of a complete horse care commitment.

The *Rules of Racing*, held by NZTR, contain a wide range of clauses covering horse welfare. These are reviewed regularly and the views of anyone interested in horse welfare are welcomed.

NZTR's Business Plan for 2013-15 (www.nzracing.co.nz) sets out its immediate priorities for horse welfare including appointing an Industry Support Group to oversee re-educating and rehoming programmes for thoroughbred retirees, and implementing

improved mechanisms for managing data on horse injuries and fatalities.

In 2010 NZTR, Harness Racing NZ and the RNZSPCA put in place a Memorandum of Understanding setting out how collectively and individually the signatories will act in reporting and handling instances of thoroughbred and standardbred horse neglect, and promoting early intervention to alleviate horse suffering as quickly and efficiently as possible.

NZTR has been involved in redrafting the 1993 Welfare Code for Equines with the NZ Equine Health Association. The National Animal Welfare Advisory Committee (NAWAC) has just released a draft of the Animal Welfare (Equines) Code of Welfare 2013 for public consultation. The code sets out minimum standards and best practice guidelines for all horses, ponies, donkeys and crossbreeds.

NZTR also supports and is closely involved, through the NZ

Equine Health Association, in monitoring new welfare research findings and promoting further funding and support for welfare studies through the NZ Equine Research Foundation and the Massey University Partnership for Excellence. NZTR was also involved in negotiating an emergency disease management programme with MPI through the Biosecurity Law Reform Bill, which passed its second reading in 2011.

Those involved in racing are generally passionate about their horses and recognise it is in the interests of both their horse and the thoroughbred racing industry, and all its participants, that it maintains sound horse welfare programmes and protocols and that these are policed as effectively as possible. ■

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Fairy King Prawn and Unique Jewellery.

Animal Welfare Inspectors in New Zealand

MPI and the RNZSPCA staff are tasked with the challenging role of ensuring compliance with the Animal Welfare Act 1999 and the codes of welfare throughout the country. This is a huge job and there are 360 dedicated staff around the country from both organisations who make a real difference in the lives of animals day in, day out. Whether they are MPI Animal Welfare Inspectors or veterinarians at slaughter plants, SPCA Inspectors or Auxiliary Officers, they all play an important part in ensuring animal welfare is adhered to right across New Zealand.

Making a difference for animal welfare

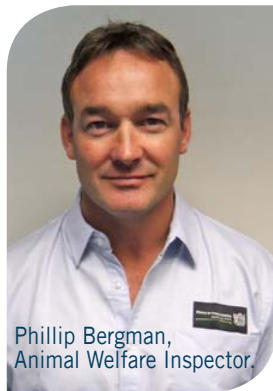
If you've been looking for a very rewarding career, then become an Animal Welfare Inspector for the Ministry for Primary Industries.

At MPI there are many opportunities to do a job that really makes a difference. Animal Welfare Inspectors are tasked with helping to care for and protect the animal population that we live with.

New Zealand's international food export reputation is world-class and this is intrinsically linked to our outstanding animal welfare standards. It is critical that these standards are adhered to for both the sake of our international trade and the welfare of the animals.

Nationally, Inspectors continually check, inspect, educate and generally help out within many farming communities. We work with farmers who are trying their best to produce a top quality product within the busy and competitive environments of commercial animal farming. At the rural-urban divide, MPI may respond to animal welfare complaints on lifestyle blocks which involve pets as well as livestock. We work with the SPCA to ensure the appropriate organisation is responding to cases where there is a mixture of production and companion animals.

New Zealand is generally a very caring place where animals are treated with respect and dignity, but unfortunately things don't always go to plan and sometimes help is required to fix a



Phillip Bergman,
Animal Welfare Inspector.

problem. When an animal welfare issue arises, it is always taken very seriously by MPI. Complaints received through MPI's animal welfare line 0800 008 333, are prioritised according to the nature of the complaint and urgency and forwarded through to an inspector for action.

At all times, our first priority is for the welfare of the animals.

When we attend complaints, our immediate action depends on and addresses any health and welfare concerns of the animals in question. We make sure we alleviate any pain or suffering of any animal found that may require our assistance.

The assistance provided can vary greatly and can be as simple as offering education and support and sound advice to anyone requiring it, right through to the opposing unpleasant end of the offending scale. This is where veterinarians and farm consultants are called in to assist us in potentially very serious animal welfare cases. In serious cases, legally binding instructions or orders are given to the person in charge of the animals and these must be immediately followed to prevent legal action. Sometimes this may mean the seizure of animals from farms to ensure the animals are not in any further danger of suffering pain or distress.

Although Inspectors are trained to deal with the most serious of scenarios, the good news is that this sort of action doesn't occur very often and serious welfare issues are uncommon. However, it's a great comfort to that know New Zealand has Inspectors looking out for animals and doing our bit to make sure as a nation, we get it right.

Phillip Bergman
Animal Welfare Inspector (Nelson/Marlborough)
Ministry for Primary Industries

Protecting New Zealand's reputation one day at time

As a veterinarian at an export meat processing premises in New Zealand, my primary role and responsibilities are related to providing official assurances for animal products exported to other countries. To provide this service, we are warranted as Animal Products Officers under the Animal Products Act 1999.

MPI Veterinarians at meat processing premises are also warranted as Animal Welfare Inspectors under the Animal Welfare Act 1999. This second hat that we wear on a daily basis gives our trading partners confidence that animals are being transported and slaughtered humanely.

The Verification vet is responsible for assessing the company's humane slaughter programme and ensuring it meets the requirements of the Animal Welfare (Commercial Slaughter) Code of Welfare 2010.

The implementation of this programme is something that slaughter premises take very seriously and breaches of the code are few and far between.

The other aspect of the role involves the welfare of animals that arrive for slaughter.



Julie McDade, VMD, MPhil.

continued...

Animal Welfare Inspectors continued...

MPI Veterinarians assess compliance with the Animal Welfare (Transport within New Zealand) Code of Welfare 2011 with regard to selecting appropriate animals for transport to slaughter. Considerations include: have they had adequate food and water? Do they have any obvious signs of disease or neglect? Were they fit enough to withstand the journey? Overall, have they experienced acceptable animal husbandry?

While the vast majority of animals selected and transported to slaughter are treated humanely, unfortunately, there are exceptions. In these cases the veterinarians must assess the degree of pain and suffering that an animal has endured. The types of issues that we see include poor body condition, disease processes such as mastitis or cancer eye, untreated facial eczema, ingrown horns and various degrees of lameness.

Regardless of the type of injury or disease present, these animals will be considered welfare cases if there has been a breach of the Animal Welfare Act. Each case is investigated which includes a clinical exam, taking photographic evidence, obtaining proof of ownership, a postmortem examination and interviews with witnesses. This information is essential should the case be referred for further investigation and potentially prosecution.

For the majority of cases, an educational approach is the recommended course of action and the owner or person-in-charge of the animal will receive a phone call or a letter. Only the most serious cases are referred for further action.

The ultimate goal is ensuring the welfare of animals in New Zealand and educating persons-in-charge about their duties and responsibilities to animals in their care. Every day veterinarians at meat export premises in New Zealand are doing their bit to improve and protect the lives of animals. At the end of the day it's about 'everyone taking responsibility for the welfare of animals'.

Julie McDade, VMD, MPhil

Veterinary Technical Supervisor and Animal Welfare Coordinator (Waikato/Bay of Plenty)

Ministry for Primary Industries

The rewarding role of an SPCA Inspector

The RNZSPCA in New Zealand currently has a team of 88 appointed Animal Welfare Inspectors that are distributed across 47 branches and member societies from Invercargill in the south, to Kaitia in the north. While some Inspectors are paid, a significant proportion carry out their duty on a voluntary basis, often in addition to a regular day job.

Like our counterparts at the Ministry for Primary Industries, SPCA Inspectors are responsible for responding to complaints of animal cruelty and neglect in the community, and for enforcing the Animal Welfare Act 1999 – the law that defines both the responsibilities of owning an animal and conduct towards animals generally in New Zealand.

In 2011, SPCA inspectors dealt with a total of 13 089 complaints. While most of the main SPCA centres see a majority of companion animal related cases in urban New Zealand, there are also many farming-related complaints attended each year.

The majority of cases that keep SPCA inspectors constantly busy are due to neglect. They generally consist of untreated injuries and illness, inadequate shelter and insufficient food and water, as well as animal owners getting too heavy handed with their pets. Unfortunately, we continue to see animals regularly deserted despite alternatives to abandonment being widely publicised in the media. However, dotted in amongst these cases we also see and deal with some abhorrent acts of deliberate cruelty to animals.

SPCA Inspectors often attend multiple cases of cruelty or neglect on any one day and are constantly making decisions about the future of the animals they encounter with the animals' best



SPCA Inspector Ben Lakomy. Photo supplied by the *Dominion Post*.

interests always at the forefront of their mind. In some cases it will be obvious that removing an animal from a situation is necessary and this can be done effectively under New Zealand law. In many cases however, the apparent neglect of an animal is largely unintentional or may be caused by a lack of knowledge on the owner's behalf.

In cases like these, and in other situations where seizure or prosecution are not appropriate, we will educate and support an animal owner or family. This often includes providing a food parcel to help get an underweight animal back to health, a kennel so that the family dog can keep out of the cold, or providing information on the needs of animals and

how to care for them. Cases like these are resource intensive and often require many follow-up visits to ensure full compliance with, and understanding of the Animal Welfare Act. In some cases, an official warning may be issued to animal owners found offending against the Act.

Since the maximum penalties for offending against the Act were increased in 2010, we are seeing more offenders face harsher penalties. It is positive to see offenders are starting to receive custodial-based sentences for offences.

While the role of an SPCA inspector is sometimes arduous, being able to change the lives of so many animals for the better and seeing people held accountable for offending against the Act, when necessary, keeps us going – and keep going we will. ■

Ben Lakomy

Senior Animal Welfare Inspector

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Appointments to NAWAC

The Minister for Primary Industries recently appointed Mrs Ingrid Collins MNZM and Mr Alan Sharr to the National Animal Welfare Advisory Committee. He also reappointed Dr John Hellström ONZM as Chairperson and Dr Katie Bicknell, Dr Barbara Nicholas and Dr David Scobie as members of the Committee for a second term.

Ingrid Collins was nominated by Te Puni Kokiri and replaced Hilton Collier who had served on the committee for six years. She has more than 39 years experience in Māori Land Incorporations management and Māori land-based business. In addition to a successful farm operation on the East Coast of New Zealand, Ingrid's expertise includes health management and corporate governance. Current directorships include Chair of Whangara B5 Incorporation and Whangara Farms Partnership. In addition she is a trustee of Chelsea Private Hospital in Gisborne and part owner/Chief Executive of Three Rivers Medical. Ingrid is also a member of AgResearch's Māori Advisory Committee and a trustee of "C" Company Returned Services and patron of the Gisborne Malaysian Forces.



Katie Bicknell has a PhD in agricultural economics from the University of California. A Fulbright alumni and former president of the New Zealand Agricultural and Resource Economics Society, she is currently a senior lecturer in economics at Lincoln University where she teaches economic policy, resource economics and statistics. Katie also has an active research programme focused on cost-benefit analysis, demand analysis, resource management and public policy.



Barbara Nicholas has a PhD in bioethics, and has worked both as an academic and in central and regional government policy. Much of her work has been concerned with the interactions of science with social knowledge and values in the areas of health, biotechnology and the environment. She currently works as a facilitator for Environment Canterbury implementing the Canterbury Water Management Strategy.



David Scobie was nominated by the New Zealand Society of Animal Production. He is a scientist at AgResearch, Lincoln, who has previously researched the relationship between the physiology of wool growth and the physics of wool fibres, and more lately the genetic and environmental influences on the quality of lambskins and deer hides. One outcome from the skin research has been the positive effect of reducing skin wrinkle in Merinos on almost all aspects of their production.

The small team that Dr Scobie leads, with investment from Beef + Lamb New Zealand and Sheep Improvement Limited, has shown that breeders can develop a sheep with a genetically short tail, and no wool on the head, legs, belly or, most importantly, the breech. These traits are designed to replace docking, reduce the need for dagging and crutching, reduce flystrike, improve shearing and wool handling, and, perhaps most importantly, enhance sheep welfare.



John Hellström, first appointed to NAWAC in 2009 and then appointed as Chairman in November of that year, has a degree in veterinary science and a PhD in veterinary epidemiology. His extensive background in biosecurity at operational, trade-related and strategic levels both in New Zealand and overseas, has guided the development of New

Zealand's biosecurity system over the past decade. This work was recognized with the award of an ONZM in 2011. John has also been involved in animal welfare policy for many years including, when he was New Zealand's Chief Veterinary Officer, establishing the Animal Welfare Advisory Committee (the precursor of NAWAC) in 1990. While working in the veterinary pharmaceutical industry he was deeply involved in international efforts to replace animal testing of vaccines with in vitro tests. ■



Alan Sharr replaced Jenny Prattley who had also served on the committee for six years. He was appointed to provide knowledge and experience of animal welfare advocacy. Alan is a Chartered Accountant in public practice and in this capacity was Secretary/Treasurer of the Canterbury SPCA for two years. Alan has been a member of the Society for many years and has

had cats, a dog and budgies. He is also a member of Forest & Bird as well as other related animal and wildlife welfare bodies.

The motivation of sheep for food

Researchers in the field of animal welfare have become adept at using behavioural, physiological and immune function changes to assess an animal's wellbeing. However, one area which is lacking information is in understanding how an animal perceives specific situations. Behavioural measures assessing motivation and preference have been used to gain a better understanding of this. In principle, motivation and preference testing allows some insight into what experiences and resources an animal values, rather than what researchers think it might value.

An animal can indicate which objects or events it is highly motivated to obtain or avoid. This approach to assessing welfare assumes that an animal will work harder to achieve circumstances that meet its needs or wants, or to avoid those that cause stress, fear or pain. This type of testing is based on economic theory and an animal is asked to 'work' for access to a resource or experience (e.g. push a lever to get food or water or a dust bath). The 'cost' of this access is then increased (e.g. more lever presses are needed to get the food) and the changes in motivation produced are assumed to be a measure of the importance of the resource to the animal. The objective of this project was to gain a better understanding of the factors that influence motivation in sheep and if this in turn could reflect an animal's welfare state.

Merino wethers were trained to access a feeder containing a very small, but tasty (approximately 4g lucerne-based) food reward. To increase the 'cost' of the food the sheep had to walk further to obtain it. The sheep were able to learn this task quite quickly and would spend about 12 hours of a 23-hour period walking to access the food. Two even managed to clock up over 13km of walking during the 23 hour test period. Interestingly, this task was also taught a few times to university students rewarded with rolling different foods down a pipe into a (clean) food tub. The students walked a lot further for chocolate than for raw brussel sprouts!

The project investigated how energy balance, different food energy densities, and brain reward systems are involved in altering a sheep's motivation for food.

So, what did we find out? Interestingly, none of the sheep stopped working for food when they reached the point where energy consumed equalled energy expended (zero energy balance). This means they continued to walk while they were in a state of energy deficit. However, the distance at which they did the most work and the distance at the point of zero energy balance, were between 29 and 41m across all treatments and experiments. This suggests that feeding motivation begins to decline near the point of zero energy balance.

We also found that the sheep exhibited higher levels of motivation toward a low energy compared to a high energy food at short distances. And administering an opioid receptor antagonist, naltrexone hydrochloride, was effective at reducing food rewards earned indicating that the opioid reward system may influence the motivation of sheep to work for food in a behavioural demand test. This suggests that the sheep were willing to work harder for access to the low energy food, possibly, because more of this would be needed to meet the levels necessary for metabolic and nutrient requirements. However, this trend appears to be dependent on the effort required as the lack of treatment differences at longer distances indicates that working harder for low energy compared to high energy food was only worth the effort when walking short distances.

These findings provide insight into motivation in sheep which will hopefully increase our

understanding of the role of motivation and its relationship to animal welfare. So, in true scientific style I think we may have ended up with more questions than we started with. However, we do have various hypotheses and a variety of possible directions for further research that may be able to shed light on the relationship between motivation and welfare state, given that we now have a better understanding of the factors that affect motivation for food.

This PhD project was jointly funded by the CSIRO, Australia and the University of New England, NSW, Australia. ■

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A merino sheep walking away from the feeder having consumed his reward. Photo courtesy of the CSIRO.

National Animal Ethics Advisory Committee Workshop

Our relationship with selected animal species has changed, and will continue to change quickly, and, in terms of animal welfare, all species are moving in one direction only – towards more protection.

This was the view expounded by the Hon Pete Hodgson, sometime veterinarian and politician and current Chair of the New Zealand Board of the Australian and New Zealand Council for the Care of Animals in Research and Teaching, in the first keynote address at NAEAC's Animal Ethics Committee Workshop. In laying down a challenge to participants, he posited that society would continue to allow the use of animals in society in the foreseeable future, but only if researchers avoid what he called “the big error” – something equivalent to the “unfortunate experiment” at National Women's Hospital in the 1980s, and “stay modest, avoiding arrogance”. Permission, he said, needed to be continuously earned, only possible alongside continual improvement and greater transparency.

This was a great introduction to the fifth of NAEAC's biennial workshops. The feedback from these events consistently demonstrates the value in getting members from different

Hon Pete Hodgson (left) responds to a question from the audience.



“...we should ignore all such distinctions except sentence...”

committees together. Whether it's from the presentations, in the break-out sessions or simply during discussions at lunch and tea breaks, the sharing of information is invaluable, and is one of the most effective ways in which NAEAC fulfils one of its most important functions – the provision of advice to animal ethics committees to help them make good decisions.

The 2012 workshop was no exception. The presentations, from appropriate anaesthesia and analgesia, through the permit requirements for research on taonga (items, including native animals, prized or treasured by Māori) and the use and sharing of standard operating procedures to the use of animals in pharmaceutical testing, illustrate the range of topics animal ethics committee members are required to deal with in ensuring the welfare of animals under our regulatory system.

The format of the workshop, including a number of different breakout sessions, also allows for discussion around areas of difficulty, exemplified in this workshop by sessions on dealing with and learning from events that result in negative impacts on animals, and on issues in study design.

Royal New Zealand SPCA and NAEAC member, the Hon Robyn Kippenberger, focused on the important role of lay people on animal ethics committees. Robyn spoke from her own experience as an animal ethics committee member, particularly noting that:

- while lay participants need to understand the issues, they are not expected to have any special expertise related to laboratory animal use;
- asking for clarification can enable not only oneself but also other committee members to enter more fully into the discussion.

Participants also particularly enjoy some wider ethical discussion (“good to step back and consider some of the bigger issues”;



Workshop meeting attendees.

“excellent blend of review and extension of ideas”), Pete Hodgson's presentation as an example. Dave Morgan, NAEAC deputy chair, challenged participants with the question, “Are all animals equal?” In pointing out the different contexts we use to ascribe values to animals, he concluded that while, as individuals, we may value animals differently for a variety of reasons (cultural, religious, aesthetics, ecology, economics), as animal ethics committee members, we should ignore all such distinctions except sentence. “It is the only attribute that is dependent solely on the animal, and is the only attribute from the list that matters to the animal”.

Amongst the feedback, the following exemplifies what NAEAC aims for in providing these workshops:

“I had a wonderful time, met some great people and it has helped me with my understanding of animal ethics committees, and how and why they are run”. ■

Virginia Williams
NAEAC Chair
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Photography by Michael Roberts

Appointments to NAEAC

In late 2012, the then Minister for Primary Industries Hon David Carter, appointed Ms Terry Burrell and Mr Bruce Warburton to the National Animal Ethics Advisory Committee. He also reappointed Dr Virginia Williams as Chairperson (and thus an ex officio member of the National Animal Welfare Advisory Committee) and Associate Professor Peter Larsen as a member of the Committee for a second term.



A veterinarian and an animal welfare consultant, **Virginia Williams** was the New Zealand Veterinary Association's Animal Welfare Co-ordinator. She is a member of the Animal Welfare Chapter of the Australia and New Zealand College of Veterinary Scientists, and holds a Diploma in Professional Ethics from the

University of Auckland. Prior to joining NAEAC, Virginia had more than 10 years' experience on animal ethics committees and was an independent reviewer of them and their codes of ethical conduct for the use of animals in research, testing and teaching.



Terry Burrell was nominated by the Ministry of Education and appointed to provide knowledge and experience of education issues including the use of animals in schools. Terry teaches at Onslow College in Wellington and is also active in Biology Educators Association of NZ. In her spare time she is an avid tramper and also assists a local conservation group

with pest control around the East Harbour Mainland Island behind her cottage in the Eastbourne hills. Terry replaces Allison Dodds who served on the committee for six years.

Bruce Warburton was nominated by Landcare Research NZ Ltd and appointed to provide knowledge and experience of environmental and conservation management. Bruce has been involved with vertebrate pest research for 30 years and has a particular interest in animal welfare and ethics related to managing wildlife. He was a member of the Animal Welfare Advisory Committee and its successor the National Animal Welfare Advisory Committee for nine years and was its Deputy Chairperson for two years. In addition he was New Zealand's representative on an International Organization for Standardization committee that developed international standards for testing traps. Currently he is an associate of the Massey University Animal Welfare Science and Bioethics Centre. Bruce replaces Dave Morgan who served on the committee for five years.



Dr Peter Larsen is an Associate Professor in the Department of Surgery and Anaesthesia at the University of Otago, Wellington. He is a cardiovascular physiologist, with a main research focus on cardiac rhythm disturbances and sudden cardiac death. He is involved in teaching within the University of Otago medicine degree, and in postgraduate medical technology programmes. Dr Larsen is currently the chair of the Animal Ethics Committee at the University of Otago, Wellington. ■

Codes of welfare – update on consultation, development and review since issue 12

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

- Layer Hens

Recommended to the Minister

- Llamas and Alpacas

In post-consultation process

- Rodeos
- Equines

Under development

- Dairy Housing
- Temporary Housing of Companion Animals

Under review

- Circuses
- Zoos

A complete list of the codes of welfare can be found on our website: www.mpi.govt.nz

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Special interests in animal welfare

The Special Interest Branches of the New Zealand Veterinary Association are increasing their focus on animal welfare concerns relevant to their area of expertise.

Animal welfare has been a major focus for the New Zealand Veterinary Association (NZVA) for many years. Formalised in 2009 with the ratification of the Association's Animal Welfare Strategy (see *Welfare Pulse 04*, March 2010), it aims to ensure that "member veterinarians, using a science-based and ethically principled approach to the humane treatment of animals, are respected and recognised for their leadership and educative role in animal welfare". With the overall strategy now being implemented, the next step has been to encourage the NZVA's Special Interest Branches to develop their own strategies, focused on animal welfare issues pertinent to their particular areas of work.

In a profession that traditionally covers a wide range of activities, the branches provide a forum where veterinarians can concentrate on particular areas of interest. Most of the branches are focused on particular species – these include the Camelid Branch, the Companion Animal Society, the Deer Branch, the New Zealand Equine Veterinary Association, the Pig Veterinary Society, the Society of Dairy Cattle Veterinarians, the Society of Sheep and Beef Cattle Veterinarians and the Wildlife Society. Others cover types of work or particular interests – the Club Practitioners Branch, the Epidemiology and Animal Health Management Branch, the Food Safety, Animal Welfare and Biosecurity Branch, the Holistic Veterinary Society, the Industry Branch, Retired Veterinarians and the Veterinary Business Group.

To develop their own animal welfare strategies, the branches will be identifying issues where there is the potential for animal welfare compromise and developing a strategy that will result in an improvement in the welfare of animals in those particular circumstances. These may relate to how animals are kept, or perhaps to specific husbandry or breeding practices.

As an example, the Sheep and Beef Cattle Branch has chosen to focus on issues of shade and shelter, as well as painful husbandry procedures and practices. Implementation activities carried out to date have included working with Beef & Lamb New Zealand, MPI and Federated Farmers, which has initially resulted in the publication of guidance material for vets. This will assist vets to advise their clients on coping with adverse spring weather during lambing. The next step is to create farmer-facing material, with information to reduce lamb losses by improved use of shelter.

The Animal Welfare (Sheep and Beef Cattle) Code of Welfare 2010 requires the use of pain relief when hot-branding stock. While branding is mainly restricted to stud breeders, the Sheep and Beef Cattle Branch responded by producing a set of best practice guidelines on the less-painful freeze-branding of cattle that will ensure satisfactory results.

Education of clients about the benefits of improving animal welfare is the primary aim of the branches' animal welfare strategies, an aim that fits comfortably with the role assigned to veterinarians as educators within MPI's plan for improving animal welfare compliance in New Zealand. ■

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Codes of ethical conduct – approvals, notifications and terminations since *issue 12*

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:

- Agrivet Services Ltd
- South Pacific Sera Ltd
- University of Auckland
- University of Canterbury
- University of Otago
- Victoria University of Wellington
- Waikato Institute of Technology

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

- Airway Ltd (to use University of Auckland's code) (renewal – arrangement expired)
- Auckland University of Technology (to use University of Auckland's code) (renewal – arrangement expired)
- Christchurch Polytechnic Institute of Technology (to use Lincoln University's code)

- CRV Ltd (to use AgResearch Ltd's code) (name change)
- Institute of Environmental Science and Research Ltd (to use University of Otago's code)
- Karori Sanctuary Trust (to use Victoria University's code) (renewal – arrangement expired)
- Life Technologies New Zealand Ltd (to use University of Auckland's code) (renewal – arrangement expired)
- LWT Animal Nutrition Ltd (to use Estendart Ltd's code)
- Malaghan Institute of Medical Research (to use Victoria University's code) (renewal – arrangement expired)
- Mesynthes Ltd (to use University of Otago's code)
- Oamaru Veterinary Centre (to use AgResearch Ltd's code) (name change)
- Parnell Corporate Services Pty Ltd (to use AgResearch Ltd's code) (name change)
- Trinity Bioactives Ltd (to use University of Otago's code) (renewal – arrangement expired)
- Unitec Institute of Technology (to use University of Auckland's code) (renewal – arrangement expired)

- Vet Nurse Plus (to use University of Auckland's code) (renewal – arrangement expired)

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

- AgriScience Consulting
- Androgenix Ltd
- AsureQuality Ltd
- Christchurch Polytechnic Institute of Technology (code expired)
- Gribbles Veterinary
- Institute of Environmental Science and Research Ltd
- Kotare Bioethics Ltd
- Wakefield Gastroenterology Research Trust

Codes of ethical conduct suspended at request of code holder

- Valley Animal Research Centre

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People in animal welfare

The MPI Animal Welfare Team is pleased to announce the appointment of Marie Guigou to the role of Technical Coordinator.

Marie will be helping the team by providing administrative and scientific support and is taking on the role of secretary for the National Animal Welfare Advisory Committee. She graduated in

2011 with a degree in physiology and animal science from Massey University, where she cultivated an interest in animal welfare. ■

Minor amendments to codes of ethical conduct

Code holders may make minor amendments to their code of ethical conduct. Code holders are reminded that if they have made any minor amendments during 2012, they are required by law to notify MPI in writing of the changes as soon as practicable and by 31 March 2013 at the latest.

The Animal Welfare Act 1999 defines a minor amendment as one 'that would not materially affect the purposes of the code'. ■

Best practice management for humane and effective vertebrate pest control

“Humane vertebrate pest control” has been defined as the development and selection of feasible control programmes and techniques that avoid or minimise pain, suffering and distress to target and non-target animals in vertebrate pest control programmes. Different control strategies and techniques have significantly different welfare consequences and impacts, although they achieve the same outcome.

Vertebrate pest management in New Zealand is guided by legislative requirements and, in many cases, by various best practice documents such as standard operating procedures and codes of practice. These

mainly focus on ensuring compliance with legislation (e.g. relating to use of toxins), operator health and safety, and efficient use of control methods. From a welfare perspective, their main function should be to ensure informed choice and then effective implementation of a control strategy to minimise welfare impacts on target and non-target species.

A recent project, funded by the Ministry for Primary Industries, reviewed best practice documentation for humane and effective vertebrate pest control. This work was to inform the National Animal Welfare Advisory Committee and the Ministry for Primary Industries on guidelines for the use of traps or devices and hunting or killing of wild animals and animals in a wild state.

Best practice information was sought from a range of agencies, organisations, and pest control companies and contractors for all vertebrate pests controlled by the Department of Conservation, the Animal Health Board and regional councils and covering all the control methods used. Hunting and fishing were included only when used primarily as control methods. Selected organisations in Australia and the UK were also contacted.

We found there is some documentation about best practice use of control methods for most common vertebrate pests in New Zealand but, in relation to animal welfare, this is often limited to legal or commercial requirements and for traps, to an indication of whether or not they have passed the NAWAC trap-testing guidelines.

This information provides the basis for a systematic coverage of animal welfare considerations in vertebrate pest control in New Zealand. The New South Wales Department of Primary Industries (Australia) Manual on Humane Pest Animal Control provides a good framework for the production of guidelines, codes of practice and standard operating procedures.

Key priorities to improve current best practice management include the need to develop a publicly accessible document clearly laying out the principles underlying animal welfare in pest management. These include the need to consider both the choice of method and the way it is applied, adequate definition of desired outcomes, and subsequent monitoring against desired outcomes. There is also a pressing need to provide more information in relation to best practice coverage, in particular, on many bird, reptile, amphibian, and fish pest species.

One issue of concern from a welfare perspective is the current lack of restrictions on the introduction of new traps and devices (except those involving toxins) for vertebrate pest control (New Zealand can currently only restrict or prohibit traps and devices after they have been introduced). This could be addressed by restricting their sale until a recognised welfare evaluation of any new traps and devices has been performed. ■

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The common brushtail possum (*Trichosurus vulpecula*) is a major agricultural and conservation pest in New Zealand.

Across our desks

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

Ring castration of calves

Calves aged 4–6 weeks of age were castrated by rubber rings using one of four different techniques to assess the amount of pain that each technique caused. It was found that the use of a single rubber ring, followed by the removal of the dead scrotal tissue with a knife after 9 days caused the least amount of pain and the fastest rate of wound healing.

Becker, J. et al. (2012). *The Veterinary Journal* 194, 380-385

Aerial perches for free range hens

The provision of aerial perches for layer hens in a commercial free range hen house caused hens to be less fearful of humans when approached and show less resistance when handled. Aggressive behaviour was also reduced by the addition of the perches, as was the proportion of birds performing feather pecking. Birds with access to perches were also heavier and had a better body condition score and the authors suggest that aerial perches, as required in European Union legislation, allow birds to lead less stressful lives.

Donaldson, C.J. and O'Connell, N.E. (2012). *Applied Animal Behaviour Science* 142, 51-60

Cattle behaviour and meat quality

Cattle arriving at abattoirs have been exposed to a number of stressors which can cause physiological changes that produce excess lactate in the meat, adversely affecting meat quality and resulting in low quality 'dark cutter' meat. This study used qualitative behavioural analysis to examine the behaviour of the cattle on the way to the abattoir and noted that those cattle that showed 'nervous' or 'anxious' behaviour had higher blood lactate levels and were more likely to result in 'dark cutter' meat.

Stockman, C.A. et al. (2012). *Applied Animal Behaviour Science* 142, 125-133

Feather pecking in dark brooders

Very young chicks require artificial heating to keep them warm and farmers often provide 24 hour lighting in the first 7 days so that the chicks can find food and water. This study showed that birds raised as 'dark brooders', in which the heating element is placed in a darkened area, allows the chicks to rest simultaneously and reduces disturbance. As a result, birds in 'dark brooding' flocks tend to be heavier than control birds, feather pecking is less severe and fewer birds have missing feathers.

Gilani, A.M. et al. (2012). *Applied Animal Behaviour Science* 142, 42-50

Zebra fish health and husbandry

The latest issue of the ILAR Journal is devoted to zebra fish health and husbandry. Zebra fish are increasingly used in research and this issue contains articles on nutrition, housing, breeding, larval rearing, diseases, anaesthesia and euthanasia and considerations for ethics committees.

ILAR Journal, Volume 53(2) (2012)

Perception of cat coat and personality

Cat coat colour and perceived cat personality was examined, with respondents being asked to match 10 behavioural traits with pictures of different coloured cats. The results showed that orange and bi-coloured cats were seen as 'friendly' whereas tri-coloured and white cats were seen as more 'aloof'. This may be due to representations of cats in the popular media and perceptions of gender-related behavioural differences in cats and may have a bearing on which cats are relinquished to shelters.

Delgado, M.M. et al. (2012). *Anthrozoos* 25 (4), 427-440 ■

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@mpi.govt.nz

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Welfare Pulse

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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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