



Welfare Pulse

Animal welfare in New Zealand and around the world

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Breeding: a forgotten element of animal welfare

By David Fraser

During a recent visit to New Zealand I visited David Scobie's amazing sheep, and they reminded me of a forgotten element of animal welfare.

As residents of New Zealand and Australia know only too well, flystrike is a major animal welfare problem that results in suffering of millions of animals every year. But the traditional methods of preventing flystrike – tail-docking and mulesing – are themselves controversial because they are painful procedures normally done without pain management. Is there a better approach?

With this question in mind, David Scobie, a sheep breeder working in AgResearch, went on a hunt for sheep whose genetics would make them resistant to flystrike without invasive procedures.

He found individual sheep with naturally short tails in many different breeds, and he showed that short-tailed parents tend to produce short-tailed lambs. He also found sheep that had wool-free backsides and bellies. By combining the different genotypes over ten years, he came up with "easy care" sheep that are resistant to flystrike, don't require tail-docking or mulesing, and are easier to shear.

Genetics is a forgotten element of animal welfare. No matter how well we handle and house animals, and no matter how well we prevent infectious diseases, some serious problems of animal welfare come straight from the genes. "Belgian Blue" beef cattle have been bred for heavily muscled bodies, but many of them have to be delivered by Caesarian section because the calf is too large for the dam's pelvis. Many laying hens have been so highly bred for egg production that they develop osteoporosis when too much bone calcium is diverted into egg

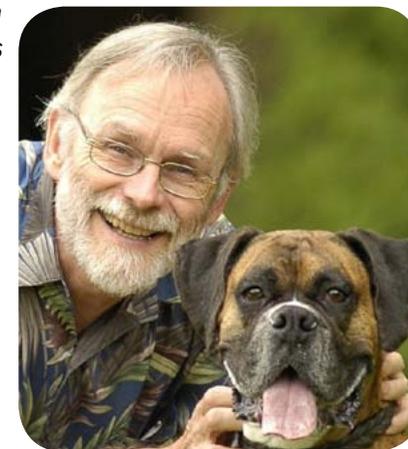
shell. Many modern dairy cattle have been bred for such high milk yield that they are prone to metabolic disorders and a short life span.

As David Scobie has shown, the genes that could solve such problems are often present (but neglected) in existing breeds. What is needed is for breeders to give animal welfare more importance in their selection of breeding animals.

Perhaps the greatest challenge will be to apply this thinking to our companion animals. We need our dog breeders – and the kennel clubs and show judges who influence them – to produce German shepherds that are resistant to hip dysplasia, boxers and pugs that can breathe normally, Bernese mountain dogs that are less susceptible to cancer, rough collies without collie eye anomaly, and on and on. If we care about animal welfare, we also need to care about animal breeding.

David Fraser is Professor in the Animal Welfare Program at the University of British Columbia in Vancouver. A version of this article was also published in AnimalSense Magazine.

For further articles on animal welfare and breeding please see previous issues of **Welfare Pulse** magazine. Issue 7 *Overcoming difficult births in Belgian Blue Cattle* and Issue 12 *Flat-faced cats – what are we breeding?*



David Fraser and friend



Animal welfare matters

The Minister for Primary Industries, Hon Nathan Guy, recently released the New Zealand Animal Welfare Strategy and announced the introduction of the Animal Welfare Amendment Bill. The strategy sets the direction for animal welfare in New Zealand, and the Bill is an important step toward that future.

Animal Welfare Matters: The New Zealand Animal Welfare Strategy

The strategy sets out a high level framework for how we treat animals. It provides a formal foundation for New Zealand's animal welfare legislation and policy. The strategy says that it matters how animals are treated, and that we have responsibilities toward animals. It also says that using animals is acceptable as long as it is humane.

The strategy lists four main routes to improved animal welfare:

- better planning to prevent animal welfare problems;
- better animal husbandry, science and technology;
- clear expectation and sanction, with help for people to comply; and
- measuring animal welfare performance.

Further information on the strategy can be found on the Ministry for Primary Industries' [website](#).

The passage into law

Minister Guy introduced the Animal Welfare Amendment Bill into Parliament on 8 May 2013. Following the first reading, the Bill will be referred to a select committee, which will call for further public submissions. The Bill must then undergo second and third readings before being passed into law.

The Animal Welfare Amendment Bill

The Animal Welfare Amendment Bill makes a number of improvements to the way that the Animal Welfare Act 1999 operates.

The changes in the Bill came from a comprehensive review of the Animal Welfare Act 1999 which found that while the fundamental principles are sound, the time is right to update and improve how the Act operates. The proposals were consulted with the public last year, and several changes have been made in the Bill in light of the feedback received during consultation.

The Bill will allow the government to create enforceable regulations that set out how farm and domestic animals should be treated. It also gives wider powers to deal with people who breach welfare laws, and makes other changes to make the Act clearer and more transparent.

The new regulations will be able to prescribe standards and requirements for the care of and conduct towards animals, and prohibit specified things or activities. The regulations will support codes of welfare, which cover a wide variety of animals, as well as transport and commercial slaughter. Regulations will also be able to sit by themselves if no related code of welfare is in place.

Bill introduced to Parliament
 First reading
 Select committee process
 Second reading
 Committee of the whole house
 Third reading
 Governor General passes the Bill into law



Once they are in place, the regulations will be backed by a range of enforcement tools, including instant fines.

Other parts of the Bill also create new regulation-making powers that will be able to set requirements for the live export of animals, and surgical and painful procedures performed on animals. The Bill also includes direct protections for New Zealand's wild animals, animals being exported to other countries, and those being used in research.

Further information on the Bill is available on the Ministry's [website](#).

Codes of ethical conduct – approvals, notifications and terminations since *issue 13*

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.

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

- New Zealand National Fielddays Society Inc (to use AgResearch Ltd's code)
- Pharmfirst Ltd (to use AgResearch Ltd's code) (name change)
- Techion Group Ltd (to use AgResearch Ltd's code)

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

- Pfizer Pty Ltd

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Tails

Across the animal kingdom, tails have evolved such diverse functions as locomotion and balance, signal behaviour, defence, sexual selection, to provide shade or to spread faeces to mark territories. The tail of many sheep has, with domestication, changed markedly with some breeds now having long and/or fat tails. Unlike other farm animals, considerable effort is spent attending to the tail region of sheep, shortening or docking the tail and removing soiled wool, or dags. These husbandry practices are aimed at preventing dag formation and urine staining to reduce the risk of flystrike, and facilitate wool removal. Docking can be painful, albeit for a relatively short period. The following articles feature some of the reflections of New Zealand farmers, farming industries and scientists as they continue to question and develop better methods of sheep husbandry.

Breeding, docking, dagging, shearing and processing sheep tails

Breeding sheep with short tails is a solution to the complex of factors which have led to tail docking

I once came across a UK researcher who proclaimed that British breeds had long tails and as British sheep are the pinnacle of sheep breeding, long tails must be associated with more productive sheep. My initial response is not suitable for this magazine. My considered response is the most fertile sheep in the world are breeds like the Romanov and Finnish Landrace, which have the shortest tails and come from Northern Europe, so he could not have meant the pinnacle of number of lambs born. Some of the meatiest carcasses come from European breeds, of which the Texel is an example in New Zealand. Texel's have medium length tails, so the British breeds are not the pinnacle of breeding for meat traits. The most productive milking sheep is the East Friesian from Europe with it's long skinny tail, so maybe milk is associated with long tails, but there are other milking sheep with short skinny tails or long fat ones. The sheep with the most desirable pelts are the Karakul and they have huge long fat tails. Maybe that researcher meant the woolled breeds like the Lincoln or Leicester, the Romney and possibly the Merino (originally from Spain).

So if you go back in time, people from the UK settled in New Zealand, brought their sheep, and with them their fascination with wool for kilts, tweed jackets and ultimately carpets. All the dedicated wool producing breeds seem to have long woolly tails and New Zealand was all about producing wool from the Romney.

Contrast that with South Africa which obtained sheep genes from all over Africa and Europe, including the UK, and they retained purebreds and developed hybrids with long thin, long fat, short fat and short thin tails! In New Zealand, improved lush pastures exacerbated by internal parasites, produce wet faeces which stick to tail wool creating an ideal environment for flystrike. The "obvious" solution was to amputate the tail.

Crutching and shearing the tail is not an easy job. The longer the tail, the longer time it takes. However, many Kiwi shearers have done a season or two shearing in the UK and Europe where breeders have every length of tail. Short to long and fat to thin, and they also have a variety of practices from not docking, through half-length docking to short and super short docking. Shearers have learned methods to shear long tails overseas and brought them home.

Since crutching or shearing tails is difficult, some people take the tail off too short which actually makes it more likely to accumulate dags. The wool bearing skin from the top surface of the tail is then brought closer to the the anus and then you need to crutch more often! If you have to dock, do it right.

For meat processors, a long woolly tail is not ideal as it might hang over and contaminate the valuable carcass during the skinning process. Clever engineers and different techniques can be developed to cope and there may be some value in tail meat. After all beef cattle have long tails and plenty of them go through a

slaughter process which copes with long tails.

One of the dumbest things

I have heard is that "You have to dock them or they will not get pregnant". That person was amazed when they realised they did not dock their cows and they reproduced satisfactorily. The dumbest thing I have ever heard is of a commercial sheep farmer who bought some rams with short tails from a ram breeder, took them home and docked them so that his neighbours would not point at them like Bruce Wills suggested people are inclined to do. (See following article for details).

Perhaps the last thing to talk about is the best one. We can simply breed the tails to be shorter like that of the Finnish Landrace. Short tails are highly heritable, with 70% of the variation in tail length in lambs being due to the length of tail of their parents. You also know which sheep to breed from as soon as they are born, because you can see which ones have the short tails! The genes for short tails are already widespread throughout the national sheep flock. If we team this up with the genes for a bare backside like that in the photo, we can do away with docking, crutching and flystrike and save a whole lot of time and money in the meantime.

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A bare back side and a short tail, the result of genetic selection designed to reduce the need for husbandry procedures in sheep.
 Photo supplied by Scobie

New Minister responsible for animal welfare

Nathan Guy is the MP for Otaki and the Minister for Primary Industries and Racing.



Nathan entered Parliament as a List MP in 2005 and was elected National's Junior Whip in 2006. He was promoted to Senior Whip in early 2008 and retained this position following the 2008 general election when he won the Otaki seat.

In 2011 Nathan won the seat of Otaki with an increased majority and was appointed to Cabinet as the Minister of Immigration, Racing, Veterans' Affairs and Associate Minister for Primary Industries. In January 2013 he became the Minister for Primary Industries, and retained the Racing portfolio. Included within his Primary Industries portfolio is the responsibility for animal welfare in New Zealand.

Before entering Parliament, Nathan was involved in farming and local government. He served for eight years on the Horowhenua District Council and managed the family dairy farm. In 2000 he was awarded a Winston Churchill Fellowship to study beef exports to the United States.

"As the Minister responsible for animal welfare, I am committed to ensuring that New Zealand maintains its reputation as a country that takes the welfare of its animals very seriously."

The tale of the tails

As National President of Federated Farmers of New Zealand I am used to being in the public eye but I suspect that it is my long tailed sheep that has added to this profile! It is human nature that we get quite interested in something that is different from the norm. Perhaps we take an interest because we think it is the beginning of a new trend, or maybe that the promoter is just mad. Something I have been accused of more than once!

Why did we try long tails?

From 2008 to 2011 I was Chairman of Federated Farmers Meat & Fibre, in this role I was made well aware from our highest paying market for NZ lamb, the UK supermarkets, that they were becoming increasingly irritated at the NZ farmer's habit of docking lambs tails so short. We farmers dock them short as we believed this meant less dag and less fly strike but welfare concerns were growing. As a farming leader I have always believed it important to lead from the front so when docking ('tailing' for the South Island readers!) a few years ago we left tails 5cm long.

This seemed to present no increased dags or flies, so being happy to 'experiment' we doubled this to 10cm the following spring. Again our sheep farming system didn't fall in a heap so a year later we doubled again to 20cm. At this stage farming neighbours did think we had "lost it"! You only had to see the crowd of quizzical looks and 'pointing fingers' at our nearby sale yards to know that what we were doing was not normal. Our "long tailed sheep" did promote a lot of discussion and interest which I believe is healthy for any industry.

Docking for us up here in the hills above Napier on the east coast of the North Island happens at the end of October, if long tails weren't working for us in a commercial farming situation we would simply dock our tails short, but we will again be leaving them long this year. Why? Because at this stage, we still believe that the benefits outweigh the negatives. Sure, sheep

with long tails still get "dirty" and they can be struck by fly. I also had lots of "grumbles" from my shearers in the early days so we do pay a bit extra for tails to be shorn.

But in our experience the benefits are numerous. On the overriding condition that sheep are well managed, we have found less of a "check" for lambs at docking (they are not losing a large appendage), less fly (built in fly swot), less dags, better muscling around the back end which is where the valuable meat is and of course we are well and truly meeting the welfare concerns of our higher paying customers. Another important advantage we are seeing is less 'bearings' or prolapses in the ewe just prior to lambing. This problem costs the NZ sheep industry 100s of \$millions a year in wastage and as an industry we have struggled to find good answers to this problem. At Trelinnoe we believe the increased muscling is helping.

One of our major meat company's is running a trial on long tailed lambs. (See following article for details). What we are doing here on our "Trelinnoe" farm is just a couple of farmers trying something different to solve some problems, just a commercial business trying to find an easier and better way of achieving good results. I look forward with much interest to the results that real scientists come up with in this trial.

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The animal welfare requirements for docking sheep are outlined in the *Animal Welfare (Painful Husbandry Procedures) Code of Welfare 2005*. This requires that docking must only be undertaken where necessary, cannot be performed on animals under 12 hours old, and pain relief must be used on animals over six months of age. Beef+Lamb New Zealand have summarised the [painful procedure requirements for sheep](#) on their website (beeflambnz.com).

Lamb tail length: what are the opportunities and issues?

Leaving lamb tails longer maximises benefits from a productive, animal welfare and economic perspective. Is this a myth, or is it reality?

This is the question being addressed by a Ministry for Primary Industries Sustainable Farming Fund project co-funded by meat-processor Alliance Group Limited, UK supermarket J Sainsbury and Beef+Lamb New Zealand. The three year project was launched in June 2012, with the overall aim of providing scientific-led and evidence-based information quantifying the effects of different tail lengths on productive capacity and welfare of the lamb and the economic return to the farmer.

Opportunities to enhance production and welfare of lambs by not docking or docking at longer lengths may exist. These opportunities have arisen through improvements in our understanding of the effects that nutrition and parasite management have on dag formation, improved management through the removal of dags via crutching and genetic selection of animals for faster growth rates and fewer dags. Some NZ farmers are currently leaving tails intact on lambs destined for early slaughter, to avoid the perceived growth check associated with stress from docking – some also believe that this may increase the muscularity of hind quarters and reduce carcase fatness. Other potential opportunities that may exist include an increase in revenue for farmers/processors if tails are left longer, generating additional product for render or sale as a commodity.

Farmers are aware of concerns of their international consumers. International retailers are now requesting scientifically-led and evidence-based information which can be used to assure their customers that certain management practices, such as docking, are justified. With NZ lamb occupying the top end of the meat product market, it is important that we ensure the product is delivered to a high specification. The proactive approach of this project, will enable the NZ sheep industry to respond quickly

to any national or international concerns around tail docking practices. By addressing potential welfare concerns, we will ensure that we retain our position in the international market as leaders in the supply of premium quality, ethically and sustainably produced food products.

The project is being managed by AbacusBio Limited, with the support of an industry steering committee involving NZ sheep farmers and tailing and shearing contractors, and representatives from Alliance Group Limited, J Sainsbury, Beef + Lamb NZ and AgResearch. The project focuses on both the opportunities, and consequences, of leaving tails at different lengths.

Farmers have been surveyed to quantify current practices and to understand the main drivers behind their docking decisions and the rationale behind docking at different tail lengths. Tail length data from processing plants has also provided an indication of the frequency of particular docking practices; in particular, the incidence of docking at various tail lengths. We will also seek to understand what might help farmers to change docking practices.

On-farm trials will also be conducted to define the effects that docking at different tail lengths, or leaving intact, has on lamb productivity – this includes effects on growth rate, meat yield and fat level at slaughter, dag accumulation and fly-strike risk. This data will be analysed in terms of the likely economic return to the farmer and the impact on the welfare of the

lamb. Tail lengths being investigated include, flush (~1cm), short (~3cm), long (~6cm) and intact and are pictured below.

The project has been designed to provide farmers with information from multiple perspectives, so that they can make informed decisions about the most appropriate tail docking strategy for their own businesses. The initial results of the research are expected to be released shortly with final results published in June 2014.

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The Rabbit Grimace Scale

– a new method for pain assessment in rabbits

Effective alleviation of pain in animals depends on the ability of the observer to recognise pain and assess its severity. The alleviation of pain, where possible, is important to ensure the welfare of the animals that we use and care for. Traditional methods of pain assessment based on monitoring of behaviour and clinical signs, such as weight loss, are time consuming and can have other limitations – for example, the signs observed may not be specific to pain.

Facial expressions are considered the gold standard for pain assessment in non-verbal humans, such as infants, and are beginning to be used to assess pain in laboratory rodents. This follows the work of Dr Jeffrey Mogil at McGill University in Canada who developed “grimace scales” for measuring pain intensity in the mouse and the rat. Each scale is based on changes in a number of facial “action units”, such as narrowing of the eyes (orbital tightening), and bulging or flattening of the cheeks and nose.

For the first time, and with NC3Rs (the UK’s National Centre for the Replacement, Refinement and Reduction of Animals in Research) funding, researchers at Newcastle University in the UK have established a Rabbit Grimace Scale, to enable more effective and faster pain assessment in these animals. The scale was developed by Dr Matt Leach and colleagues using data from a study commissioned by the Swedish Board of Agriculture on clamp tattooing of the ear – a procedure commonly used to identify farmed rabbits.

Clamp tattooing is a potentially painful, although it is usually performed without the provision of local anaesthesia, compromising the welfare of the rabbit. This study examined the behavioural and physiological effects of applying the tattoo, with and without the application of local anaesthetic. It was found that application of



a.



b.



c.



d.

The rabbits on the left (a & c) show no evidence of orbital tightening, cheek flattening, pointed nose or whisker changes indicative of pain. In contrast, the upper right rabbit (b) displays changes in all those facial expressions, while the lower right animal (d) has a pointed nose and whisker changes. Courtesy of Keating et al.

the tattoo to rabbits that had not had the area anaesthetised beforehand caused the rabbits to show increased amounts of struggling and vocalisations, higher heart rates and blood pressures and greater facial expression scores of pain than those rabbits that received local anaesthesia prior to being tattooed.

Changes that the rabbits were observed to be making in facial expression; orbital tightening, cheek flattening, nose shape, whisker position and the position and shape of the ears reliably indicate acute pain and correlate with physiological signs of stress and, as such, were used to develop the rabbit grimace scale.

Dr Leach’s team is now collaborating to develop grimace scales for other species, such as rhesus macaques, sheep, pigs and horses.

Dr Matt Leach

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**This article first appeared on the NC3Rs website <http://www.nc3rs.org.uk>*

Keating SCJ, Thomas AA, Flecknell PA, Leach MC (2012) Evaluation of EMLA cream for preventing pain during tattooing of rabbits: Changes in physiological, behavioural and facial expression responses. PLoS ONE 7(9): e44437.

CALVING A PLASTIC COW

– training initiatives to get calves off to a good start in life

The New Zealand dairy industry comprises approximately 4.6 million dairy cows farmed in around 11,800 herds. Most of these herds are managed on a seasonal calving basis with the majority of calves born in the late winter/early spring period (July to September in New Zealand).



A farmer feels inside the model calving cow at a DairyNZ workshop. Courtesy of DairyNZ

The industry keeps and rears calves for replacement milking stock as well as providing calves to be reared as part of the beef industry. In addition, some 1.6 million calves are sent for slaughter as bobby calves.

DairyNZ is an industry-good organisation, funded by a levy on milk solids production, which carries out research, development and

extension activities to ensure an industry that is responsible and competitive for the long-term.

The Animal Husbandry and Welfare team within DairyNZ provides information on calf rearing to New Zealand dairy farmers. This information is based on the minimum standards from the **Animal Welfare (Dairy Cattle) Code of Welfare 2010**, recommended best practice guidelines from the code and knowledge about good farming practices. The focus of this information is on ensuring that farmers and their staff understand and comply with minimum standards, and also to encourage adoption of higher standards of animal care.

DairyNZ provides a wide range of resources for farmers to improve knowledge about animal care and husbandry. For specific questions that may arise an extensive website (www.dairynz.co.nz) with fact sheets, posters, checklists and other information about calf rearing is available. Funding from DairyNZ also supported the development of the NZ Calf Rearing website (www.nzcalfrearing.com) which has a series of fact sheets covering many aspects of calf rearing.

In addition to the website, printed material relating to calf rearing, including a bobby calf resource pack, and articles in the DairyNZ regular publications *Inside Dairy* and the *Technical Series* are available to farmers and other industry personnel. For example, some transport companies provide the bobby calf resource pack to all their drivers who collect calves from farms, and some meat processing companies have distributed the bobby calf resource pack to all their suppliers.

It is recognised that producing written material, whether in hard or soft copy, only reaches part of the target audience. Events where farmers can receive and share information and experiences with other farmers, are known to be particularly effective for communicating improved standards and best practice care.

The Extension Team within DairyNZ regularly runs discussion groups for farmers specifically on calf rearing prior to calving each season.

Over the past two years the Animal Husbandry and Welfare team has developed and run a farmer training programme aimed at improving the skills of new farm staff. Training material has been developed to cover management of the calving cow, care of the new born calf and calf rearing. This material was initially delivered to farmers in workshops run by DairyNZ staff, and more recently has been delivered to trainees enrolled in New Zealand Industry Training Organisation courses for the primary sector.

The focus of the training courses has very much been on the trainee, with material designed to make the learning fun and memorable. Sessions are kept short and include interactive group activities such as placing a series of photos of a calving cow in order of the calving process. Wherever possible the actual equipment used on farm is used at the workshop, for example calving kits so that trainees know and understand the use of each item in the kit. The team has also designed innovative training aids, and for the calving management workshops manufactured a model calving cow from two 100 litre plastic barrels. The “cow” holds a model calf and is used to demonstrate both a normal and an abnormal calving. The take home message for the trainees is to understand what normal looks like, and if the situation is not normal to report to their boss or call a veterinarian for assistance.

The New Zealand dairy industry strategy is about making dairy farming work for everyone. Providing information and support to farmers to enable high standards of animal welfare is part of being a responsible industry.

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Monitoring bobby calf welfare

For the past five years MPI Verification Services veterinarians at processing premises have been monitoring the welfare of bobby calves presented for slaughter. Verification Services have been providing the results of this programme to our industry partners since 2008.

MPI has worked closely with the industry bodies as this programme has evolved, as all parties along the supply chain from farm to slaughter have a key role to play in protecting the welfare of these young and vulnerable animals. The target has been a reduction in calf mortality during the period of transport and lairage prior to slaughter.

The project has been based largely on education and a willingness to comply with current welfare standards. However there is also a regulatory presence that has a focus on those that choose not to comply or have been less able to comply.

The data that has been gathered by MPI veterinarians has allowed some proactive work to be undertaken further up the supply chain by MPI staff to educate farmers, transport operators, processors and others involved in the industry about the importance that each group plays in meeting the standards in the codes of welfare to achieve good welfare outcomes.

Although a significant reduction in mortality rates has been seen since the introduction of the bobby calf programme, MPI and industry are committed to ensuring further gains.

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The National Animal Ethics Advisory Committee (NAEAC) invites applications or nominations for the: **THREE Rs AWARD 2013**

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 an appropriate formal occasion later this year. Receipt of the award will be publicised in selected media, although specific details of the work involved can be restricted if appropriate.

**Please contact the NAEAC Secretariat via email (naeac@mpi.govt.nz)
for an application form.**

Applications close on Friday 21 June 2013

The future of animal welfare in New Zealand

The National Animal Welfare Advisory Committee (NAWAC) held a strategic planning meeting at Lincoln in February to identify the key issues for animal welfare in New Zealand over the next decade in terms of husbandry and ownership practices and how NAWAC may best address them. This meeting was prompted by the potential changes in the roles and methods of operation of NAWAC foreshadowed in the discussion document on amendments to the Animal Welfare Act 1999.

In NAWAC's view the trend of increasing societal awareness of animals' sentience and concern for their wellbeing will continue and that this will be expressed in expectations for increasing animal welfare standards and the enforcement of them. This trend towards positive welfare, 'a good life' as expressed the UK Farm Animal Welfare Committee may not always be in the best interests of animals. For example there is an increasing desire of pet owners to extend the lifetime of companion animals by whatever means available sometimes resulting in considerable pain and distress from chemotherapy or inappropriate prostheses.

A range of specific issues of current or future priority included:

- breeding standards that demand harmful traits for fashion in companion animals;
- breeding selection for production traits in farmed animals that result in reduced welfare such as the need to feed to match genetic potential;
- climatic shelter for farm animals;
- welfare issues in free range farming;
- obesity in companion animals;
- issues around intensification of livestock production systems such as handling and housing practices and the potential loss of husbandry skills leading to a loss of welfare;
- the future of zoos, including what animals are appropriate animals to keep in New Zealand zoos;

- the use of animals in entertainment;
- meeting the social needs of animals separated from the normal social structures; and
- euthanasia – both of unwanted, bred animals (e.g. bobby calves, non-performing racing animals, male layer chicks, etc) and of animals at the end of their productive lives.

NAWAC then considered how it might address these issues in its future advice to the Minister about how to drive change beyond relying on high-level advice and recommended codes of welfare. The increased range of regulatory tools in the revised Act will have implications for NAWAC's workload. But NAWAC also needs to consider models for interaction that all involve all people that need to be involved.

In order to clarify and address these issues NAWAC will need to identify processes for prioritising them, considering how to analyse them and then deciding whether codes, regulations or other forms of intervention would be most useful in addressing them. The processes will need to include:

- developing positive tools for handling immediate issues as without losing focus on strategic matters;
- framing or considering animal welfare issues as part of holistic assessments or considerations, not in isolation (e.g. as animal welfare versus economics);
- how to most helpfully convey advice to the Minister;
- formalising a process for identifying and preparing for emerging issues such as new technologies; and
- how to most effectively utilise available resources.

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OIE Regional Animal Welfare Strategy update

New Zealand is part of the Asia, Far East and Oceania region of the World Organisation for Animal Health (the OIE). In 2012, the OIE Regional Animal Welfare Strategy for Asia, Far East and Oceania was issued, to facilitate the implementation of the OIE animal welfare guidelines, and to provide a framework to co-ordinate animal welfare activities and address emerging issues in our region. The Strategy has recently been updated and an implementation developed to accompany it. For an update on this and related work in our region, see the latest [RAWS Newsletter](#).

Codes of welfare – update on consultation, development and review since *issue 13*

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

Issued

- 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](#).

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Looking out for llamas and alpacas

The llama, alpaca and guanaco are all members of the camel family, are often referred to as South American camelids or simply camelids. They have been growing in numbers and popularity since their reintroduction to New Zealand in the 1980s after first being introduced in the 19th century. Most camelids are currently kept as companion animals, though there is an ongoing effort to develop a commercial alpaca industry. Maintaining a high standard of welfare for these intelligent and friendly animals is complicated by the small herd sizes, lack of stock experience of many new owners, and limited veterinary and scientific resources on their specific needs.

While the llama, alpaca and guanaco are all separate species; they are very closely related, are fully cross-fertile, and share similar health and welfare needs. They are kept both for commercial purposes (fleece, trekking, breeding) and as companions.

The camelids introduced in the 19th century did not endure. Re-introduction in the 1980s has given rise to the current population, which probably now numbers around 30,000 animals, with alpaca comprising about 90% of that total.

The growth of the camelid population has been slow relative to other newly-introduced species for a couple of reasons. Twin births are very rare (live twins happen at a rate of less than 1 per thousand). The fraction of females being bred has also been limited by economic factors, as first llama and more recently alpaca breeders have cut back on breeding due to slowing sales. There are also live animal exports from NZ, primarily of alpacas but more recently also of a small number of llamas.

A number of challenges remain for ensuring the health and welfare of llamas and alpacas in NZ:

- **Small herd size.** Most camelids owners have less than 20 animals, and many people have five or less as pets on a small

block. It is hard to spread educational materials to this diffuse population.

- **Lack of previous experience.** A newly purchased herd of llamas or alpacas is often the first stock the purchaser has ever owned. They may not have the skills gained by employment or a childhood on a pastoral farm.
- **Veterinary unfamiliarity.** While there are a number of very experienced vets in NZ who work with camelids often, there also remain many more vets who only see camelids rarely.
- **Limited research.** Compared to other stock or companion animals, little is known about camelids. All medications have to be prescribed “off label” as there has not been any camelid-specific safety or efficacy trials. Most of the research has been done in North America or Australia, and while this has been invaluable, the findings are not always applicable to animals being kept under local pastoral conditions.

Camelids have some specific needs which need to be met:

- **Companionship.** Llamas and alpacas are very social animals. They gain comfort and security from living in a herd structure. Living in a group with other camelids is by far the best option, and the various camelid species will generally live with one another happily.
- **Vitamin D.** Even the fierce-seeming UV of New Zealand is not enough for camelids, which evolved to live at over 4000 metres altitude. All camelids need supplemental Vitamin D for at least their first two winters. Clinical hypophosphataemia (rickets) has been observed in alpacas throughout the country.
- **Shearing.** Most camelids need to be shorn annually (with the exception of some llamas and aged animals of all species). While camelids appear to be quite resistant to dagging and fly-strike when compared to sheep, heavily over-fleeced animals are still subject to heat stress and other health issues.

Education is and will remain the key to maximising health and welfare outcomes. The Code of Welfare is one important component of this process. Many camelid owners learn how to

care for their animals via “word of mouth”, which can pass on information and misinformation in equal measure. For example, nearly half of all alpaca owners systematically under-drench their animals, which puts them at increased risk of developing drench-resistant worms.

In my experience llama and alpaca owners are passionate about their animals, and only want the best for them. If we can make good health and welfare information available, it will be used, and the animals will benefit.

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The author has recently launched www.camelidhealth.org as part of a project to make accurate and relevant information about alpacas and llamas freely available to all NZ camelid owners.

The Animal Welfare (Llamas and Alpacas) Code of Welfare 2013 has recently been issued by the Minister for Primary Industries. The new code of welfare sets the minimum standards required for owners and those who care for camelids in New Zealand to meet their responsibilities under the Animal Welfare Act.

The minimum standards in the code relate to all aspects of llama and alpaca ownership and care including food, water, shelter, behaviour and socialising. The code also provides recommendations for best practice in camelid husbandry and handling.

The code and the explanatory report that accompanies it are available on the [MPI website](http://MPI.govt.nz).



Let me show you a better way of doing that

– reflections on over several decades as a lab animal vet



Pigeons are used extensively in biomedical research. Photo supplied by J Schofield.

John Schofield

History often has little practical or academic value, except as a grim reminder of unventilated, unsanitised, malodorous and medieval conditions which institutional officials boldly claimed as animal research facilities. On joining the University of Otago's Department of Laboratory Animal Sciences as Director in 1991, I was reminded of those historical notes from the Wistar Institute in Philadelphia USA in the early 1900s!

Returning home from 12 years at the University of Illinois Medical Center in Chicago, was a profound laboratory animal culture shock. The task of overseeing the renovations of the animal facility was daunting – all manner of No 8 wire engineering methods were proposed – but we made the best of the resources available. Unlike the USA where you could order 200, 150gm male Sprague-Dawley rats from commercial breeders on Monday and have them delivered on Thursday, the Dunedin Medical School bred its own rodents. Supplying a cohort of 200 age-and-sex-matched rats was unprecedented without months of notice.

The first order of business was to establish a health surveillance monitoring programme. I had developed a passion for histopathology and found a soul-mate in Dr Gail Williams, of the Pathology Department in the Medical School. Our relationship has withstood the trials and tribulations of fiscal and political upheavals and we collectively stress-managed the huge workloads by music: Gail on flute and I on clarinet. Much to our delight; our large animal surgery happened to have marvellous acoustics and we filled the area with wondrous duets after hours.

The second priority was instruction for graduate students using animals and fortunately I had been press-ganged into creating and teaching a similar course in the US. A number of years and versions later, the University of Otago has on-line and practical units covering the basic essentials. The University and its Animal Ethics Committee have been totally supportive of these programmes, and they have brought significant advances in welfare.

Interestingly, the science literature is replete with surgical techniques not conforming to the fundamental principles of veterinary surgery. Techniques invented by necessity are probably accepted without question or reference to the veterinary literature. Therein lies the challenge for the laboratory animal veterinarian,

frequently having to offer to “let me show you a better way of doing that...” The situation is not helped by a shortage of qualified laboratory animal veterinarians. And of course acceptance of the veterinarian's opinion is not universal amongst academics!

The third concern was Animal Ethics Committee procedures for approving the manipulations of animals in research and teaching. There have been some remarkable changes as committee members grappled with humane endpoints, the need for researchers to provide an animal-centric application, and to provide sufficient details of techniques to enable the potential impact on individual animals to be understood.

After 32 years in this branch of the veterinary profession, I have assuaged my “welfare-guilt”, with the knowledge that highly invasive and potentially painful procedures, performed in the name of scientific inquiry – are ethically tolerable, as long as well-defined humane endpoints are always applied. It takes the ever watchful eye of an experienced practitioner and the job demands a willingness to take on any academic who puts their data collection before the welfare of animals. As you might imagine, I have been deleted from more than one Christmas card list over the decades.

In taking counsel from Saint Paul: “Stand firm then, with the belt of truth buckled around your waist, with the breastplate of righteousness in place”, I would suggest that all laboratory animal veterinarians should clothe themselves with the full body armour of the animal welfare principles as forged by Russell and Burch and New Zealand's *Good Practice Guide for the use of animals in research, testing and teaching*.

Sir Winston Churchill wrote: “a chap should have at least three hobbies and one of them should be painting”. I now have time to indulge in golf, drawing-painting, the clarinet, consulting

continued...

for a Japanese university, continued service on the ANZCCART Board, youth mentoring, building sailboats for the disabled, and developing training programmes for colleagues in our profession, papers to write and people to work with. The next 20 years already seems full of potential excitement.

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John dressed for clarinet recital

John Schofield is one of only two American College of Laboratory Animal Medicine board-certified laboratory animal veterinary specialists in New Zealand, and, until his recent resignation from the University of Otago, the only such veterinarian working in his field of speciality. To put that qualification in context and to highlight the value of John's contribution – and the gap he leaves behind him – board-certification involves advanced training in a specific area of veterinary medicine over several years in a residency programme in the United States, followed by examination.

A past member of the National Animal Ethics Advisory Committee (NAEAC), he currently serves on the board of the Australian and New Zealand Council for the Care of Animals in Research and Teaching (ANZCCART), so is not yet lost to this particular branch of veterinary medicine. He does have other passions, however, and these have taken flight since his resignation. An avid golfer, skilled artist and keen cyclist, he also makes the time and commitment to act as a mentor under the auspices of the Otago Youth Wellness Trust as well as playing his clarinet to rest home and dementia unit residents in Dunedin every weekend.

It is hoped that, amongst all these activities, he will keep aside a little time to provide guidance in the field of health and welfare of laboratory animals. Given his considerable experience, his extensive knowledge and his legendary passion for the welfare of research animals, no matter their species, his absence from the field would be otherwise sorely missed.

Virginia Williams
Chair
NAEAC

Mark Fisher
Manager Animal Welfare
Ministry for Primary Industries

Flight of the falcon

The rehabilitation of injured New Zealand falcons uses ancient and traditional techniques of falconry to ensure that birds released back into the wild are fit and able to survive.



Falcon chasing a lure. Photo courtesy of Wingspan.

The New Zealand falcon is a bird found nowhere else in the world. It is endemic to New Zealand, and is currently listed as a threatened species.

Falcons are birds of prey that hunt other animals, especially birds, and have special features that allow them to do so. Unlike most falcons, which have long wings and a short tail and live in open landscapes, the New Zealand falcon has evolved in a forested environment and has short wings and a long tail to enable it to manoeuvre at speed through the trees. Being a highly adaptable species they have coped with the clearing of land and now live quite comfortably in open tussock, farmland country.

With their fast flight, long bird-catching toes and sharp talons, falcons are designed to hunt at speed. Mid-air contact and quick foot/eye co-ordination are skills necessary in order to catch their prey which

is often taken on the wing. If the prey isn't killed or stunned on impact then a quick bite from their powerful beak is all that is needed.

However, falcons don't only rely on these attributes to hunt prey. They are very intelligent, learning quickly from experience by remembering what works, and employing a number of hunting strategies to catch different prey. Low to the ground flying ensures a limited shadow is cast, and flying through trees or behind obstacles hides their approach allowing them to get nearer to prey before it can escape.

Unlike the Australasian harrier "hawk", New Zealand's most common bird of prey and a soaring specialist, falcons are not so readily inclined to eat carrion such as squashed possums or rabbits on the road. Falcons mainly hunt for live food, and can struggle if young and inexperienced, especially during winter if prey is scarce or they are not "fit" to catch prey. In such cases falcons may resort to eating carrion.

Part of what Wingspan does is rehabilitate injured falcons to ensure they can return to the wild fit and able to fend for themselves. In order to achieve effective results Wingspan uses ancient and traditional falconry techniques to get the bird back on the wing as soon as possible. This can include intensive training sessions or techniques as simple as replacing old or broken feathers with new ones.

In order to fly properly a bird needs feathers that are in good condition, especially the birds of prey. Sometimes a falcon may be brought in with nothing wrong except damaged or broken feathers which compromise its flying ability. Using a method called "imping" the damaged wing or tail feathers can be replaced using the corresponding feathers from dead falcons or collected from moulting birds.

Due to feathers being hollow a shaft or needle can be created and a new feather inserted onto the base of the old feather stub. This is a quick and very effective way to get the bird on the wing as

quickly as possible. It ensures that the falcon does not lose condition or spend unnecessary time in an aviary. Because most birds moult once a year it could take that long for the falcon to grow new feathers. For the welfare of the bird it is much better to imp the damaged feathers which will later fall out during the normal moult process.

Sometimes, however, it is not that easy. More often than not the falcons that come into Wingspan have major injuries which need much more attention. Because they rely so heavily on good flight and hunting skills Wingspan uses falconry techniques to ensure the bird is suitable for release. This involves intensive training techniques which initially gain the bird's trust and then allow the falconer (trainer) to free fly the bird. This way the bird can be fully assessed and released with the knowledge that it can hunt and survive. Falcons need to be physically fit and in top 'working' order before release into the wild.

Training can involve many hours depending on the bird. In the wild chicks may spend up to three months with their parents before becoming independent. The longer they have with their parents the more time they have to learn the skills required. When training birds for release they are closely monitored until they are able to fly. Occasionally some birds may never be able to fly or hunt properly and therefore are not able to survive in the wild. These permanently injured falcons become part of Wingspan's breeding programme and their chicks are instead released back into the wild.



The New Zealand falcon is found nowhere else in the world. Photo courtesy of Wingspan.

At the end of the day there is absolutely no point in releasing a falcon, or any other animal, into the wild that cannot fend for itself. They simply will not survive.

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For more information about falcons, rehabilitation or Wingspan visit www.wingspan.co.nz. Alternatively visit the Wingspan National Bird of Prey Centre, near Rotorua, and see the birds in action! Open daily 9am – 3pm

Photo competition

Here is your opportunity to showcase animals and animal welfare by submitting a photo to *Welfare Pulse*! The theme is 'people and animals' and can be a pet, production animal or an animal in the wild. The best photo, chosen by the editorial team, will be published in the September issue.

Send your high-resolution image to animalwelfare@mpi.govt.nz

Photographers must be the sole author of the entries and hold all intellectual property rights to them. Photos must be submitted with a title, date shot, location and caption. **Entries for the September issue of *Welfare Pulse* close 2 August 2013.**

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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To get the competition started Cheryl O'Connor from the MPI Animal Welfare team has submitted this stunning photo of a male hihi (stitchbird). The hihi is one of NZ's rarest birds and the only naturally surviving population is found on Little Barrier Island. There are five small reintroduced populations, one of which is on Kapiti Island where this image was taken, with an old Nikon film SLR camera, on a visit there in November 2006.

Welfare Pulse

Welfare Pulse is published four times a year by the Ministry for Primary Industries. 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. For general enquiries contact:

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