

ANIMAL WELFARE (DOGS) CODE OF WELFARE REPORT

Introduction

1. The draft Animal Welfare (Dogs) Code of Welfare (the Code) has been developed by the National Animal Welfare Advisory Committee (NAWAC), pursuant to the Animal Welfare Act 1999 (the Act). This report accompanies the Code recommended by NAWAC to the Minister, as required by section 74 of the Act.

The report notes:

- the reasons for NAWAC's recommendations;
 - the nature of any significant differences of opinion about the Code, or any provision of it, that have been shown by the submissions; and
 - the nature of any significant differences of opinion about the Code, or any provision of it, that have occurred within NAWAC.
2. In providing this report, NAWAC notes that it fully considered all submissions it received and reviewed relevant scientific literature, and that there was debate among NAWAC members on many points. This report is not required to, and does not attempt to, show every detail of the analysis and discussions that took place.
 3. There are a number of minimum standards where the animal welfare implications are self-evident and require no explanation for their inclusion. NAWAC has decided that it will not provide comment on these minimum standards or recommended best practices, but will provide explanations on minimum standards which it believes are complex or controversial or on which it received submissions with significant differences of opinion. Minimum standards as drafted may have been amended for a number of reasons, including to make them legally robust, to ensure a more effective coverage of the issue, or to change from a recommended best practice to a minimum standard (or vice versa).
 4. It should be noted that the Act does not define "significant differences". While there were a variety of opinions expressed in the submissions, NAWAC did not consider that all differences necessarily represented significant differences of opinion. NAWAC has taken the view that significant differences are either where there are large numbers of submissions which are contrary to a minimum standard in the Code, or where a submission puts forward a justification based on scientific evidence or good practice for a different or alternative minimum standard. NAWAC notes that some individuals or organisations may interpret "significant differences" in a way that varies from the NAWAC view.
 5. This code applies to all persons responsible for the welfare of dogs, including dog breeders, those who show dogs, those who keep dogs as companions (pets) and those who use dogs as working animals or for sport. Examples of working and sport dogs include disability-assist dogs, dogs used for guarding, dogs used for livestock management, sled pulling dogs, racing greyhounds, dogs and hounds used for hunting and agility dogs. It also covers dogs kept for research, testing and teaching, in situations where routine housing and care fall outside of the scope of Part 6 of the Animal Welfare Act. The code provides for the general principles of the care and management of *all* dogs.

Why do we need a code of welfare for dogs?

6. Nearly 500 000 dogs are registered in New Zealand. They are kept as companion animals or used as working or sport animals by the police, government officers, farmers, hunters and others. While there is an existing code of recommendations and minimum standards on the welfare of dogs made under previous legislation, that code

no longer reflects good practice, current science and available technology. It also has no legal effect.

7. The Act specifies that owners and persons in charge of animals (including dogs) must meet the needs of animals in their care. It does not specify how to meet these needs. Nor does it describe how those responsible for ensuring compliance with the Act might determine whether or not these needs have been met. Additionally, the Act functions to avoid unnecessary or unreasonable pain or distress being caused to animals but does not list the areas or practices in which this might be a concern and the ways in which it might be avoided. This is the function of the codes of welfare.
8. It is essential that owners and persons in charge of dogs know what the needs of dogs in their care are, and how these needs can be met, in order that they can act lawfully as well as so that the welfare needs of their dogs are met. This code of welfare for dogs fulfils this requirement and constitutes the Government's statement of policy in this regard. It sets out the Government's expectations regarding appropriate treatment of dogs and identifies what is considered to be inappropriate treatment of dogs. It is expected that dog owners will use this code as guide to best practice and that those required to ensure compliance with the Act will use it to assist in identifying unacceptable practices.
9. Key needs are described in the areas of purchasing, adopting and relinquishing dogs; food and water; body condition; containment, tethering and shelter; breeding (including desexing and the management of inherited disorders); health (including surgical procedures and exercise); behaviour and training; transportation and euthanasia.

Code preparation and public submissions

10. The Act allows for any individual or organisation to draft a code of welfare. The code of welfare for dogs was drafted by a group convened by the New Zealand Companion Animal Council. The group had representatives from the Royal New Zealand Society for the Protection of Animals, New Zealand Veterinary Association, New Zealand Vet Nurses Association, Federated Farmers of New Zealand, Companion Animal Society, Unitec, New Zealand Kennel Club and the New Zealand Institute of Animal Control Officers. As required by the Act, representatives of those likely to be affected by the Code were consulted during its preparation and before public notification. These included the New Zealand Police and Department of Conservation, which rely on working dogs; Department of Internal Affairs, which manages dog control; representatives of pet retailers, kennel managers and greyhound racing; and experts in dog care, behaviour and training.
11. NAWAC considered the Code to ensure that it complied with the purposes of the Act, that it was written clearly so as to be readily understood, and that representatives of those likely to be affected by it had been consulted. At that time, as with all codes of welfare, NAWAC did not to make any final decisions on the Code until it had received submissions. The Code is required to be publicly consulted, and for NAWAC to come to any conclusion prior to this consultation would have meant that NAWAC was not following due process by acting in a biased and predetermined manner.
12. The Code was publicly notified on 17 September 2007 by notices in the major newspapers in Auckland, Wellington, Christchurch and Dunedin. In addition, it was sent to specific interested groups and stakeholders, including the Society for the Prevention of Cruelty to Animals, the New Zealand Veterinary Association, the New Zealand Kennel Club, the Department of Internal Affairs (dog control policy), Federated Farmers of New Zealand, the Council of Docked Breeds, Meat and Wool New Zealand, the New Zealand Institute of Animal Control Officers, the Game and Forest Foundation of New Zealand, Guide Dog Services of New Zealand and the Versatile Hunting Dog Test Association. The closing date for submissions was 1 November 2007.

13. A total of 238 submissions were received during the public consultation period. NAWAC also received an oral submission from the Council of Docked Breeds. The majority of submissions related only to the proposal to restrict tail docking, with most of these against the proposal. Other submissions related to the key issues identified below.
14. All submissions were carefully considered by a subcommittee appointed by NAWAC to review the Code. A summary of submissions was prepared and NAWAC's responses to the submissions were noted.
15. The subcommittee reported the Code back to NAWAC on 14 May 2009 for final consideration and approval for recommendation to the Minister. The Code and report were subsequently peer reviewed by Professor Kevin Stafford, Professor of Applied Ethology and Animal Welfare, Animal Welfare Science and Bioethics Centre, Massey University, Palmerston North. Professor Stafford has recently published a book 'The Welfare of Dogs' and is a known expert on dogs, internationally.

Key issues

16. The key issues of concern raised during consultation on the 2007 draft Code were:

Food and Water

- *Should a 'thin' dog be considered to be malnourished?*
- *Should a minimum standard relating to overweight dogs be included?*

Breeding

- *Should a minimum standard be included to reduce the incidence of inherited disorders when breeding dogs?*

Desexing

- *Should it be recommended that desexing is performed before puberty?*

Weaning and Removal of Puppies from the Bitch

- *Should a minimum standard be included to reduce the incidence of inherited disorders when homing puppies?*

Supply of Puppies

- *What is the minimum age at which a puppy can be rehomed?*

Health

- *Should a minimum standard be included which states a minimum amount of exercise that a dog should receive per day?*

Removal of Dew Claws

- *Should it be recommended that dew claws are removed from a dog?*

Tail Docking

- *A number of issues arose in relation to tail docking; they are discussed in detail below.*

Aids for Behavioural Modification

- *Should the use of electronic devices to control problem behaviour be allowed?*
17. A further issue identified subsequent to the release of the draft code for public consultation was the use of ‘prong’ or ‘pinch’ collars for dogs. These are essentially choke chains that have sharpened or blunt prongs on some of the links. Additionally, concern was raised by two single-issue lobby groups that the requirements for exercise would not go far enough to prevent long-term tethering or confinement of dogs.
 18. All key issues raised are addressed in detail in the following sections:

Section 3: Food and Water

Should a ‘thin’ dog be considered to be malnourished?

19. Some breeds or types of dogs are naturally slim (e.g. greyhounds, working dogs) and would be classed as ‘thin’ on the five-point body condition scale contained in the appendix to the Code. However, they are not necessarily malnourished. After public consultation it was considered that to classify a dog as ‘thin’ for the purposes of a minimum standard, this body condition should also be accompanied by other physical or behavioural indicators of malnutrition (dull eyes or coat, lack of muscle tone, listlessness).

Should a minimum standard relating to overweight dogs be included?

20. A minimum standard has been included to state that if a dog is ‘grossly obese’ (as described in the Code appendix), veterinary advice should be sought and the appropriate steps taken to reduce the body weight of the dog. This is because it was considered that the quality of life of a ‘grossly obese’ dog is poor and there can be acute and long-term health consequences for dogs in this condition which require immediate attention. By contrast, the welfare needs of dogs in the condition described as ‘heavy’ in the code can be met – and negative effects avoided or treated – by meeting the minimum standards for food, water, exercise, health and so on, laid out elsewhere in the Code.

Section 6: Breeding

Should a minimum standard be included to reduce the incidence of inherited disorders when breeding dogs?

21. Some dog breeds are prone to particular disorders which directly or indirectly affect their welfare. Sometimes the problems are caused by a trait that is deliberately bred into the dog. For example, brachycephalic dogs (those with short, wide heads such as bulldogs or pugs) are prone to overheating, and skin disorders are prevalent in dogs bred to carry wrinkles. Sometimes the problem is caused by inbreeding, rather than by deliberate breeding for a particular trait (e.g. heart disorders, dysfunctional kidneys or thyroid gland).
22. Prevention of genetic abnormalities caused a lot of discussion in the Subcommittee, particularly regarding the practicality of this section and its appropriateness in regard to protecting animal welfare. Issues discussed included the protection of an individual animal's welfare versus that of individuals that do not yet exist (i.e. future pups), concern held by Royal New Zealand Society for the Protection of Animals, New Zealand Companion Animal Council, New Zealand Kennel Club, breeders and others

for this aspect of breeding, and alternative measures with the same effect that can be taken by these organisations and, in some cases, already have been taken, meaning that a minimum standard in a code of welfare may not be appropriate or desirable or needed.

23. The intended outcomes of this section are to 1) stop indiscriminate breeding, and 2) stop inherited disorders. The Subcommittee needed to be certain that there were no other appropriate ways of doing this besides a minimum standard. However, on the basis that cases of dogs that are suffering from complications arising from inherited disorders are still regularly seen by veterinarians, it was considered appropriate for this to be covered by a minimum standard.
24. In addition, it was noted that the New Zealand Kennel Club and the New Zealand Veterinary Association are actively working toward a scheme to reduce the occurrence of breed-related and inherited disorders in dogs that have a significant impact on dog welfare. However, this scheme was only beginning when the draft code was recommended for issue. Additionally, it was felt that the scheme still needed a baseline that was founded in compulsory regulation rather than in voluntary compliance of a selected number of members of the Kennel Club.

Section 6.1: Desexing

Should it be recommended that desexing is performed before puberty?

25. Desexing of dogs is recommended to be performed at an early age (before puberty), primarily for reasons of dog control and the reduction of unwanted litters. However early desexing has the added advantage of removing the opportunity for reproduction-related problems to develop.
26. The information presented in regard to desexing has been well debated in the veterinary literature (eg see Walsh and Worth, 2008) and some suggest that dogs should not be desexed until they are >6 months of age or, in the case of bitches, until they have experienced at least one season. It has been stated that premature desexing can result in problems relating to incomplete bone maturation, abnormal growth of the long bones (so that dogs are larger than normal and may have problems such as osteoporosis), urinary incontinence and other health risks (including behavioural problems). However, there is much evidence to the contrary, and evidence that some problems can be treated or avoided by proper attention to diet or veterinary care, and the general consensus is that early desexing does not have significant effects on the health of the dog.
27. On balance, early desexing will reduce the incidence of disorders of the reproductive system and mammary gland tumours, does not make the animals inactive or disinclined to be active, but does assist the management of aggression and wandering dogs, and has few negative impacts which can largely be managed. However, the main reason for recommending that this procedure is performed before puberty is that it is highly advantageous on the basis of dog control, with consequent benefits for dog welfare.
28. This issue will need to be reconsidered in light of available evidence when the Code is reviewed.

Section 6.4: Weaning and Removal of Puppies from the Bitch

Should a minimum standard be included to reduce the incidence of inherited disorders when homing puppies?

29. The inclusion of a minimum standard here puts a strong onus on those supplying puppies to provide advice on inherited disorders. The reasons for a minimum standard here are the same as those referred to section 6 (breeding) in that it will 1) stop indiscriminate breeding and 2) stop inherited disorders.

30. The Subcommittee needed to be certain that there were no other appropriate ways of doing this besides a minimum standard. This Minimum Standard is intended to cover those supplying puppies that come from accidental/unplanned matings in addition to planned matings, (in contrast to the Minimum Standard in the section on breeding, which covers only planned breeding). It is recognised that where dogs are given as gifts, inherited or rehomed or sold through the Royal New Zealand Society for the Protection of Animals or similar organisations, the dog's full background will in many cases be unknown. In addition, because this refers to inherited disorders 'known' in a breed, it is possible that ignorance could be used as defence. Nevertheless, on the basis that cases of dogs that are suffering from complications arising from inherited disorders are still regularly seen by veterinarians, it was considered appropriate for this to be covered by a minimum standard. The Subcommittee also considered that information on inherited disorders in particular breeds is widely available on the internet and should thus be within reach of most dog owners (if not all).

Section 6.5: Supply of Puppies

What is the minimum age at which a puppy can be rehomed?

31. The science around the impacts of rehoming age on the welfare of adult dogs was discussed by NAWAC in full committee in March 2009. It was determined that there was a risk to the welfare of puppies being rehomed after the optimum socialisation period (6 – 12 weeks of age) in that they could develop behaviour disorders and that the minimum standard should allow puppies to be rehomed when they were able to feed independently, as long as they were in good health. The recommended best practice remained that puppies should be at least eight weeks of age when rehomed, but a proviso was added that puppies should be appropriately socialised before rehoming.

Section 7: Health

Should a minimum standard be included which states a minimum amount of exercise that a dog should receive per day?

32. A recommendation was put forward by the New Zealand Veterinary Association that a dog should receive 60 minutes out of confinement each day and this recommendation was accepted by the writing group. However, after discussion by NAWAC it was decided that placing a minimum time limit on this in a minimum standard may prove difficult to meet in all scenarios (e.g. animal shelters / kennels). In addition, not all house-kept dogs have access to places where they can run off the lead. More importantly, it was considered that the welfare needs of dogs would be met by the requirement for exercise laid out in the Code, which is that dogs must have sufficient exercise to maintain health and wellbeing. A recommendation for best practice is made that dogs be given 60 minutes but that owners should seek advice for their particular dog and circumstances.
33. In response to concerns raised by two lobby groups that aim to prevent the chaining of dogs, the link between mental health and exercise was clarified in the section relating to containment and tethering and the section relating to exercise. The Minimum Standard was not altered as the issue of placing a time limit on confinement had already been considered and a decision made, as discussed in the previous paragraph.

Section 7.11.2: Removal of Dew Claws

Should it be recommended that dew claws are removed from a dog?

34. These claws are often removed in working dogs due to the potential for them to become caught and torn off as an adult, resulting in pain. The extent to which a dew claw may be problematic can depend on the nature of the claws as they can be highly

variable across dogs of different breeds. They are often more loosely attached on the hind limbs than on the fore limbs, making the claws on the hind limbs more susceptible to injury.

35. One of the main issues to be addressed in relation to removal of dew claws is that the procedure is generally performed when the pup is 3-5 days of age. Transporting the pup to the veterinary surgery at this age is disturbing for the pup and the dam. An alternative technique could be that dew claw removal is performed at the same time as neutering (in an older dog while under anaesthetic). Dew claw removal is currently performed as a matter of course by some dog breeders themselves. The Subcommittee considers that it is unacceptable for this procedure to be conducted without any regulation at all, owing to the potential for complications arising during and after the procedure (e.g. pain, infection, blood loss). However, it would also be inconsistent to allow another procedure with the potential to cause pain (tail banding) and not allow dew claw removal. Hence, it was determined that dew claw removal could be allowed, as long as puppies were of sufficient immaturity so that pain from cutting was minimised or avoided (as for the arguments relating to tail docking, below).

Section 7.11.3: Tail Docking

36. The questions and issues that arose around tail docking were:
- Why is tail docking performed?
 - What is the utilitarian view on the ethics of tail docking?
 - Do banding and surgical tail docking differ in the amount of pain that they cause the pup?
 - Does tail docking cause chronic pain?
 - Does tail docking have any other long term/persistent effects?
 - Is there any scientific literature discussing the effects of tail docking in other species?
 - How is the development of the nervous system in neonatal pups likely to affect the amount of pain that the pups experience?
 - Can pups actually perceive pain when they are in a neonatal state?
 - What are the opinions of veterinary surgeons in relation to tail docking?
 - Would banning tail docking result in an increase in tail injury?
 - Have any studies been performed to examine the incidence of tail injury in non-docked dogs?
 - Why dock puppies? Why can't tail injuries be treated if and when they occur in the adult dog?
 - Are there any other additional reasons for performing tail docking of dogs?
 - What is the position on tail docking in other countries?
 - Are there any alternatives to tail docking that do not require surgical intervention?
 - Would there be any issues in relation to enforcement of a ban on tail docking (including the implementation of a Quality Assurance scheme)?
37. NAWAC considered these issues and concluded that there was no available evidence to suggest that tail banding of puppies according to current recommended best practice (banding within 72 hours of birth is recommended by the New Zealand Kennel Club) caused pain or distress to puppies. In the absence of such information, and in order to limit the possibility of puppies experiencing any pain or distress, NAWAC has proposed in the Code that if dogs are to be tail-docked for non-therapeutic reasons, it

must be done by knowledgeable, trained and competent persons in puppies using elastic bands before puppies are four days of age and acting under a documented quality assurance scheme that assures compliance with this Minimum Standard. Veterinarians may remove or shorten tails to treat injury or disease.

Why is tail docking performed?

38. Tail docking was originally performed to enable owners of working dogs to receive a reduction on tax payments. The tradition of docking has continued until the present day for the reasons described below.
39. Tail docking can be described as either 1) therapeutic docking; which is carried out under anaesthesia to correct or repair an injury; 2) or non-therapeutic (sometimes called cosmetic) docking, which is a procedure performed so that the dog conforms to a breed standard; or 3) preventative/prophylactic docking; some working breeds are docked as a precautionary measure based on the idea that the dog may damage its tail when working as an adult dog.
40. Docking is commonly performed on specific breeds of dog to shorten the tail. Varying amounts of the tail may be removed during this process, some removing the tip end of the tail only whereas other procedures may remove a significant portion of the tail, leaving only a small stump. It is generally performed at a very early age in puppies (the New Zealand Kennel Club recommends within 72 hours of birth) using an elastic band (a tight rubber ring/band or string is tied around the tail which is left in place for several days, following which the end of the tail will drop off). Surgical removal can also be performed using sharp scissors or blade, although this does not conform to best practice recommendations made by the New Zealand Kennel Club unless performed by a veterinarian.

What is the utilitarian view on the ethics of tail docking?

41. The issue of tail docking in domestic dogs is complex involving economic, aesthetic, welfare and moral considerations. It was decided by NAWAC that they would use a utilitarian approach to any decision about tail docking. Utilitarian actions are based broadly on the notion of doing the most good while causing the least amount of harm, so that decisions to act in particular ways are facilitated by conducting harm-benefit analyses. Note that a decision to take a particular action is not robust ethically in Utilitarian terms if the benefits are merely greater than the harms. In the case of tail docking, the harms must be minimised and all the benefits must be maximised so that the separation between the harms and benefits is the greatest that can be feasibly achieved.
42. Accordingly there were two questions to be addressed in relation to the performance of tail docking in dogs. 1) Do the act of tail docking and the absence of a tail cause greater harms to the animals (individuals and groups) than they prevent and 2) Are there indirect benefits (e.g. commercial, educational, recreational, scientific, social) which are sufficiently compelling to offset the harms done by the procedure itself and the associated anatomical modification to individuals or groups?
43. When considering surgical or other modification of an animal's anatomical structures a number of ethical issues need to be addressed together with the related scientific and technical matters. The ethical considerations in relation to tail docking were considerations in relation to the necessity to make the anatomical modification (removal of the tail) and the potential and actual harms caused by performance of the anatomical modification.

Do banding and surgical tail docking differ in the amount of pain that they cause the pup?

44. It was noted from submissions received upon release of the draft Code of Welfare that there seems to be a general preference in the dog breeding community for the use of the ‘banding’ method rather than surgical docking of the tail but at the present time. Banding is also recognised as best practice by the New Zealand Kennel Club. There is no published data on the physiological effects of either method for dogs (although an unpublished study is described below), but there is work in other species that may be applicable to dogs (see ‘*Is there any scientific literature discussing the effects of tail docking in other species?*’ below).
45. There was also a comment on NAWAC that the application of a band to puppies’ tails could cause the bitch to overgroom or attempt to remove the tail band or the dead tail tip, with more damage caused to the tail and worse consequences for the welfare of the puppies than if tails are surgically removed using appropriate pain relief.
46. On balance, as discussed further below, NAWAC considers that tail banding can be conducted according to the requirements of this Code while surgical tail docking needs to be conducted by a veterinarian using appropriate pain relief.
47. Since both methods to dock tails are used at the present time, the potential effects of performing both are discussed within this document.

Does tail docking cause acute pain?

48. The tail is a complex anatomical structure which is formed from 15-20 coccygeal vertebrae which is strengthened by ligaments and controlled by a complex arrangement of muscles and tendons enabling limited movement in all directions. The tail is highly innervated and blood supply is provided by a network of veins and arteries. The process of removing the tail could cause:
 - Inflammatory pain following docking
 - Infection following docking
 - Compartment syndrome
49. Inflammatory pain following docking
The swelling of tissue is a normal inflammatory response to injury and the pressure from the swelling will contribute to the pain experienced. In the adult dog, the pain can be relieved using anti-inflammatory agents. However, it is not advisable that anti-inflammatory drugs are used in young pups due to the potential risk of kidney damage at this age. There is therefore no effective therapy to manage inflammatory pain resulting from tail docking of pups.
50. Infection following docking
Improper docking can lead to infection and necrosis of the tail stump (Morton, 1992). In most cases, these reactions are caused by use of an incorrect docking technique or occur as a result of failure of the pup’s natural immunological function. Cases of infection have occurred most commonly in neonatal animals due to the relatively long extent that the spinal cord extends down the vertebral column, facilitating spread of the infection to the central nervous system (Morton, 1992).
51. Compartment syndrome
Compartment syndrome is a medically recognized problem which occurs in humans in response to a significant amount of pressure being placed on specific parts of the body, which causes an increase in pressure at the site, resulting in bleeding and swelling of the muscles within the fascial compartments (Steiss et al., 1999). This causes vessels within the tissue to become compressed, the flow of nutrient blood to decrease (ischemia) and the eventual death of the tissues within the compartment. This process is very painful and can be replicated in adult dogs (Ricci et al., 1990) but the extent to which it might occur with tail docking of neonates is unknown.

52. Behaviour following surgical docking
Examination of the behavioural responses of puppies when banded can also give an indication of their psychological state. In the only known published study examining the acute effects of docking, all puppies vocalized intensely at the time of amputation of the tail by surgical docking (Noonan et al., 1996a). These vocalisations were classified by the researchers as ‘shrieks’. The vocalisations decreased following amputation of the tail and changed to vocalizations that were classed as ‘whimpers’. The ‘shrieks’ reoccurred again as the suture was being put in place. It was also noted that the more ‘shrieking’ vocalizations that the pup made during docking, the longer the pup took to settle in the longer the time before the pup ceased whimpering following docking. It was suggested that these vocalizations may indicate pain (Noonan et al., 1996a). In addition, all pups exhibited an ‘escape response’ (continual movements) in the period immediately following docking, at least briefly.
53. It has been noted that pups will often suckle or sleep soon after being docked. However, the cessation of vocal and physical reactions in some puppies soon after docking is not definitive evidence that pain has subsided as many animals tend to be more stoic than humans due to an inherent preservation instinct (Tranquilli and Raffe, 1989). They may therefore remain quiet when in fact, they are experiencing significant pain. In addition, some authors have suggested that the fact that pups suckle or sleep very soon after being docked may have an evolutionary purpose and may act as a displacement activity or conserve energy at a time of injury. It is also possible that puppies suckle to reduce the pain, as it is known that the act of suckling stimulates the release of endogenous opioids (endorphins) that produce analgesia (Bennett and Perini, 2003a).
54. A review by Gregory (1999) summarised opinions on dog tail docking, opinions on pain caused by the performance of this procedure and other complications caused by surgical tail docking (immediate and long-term), the reasons put forward for tail docking (reduction in faecal soiling and maggot infestation, appearance, reduction in tail injury) and the ethics of tail docking (should dogs be subject to a potentially painful procedure that may or may not have some future benefit or that is conducted for appearance reasons?). He concluded that there remains disagreement over the ethics, whether or not the procedure causes pain, and whether there are long-term complications and, if so, what they might be. This continues to be the case 10 years on. Gregory recommended that if tail docking was allowed to continue in New Zealand, research effort should be directed at whether analgesics could be used to minimise the pain of the procedure, whether there is post-operative pain, identification of those breeds for which tail docking is warranted on the grounds of tail injury and soiling, identification and assessment of the risks to social signalling caused by tail removal, and understanding whether complications with urination and defecation are relevant. NAWAC supports these recommendations for future research and will be seeking ways of ensuring that appropriate research is undertaken prior to the review of the Code.
55. A paper by Hales and Robertson (unpublished) showed no differences in behaviour exhibited by pups undergoing docking by banding, and control pups. In addition, no differences in cortisol levels were observed between the two experimental groups. However this might be a consequence of the experimental design which had insufficient power to detect anything but extreme differences between the banded pups and control handled pups as a consequence of the variability of cortisol responses and the low numbers of experimental animals. The authors also reported on the dog breeders’ behavioural observations that there were no discernable changes in vocalization, movements or feeding behaviour during the process of banding.
56. Haemorrhage is an additional unwanted side effect of docking but applies to surgical docking only. Bleeding following docking may become uncontrollable in lines which carry a blood clotting defect and in some cases this has led to the death of animals.

Does tail docking cause chronic pain?

57. The process of removing the tail using surgical removal or banding could cause the following potential chronic effects: phantom limb pain and causalgia, pain associated with neuromas (abnormal bundles of nerves and connective tissue), haemorrhage and increased sensitivity of the nervous system to pain.
58. The development of phantom limb pain and causalgia are not uncommon following limb amputation in humans. It is not known if phantom limb pain occurs in dogs following docking of the tail and, in fact, diagnosis of this condition may prove difficult to ascertain due to the dogs' natural stoicism which may mask any indicators of this condition occurring (Wansborough, 1996).
59. Neuromas (or neuromata) are known to form when nerve outgrowths turn back on themselves to form enlarged knots of nervous and connective tissue. They occur in 50% of humans who have had a limb amputated and are characterized by a short sticking pain which is triggered by touch or movement (Jensen et al., 1983). Neuromas have been shown to form in dogs that have been mutilating their own tail stumps (Gross and Carr, 1990) and the presence of these growths can cause the tail stump to become extremely sensitive, with mild pressure to the tail eliciting a severe pain response (Gross and Carr, 1990). The prevalence of neuroma development following tail docking is unknown but occurrence of self mutilation of the tail stump has been reported, and this must be considered as a potential risk following the procedure.
60. Increased sensitivity of the nervous system to pain is also a potential problem. The nervous system is still developing in puppies and so there is a high degree of brain plasticity at this stage. Painful experiences during this period of development may affect the final 'wiring' of the adult pain system which will influence the adult animal's sensitivity to pain.
61. Regardless of whether animals consciously perceive docking as a painful experience, it will nevertheless stimulate pain receptors and will elicit impulse barrages in those nerve fibres that have developed at the time, which in turn will lead to physiological responses (e.g. stress hormone release). Recent evidence suggests that exposure to noxious stimulation and stress during the early postnatal period can lead to changes in pain thresholds and an increased vulnerability to stress disorders and anxiety-related behaviours in later life (Taddio et al., 1997; Anand et al., 1999; Lin and Al-Chaer 2003; Page et al., 2005; Sternberg et al., 2005). This appears to be so, at least regarding pain thresholds, for animals in which neurological maturation at birth is not fully complete, such as the newborn rat and mouse, as well as the somewhat more mature human infant (pre- and full term). The possible neurophysiological changes which may occur in response to tail banding in dog puppies could therefore impact on the future welfare of the animal.

Does tail docking have any other long term/persistent effects?

62. Elimination: There is evidence that docked breeds are more likely to develop urinary incontinence than other breeds (Holt and Thrushfield, 1993) but these authors were unable to establish whether this effect was due to breed predisposition or the docking. It is possible that the docking procedure could have adverse effects on the urethral nerve supply or damage the efficiency of the muscles surrounding and controlling the sphincter mechanism or pelvic floor muscles (Holt and Thrushfield, 1993). This would reduce the dog's ability to control its bladder emptying; however, it is also relevant to note that common causes of urinary incontinence are reduced oestrogen production (e.g. spayed, elderly bitches) and obesity, and so docking may not be the primary cause of this problem (Moreau and Lees, 1995). There is also evidence that the movement of the tail is an important factor in the process of elimination and evacuation of faecal material (Wansbrough, 1996). Tail movement is controlled by muscles at the base of the tail and removal of the tail of an immature puppy may result in the muscles of the tail and pelvis not reaching their full potential, which may result in faecal incontinence in the adult dog.

63. Communication and social behaviour: Posture, often in conjunction with vocalization, is a means by which many species, including dogs and humans, demonstrate their individual and collective attitudes and relationships. Dogs displaying an erect posture and raised slowly wagging tail, often accompanied with low growls, are trying to intimidate others by portraying themselves as large and powerful, thereby establishing a dominance over other dogs or similarly, to warn off other approaching/encroaching animals, including humans. Such physical display may change to one of submission in which the tail is lowered and curves low between the hind legs with rapid wagging, to normal acceptance of equals with rapid tail wagging (Darwin, 1872/1965; Lindsay, 2000). Thus a dog with a tail is able to express its emotional state, assertion of social status, acceptance of a subordinate or equal position, or willingness to fight and it has been suggested that the absence of a tail may, in some instances, predispose a dog to unwarranted aggression (Wansborough, 1996).
64. Coloured tips on the tails of some breeds make such physical signals easier to read between both individuals and social packs but in all cases, the tail is a very important indicator of the agonistic mood of the dog(s) concerned and is easily seen from some distance away (Lorenz, 1952). The loss of the use of the tail to signal, to some extent, might be compensated for by other signals, but the tail is often the most obvious indicator of a dog's intent. Loss of the tail could also cause a loss of ability for efficient communication between dog and human, which may be of a particular concern when a dog is interacting with young children.
65. The process of tail docking is usually performed prior to the main period of socialization in puppies, where a pup will be learning how to interact with conspecifics and establishing its own status within its 'pack'. Loss of the tail at this stage, prior to undergoing this period of socialization, may result in chronic problems being experienced when communicating with conspecifics.
66. Balance: There is limited evidence of whether docking of a dog's tail has an effect on a its balance or coordination however some authors have stated that the tail in a dog is used as a counter-balance in various locomotory activities. The tail muscles not only support the muscles of the croup and hind quarters generally, but also stabilise the longer length of the vertebral column (Wansborough, 1996) acting to aid balance when performing turns. There is some evidence to show that the addition of weight to a dog's pelvic girdle will effect the individual braking or propulsion motion of each limb during trotting (Lee et al., 2004), and so presumably, if this were the case, the removal of a tail would also effect this motion. However, this study observed this effect at weights in excess of those that would be expected of a dog's tail. Additional information in the scientific literature on this aspect of tail docking is limited.

Is there any scientific literature discussing the effects of tail docking in other species?

67. Due to the ethical constraints of performing research to examine pain in animals, studies that examine the magnitude and duration of pain associated with tail docking are limited. The majority of the available research examines the effects of tail docking in production animals docked for various health reasons as part of usual husbandry practice. Knowledge relating to the pain effects of docking in dogs can, to some degree, be obtained from examination of the available literature pertaining to other animal species although it needs to be noted that the neonatal dog is relatively immature compared to lambs and calves where the nervous system is at a more advanced stage of development at birth. The age of the animal when docking and the rate of development of the nervous system in each species may influence the physical and behavioural responses of an animal to docking to some degree (see section below), nevertheless, valuable information can still be obtained by examining the effects of docking in other species.
68. The examination of physiological and behavioural indices during tail docking in production species have shown that docking of lambs produces an increase in cortisol (Lester et al., 1991; Mellor and Stafford, 2000). An increase in cortisol levels has been reported in ewes following the application of rubber rings (Shutt et al., 1988; Mellor

and Murray, 1989) but not in pre-weaned calves (Schreiner and Ruegg, 2002). Surgical docking induced a greater increase in cortisol in lambs than docking using a ring. Docking using a ring elicited a similar response to control handling in 4-8 week old lambs, but in younger lambs the response to application of the ring was greater than the response to control handling (Lester et al., 1991; Mellor and Stafford, 2000). Docking using the rings was also shown to induce behavioural signs of restlessness in cattle (Petrie, 1996; Shutt et al, 1988; Schreiner and Ruegg, 2002) and indicators of distress in lambs (Lester et al., 1996) suggesting that docking using this method is not completely painless.

69. A recent article by Diesch and colleagues (2009) reported that rat pups, which are undeveloped at birth – similar to puppies, are not likely to perceive pain at 5-7 days of age and younger. This was based on observations of rat pups having their tails clamped while under light anaesthesia, and reviews of existing literature. This is discussed in more detail below.
70. Chronic effects, including pain, infection, presence of neuromas and irregular innervation have also been noted in lambs, pigs and cattle that have been tail docked. This suggests that chronic pain and/or increased sensitivity is likely to be present for some time following completion of the procedure (Barnett et al., 1999; French and Morgan, 1992; Petrie, 1994; Simonsen et al., 1991). Neuromas have also been observed to occur in poultry following beak trimming (partial beak amputation) (Gentle, 1986).

How is the development of the nervous system in neonatal pups likely to affect the amount of pain that the pups experience?

71. In response to a noxious stimulus applied to the skin of a fully developed adult animal, pain sensors (nociceptors) in the skin will be activated which will generate nerve impulses. The impulses will then be sent to the central nervous system and the cerebral cortex of the brain, where in an adult dog they would be perceived as pain. In general, the greater the stimulus, the more pain is felt.
72. It has been shown, however, that the nervous system of a pup will not be fully developed at birth (Diesch et al., 2007). Dogs are born in an ‘immature’ state (similar to rats) and complete their neural development as a neonate, during the first weeks of their life (see Diesch et al., 2007 and below). If pups are docked during this period when their nervous system is still developing, any sensation of pain that pups experience in response to tail docking will depend on their ability to experience and perceive pain at this age. There are a number of opposing views in relation to how the development of the nervous system will affect the pain experienced by the pup. These are summarised below:
73. **Opinion 1.** Docking performed at 2-4 days of age is not a painful experience because the pup is still in a neonatal state and the nervous system is not yet developed to the stage where the brain can experience ‘pain’. This is a common argument by those that perform tail docking without pain relief state (see ‘*Can pups actually perceive pain when they are in a neonatal state?*’ below.) Moreover, at this age the nerves involved in pain transmission and perception are not yet fully myelinated due to the incomplete development of the nervous system so the pain/distress experienced upon docking by a neonatal pup of this age will be reduced (Katz, 1977).
74. **Opinion 2.** Docking performed at 2-4 days of age is associated with a delayed pain experience of similar intensity to docking when nerve myelination is complete. This opinion is based on a view that the incomplete myelination of nerves will, in fact, only lessen the conduction speed of the impulse, therefore slightly reducing the amount of time it takes for the impulses to reach the brain (Wolf, 1999; Fogle, 1990). The incomplete myelination will not affect the final magnitude of the pain response, which will remain identical to that of fully myelinated nerves. The pain sensation will simply be perceived slightly later (by fractions of a second).

75. **Opinion 3.** Docking performed at 2-4 days of age is associated with a greater pain experience because the inhibitory nerve pathways (which would act to reduce the amount of pain experienced by the pup through inhibitory mechanisms) are incompletely myelinated in early puppyhood, thereby preventing pain inhibition. It is stated that this would therefore increase the severity of pain that a young pup would experience when compared with that experienced by the adult dog (Morton, 1992, AVA, 1998).
76. To add further evidence to this theory that pain perception is increased in pups, Morton (1992) also stated that, in animals with tails, the spinal cord extends further down the vertebral column in infants than it does in adults, potentially increasing the amount of pain and predisposition to infection of the tail stump following docking. There is also research evidence that the density of the nociceptor nerve endings in the newborn animal may equal or be higher than that of an adult animal (Anand and Carr, 1989) which may potentially amplify the amount of pain that the pup perceives.

Can pups actually perceive pain when they are in a neonatal state?

77. There is debate in the scientific literature as to how the stage of development of a neonatal pup affects the signals that are actually perceived in its brain. As both dog puppies and rat pups are born neurologically immature (altricial), dog puppies could be expected to respond in a similar fashion to tail banding as do rat pups.
78. A recent study by Diesch et al. (2009) investigated the electroencephalographic (EEG) responses to tail banding in rats pups. In the youngest pups (5-7 days) no responses to clamping were observed (isoelectric EEG), while rat pups of the other age groups (12-14 days and 21-22 days) showed significant responses to banding.
79. Diesch et al. (2009) suggest that it is not likely for animals to be conscious before EEG differentiation into rapid eye movement (REM) sleep and non-rapid eye movement (non-REM) sleep due to the structural links between neuronal centres which generate REM-non-REM sleep cycles and conscious perception (i.e. critical corticothalamic connections). In rat pups EEG differentiation into REM-non-REM sleep occurs around 10-12 days after birth and is complete by about 18 days, at which time sleep-wake cycles are well established. The results reported by Diesch et al. (2009) are consistent with this. They thus conclude that in rat pups younger than 10-12 days conscious perception and consequent perception of pain is doubtful and that pain experience is only possible thereafter.
80. Prior to this, activation of physiological body stress responses may be induced by activation of the lower brain centres via pain pathways (Lee et al., 2005; Mellor et al., 2005; Mellor and Diesch, 2007) but these responses do not necessarily require the involvement of the cerebral cortex or conscious awareness. Therefore, although pain impulses reach the brain and the body reacts to the pain both behaviourally (e.g. withdrawal of body parts, vocalizations), and physiologically (changes in heart and breathing rate and secretion of stress-related hormones such as cortisol and adrenaline), the nervous system is not yet developed to the point where the pup has 'conscious awareness' and the pup will therefore be unable to perceive and have conscious experience of any pain signals that are relayed to the brain. The developmental stage at which animals are able to experience pain therefore depends on the point at which they become consciously aware.
81. Unfortunately, there is limited data available on the development of the EEG and EEG differentiation into REM-non-REM sleep cycles (and therefore the possibility for conscious perception) in dogs. In addition, discrepancies in available data are present and are likely related to dog breed and associated differences in neurological maturity at birth. EEG differentiation apparently occurs between 4-14 days after birth depending on breed (Ellingson and Rose, 1970; Mellor et al., 2009). Thus, tail banding in puppies may not lead to the perception of pain if it were done before 4-14 days depending on breed, i.e. before REM-non-REM differentiation and the associated neurological development (Mellor et al., 2009).

82. Clancy et al. (2001) uses a regression model to predict the timing of neural development across species and has presented data comparing the postnatal rate of neural development of the cat (which is assumed to have a rate of development similar to that in a dog) with that of the rat. When considered with the findings of Diesch et al. (2009) that rats do not have conscious perception of pain until 12-18 days of age, the model prediction is that a cat (or dog) would be aged 12.7 days of age before it would experience conscious pain. Since banding/docking is usually performed when the pup is no older than 5 days of age, this would suggest that pups do not feel pain when docked/banded at this age.

What are the opinions of veterinary surgeons in relation to tail docking?

83. A survey conducted in Australia in 1996 found that 76% of veterinarians believed that tail docking causes significant pain and no veterinarians believed that no pain is experienced by the pups during the process. In contrast, 82% of dog breeders believed that docked puppies experience no, or only mild pain (Noonan et al., 1996b). The varying methods of docking used by veterinarians and breeders may have influenced the results obtained as all the veterinarians interviewed carried out surgical docking, whereas 16% of breeders docked using banding. Nevertheless the varying opinion cannot be completely attributed to differences in methodology used and the factors leading to this variation have been discussed by other authors (Bennett and Perini, 2003b).
84. The New Zealand Veterinary Association has a policy that veterinarians do not remove dog tails for non-therapeutic reasons. This is on the grounds that surgical alteration to the natural state should only be conducted where it is in the best interests of the animal or has some management function. When the Code was released for public consultation, it contained a proposed minimum standard that tail docking only be conducted by veterinarians. Because tail docking is against New Zealand Veterinary Association policy, an approach to a veterinarian by a puppy owner or breeder would likely result in refusal. Hence such a proposal constituted an effective ban on tail docking. The minimum standard was since modified to manage animal welfare risks through placing conditions on the technique, age of the puppy and the person conducting the docking.

Would banning tail docking result in an increase in tail injury?

85. One of the major arguments put forward in support of the performance of tail docking is removal of the tail for prophylactic reasons, to prevent tail injury occurring as an adult during the performance of activities such as hunting. Docking for prophylactic reasons is clearly effective in that docked dogs cannot sustain injuries to the part of their tails that has been amputated. As would be expected, reports of dogs being admitted to veterinary surgery for tail injuries in countries that have banned tail docking, have increased (Strejffert, 1992) and injuries included bleeding and damaged tail tips, infected and inflamed tails, and broken tails. It has been shown that injuries were more common and severe in male dogs, lively dogs and the number and severity of injuries increases with the amount that the dog was used (in particular, those used in thick bush) (Strejffert, 1992).
86. However, this argument should be placed in context, since hunting induces a whole variety of health problems, trauma being just one of them and hunting can cause a large variety of other injuries to the dog (haematomas, scratches, wounds, fractures; reviewed by Lefebvre et al., 2007). Injuries sustained by hunting dogs were mainly due to interactions with other animals and seldom caused by the terrain (Lefebvre et al., 2007). When the terrain did result in injury, they were primarily located on the pads of the dog's paws, or on the body as scratches. Ear and tail injuries are uncommon (reviewed in Lefebvre et al., 2007).
87. The need for prophylactic tail docking for this reason may therefore be exaggerated. Firstly, not all gun/working dogs require docking, as true working dogs represent only

a small proportion of the total number of dogs docked and reports of tail injuries in those with intact tails are rare. In addition, some breeds of working dogs are docked, whereas other breeds that work in similarly rough terrain are not docked (Moreton, 1992; DEFRA, 2002). In addition, for almost all breeds that are traditionally docked (e.g. English pointers and German short haired pointers), a corresponding breed can be found that engages in similar activities but has traditionally not been docked (Morton, 1992). In addition, working dogs in New Zealand used for animal herding (huntaways, collies etc) or for the police force are not docked.

88. Undocked dogs that are used in outdoor activities such as hunting may experience 'limber tail' (water tail, tail colds) under some conditions. Limber tail occurs when a dog suffers from a painful tail after having been immersed in cold water (Steiss, 1999). It is thought to be a form of compartment syndrome and can occur as a result of overexertion of the muscles at the base of the tail, resulting in a decreased blood flow and ischaemia. The tail usually recovers completely following rest (several days to weeks), but can continue to be painful during this time. However, this condition is more commonly seen in dogs that have not been conditioned to perform the intensity of work that they are asked to perform, have been exposed to wet and cold conditions or were judged as being physically unfit having been confined to a crate for long periods of time before working. Simple preventative measures can therefore be taken to lessen the chances of this condition occurring.

Have any studies been performed to examine the incidence of tail injury in non-docked dogs?

89. It would be reasonable to assume that dogs that do not work but are kept as pets/companions in domestic/urban circumstances would have a similar risk of sustaining a tail injury as other breeds of dogs that are not routinely docked. We currently have no valid statistics of the number of dogs used in situations that carry a high risk of tail damage or of the severity of tail injuries sustained by these dogs in New Zealand circumstances.
90. Of the available studies focusing on this area, one published by Darke et al. (1985) shows that, of 12,129 recorded cases at a veterinary clinic in Edinburgh, only 47 cases were attending due to tail injuries and there was no statistically significant correlation between tail damage and undocked tails. Similar reports of a low incidence of tail injury have also been reported in Australia where only 3 of 2000 dogs attending an animal emergency clinic were attending due to tail damage. A review of tail docking in the UK in 2002 by the DEFRA Animal Welfare Veterinary Team in relation to its value in preventing injury stated that basic first aid would treat most of the cases of tail injury reported.
91. One study, performed in Sweden in 1990 (Streffert, 1992), examined the incidence of tail injury in German Short-haired Pointers. This study was performed in response to the Swedish ban on tail docking and was carried out by the Swedish Breed Council. This study reported that by the age of 2-2.5 years of age, 35% of dogs had been subject of some form of tail injury. However, NAWAC considered that it should be noted that this study, by way of its design and the purpose for which it was performed, may have been influenced by the preference to obtain a specific result.
92. It has, in fact, been shown that the majority of tail injuries reported are sustained by pups and have resulted either from infection or bleeding following tail docking (Wansbrough, 1996). Anecdotal evidence obtained from New Zealand veterinarians supports the relative infrequency of canine tail injury. In fact, veterinarians state that they see many more tail injuries of cats, than dogs (submission made to MAF in response to the public release of the dog code of welfare). This would suggest that tail docking cannot be recommended as a prophylactic procedure against tail injuries, but further studies are required to confirm this.
93. Even if it were found that traditionally docked breeds do sustain tail damage as a result of not being docked as pups, then consideration must be given to the relative amount

of pain inflicted as a pup compared with the amount of pain experienced as an adult if an injury is sustained. In addition, factors such as the degree of both acute and chronic pain should also be considered when quantifying the amount of pain experienced in either scenario. It may be proven that some dogs may in fact be more prone to tail damage due to their occupation, or due to the structure of their tail, and tail docking may prevent substantial pain as an adult dog. However, this has not been proven, and so the reverse scenario could in fact be equally correct.

Why dock puppies? Why can't tail injuries be treated if and when they occur in the adult dog?

94. It has been stated that damage of the tail in adulthood, when it occurs, causes significant pain and can be problematic and expensive to treat (Mercer, 1992), sometimes resulting in repeated amputations of the tail and tail stump during treatment if healing is delayed. In a scenario such as this, there is the potential that the owner may be unwilling to pay for this treatment and the dog will therefore be euthanased. Some working gundogs which have had to have their tails amputated as adults due to sustaining tail damage have been reported to mutilate their tail stump following the amputation (Peek, 1995).

Are there any other additional reasons for performing tail docking of dogs?

95. Docking to maintain breed standards: Dogs may be docked to conform with tradition, or, depending on the breed, to meet the requirements for breed standards. In some cases, docking is performed to standardize puppies from a litter in which the pups are born with tails of varying length.
96. Docking for economic/cosmetic reasons: Some dog breeders dock their dogs to meet aesthetic criteria as they believe that the general public do not wish to acquire a dog with a tail (in breeds that have been traditionally docked). They will therefore dock the entire litter to ensure that all dogs will be sold. Docking for cosmetic reasons cannot be ethically justified (Bennett and Perini, 2003b). Breeders will argue that it is their 'right to choose' whether to dock or not. The New Zealand Veterinary Association however, will argue that the pup has no choice in the decision.
97. Docking for convenience: Tail docking is sometimes performed for convenience with the aim of reducing breakage of ornaments and crockery on low shelves or tables indoors due to tail-wagging, or to prevent the whipping of dog's tails harming small children (Bennett and Perini, 2003a; Morton, 1992). Some sources have stated that dogs have ended up being restricted to the outdoors due to the damage that they caused with their tail within the household. However, tail docking for the purpose of domestic convenience can be avoided simply by changing the location of breakable objects, by restricting the dogs' access to particular rooms, choosing a house that will easily accommodate a dog with a tail or by choosing a more appropriate breed.
98. Docking and hygiene: A number of owners have stated that their long haired dog breeds suffer from soiling around the perineal area and that the removal of the tail is effective in reducing a build up of faecal matter. However, whether dogs are kept as domestic pets or gun/working dogs, owners/carers have easy daily access to their dog. Effective management of hygiene by straightforward non-invasive grooming and/or hair clipping can avoid this problem occurring in longhaired breeds that have a tendency to exhibit this problem.
99. Docking to allow for physical adaptation: In addition, the New Zealand Council of Docked Breeds have stated that generations of dogs have been docked and have therefore now physically adapted to existing without a tail. They state that the addition of a tail to specific breeds at this stage would cause problems, such as hip dysplasia, due to the additional weight placing 'unnatural' forces on the dog's limbs (Lee et al., 2004).

100. Docking for health and welfare: Docking for health and welfare involves amputation of injured, malformed or diseased tails for therapeutic purposes. Such docking is effective when required and achieves direct welfare benefit to affected animals. It is not the intention of the Code to prohibit tail docking for valid veterinary medical purposes.

What is the position on tail docking in other countries?

101. An increasing number of countries are placing restrictions on canine tail docking for cosmetic purposes including Australia, Sweden, Norway, the Netherlands, Finland, Germany and Denmark. Several other European countries including Cyprus, Greece, Luxembourg, Switzerland, and Austria have also ratified a European convention that prohibits the cosmetic docking of tails. A ban on tail docking was passed in parliament in the UK in 2007 but the extent of the ban differs within the UK with England, Wales and Scotland placing differing restrictions on docking. Scotland has totally banned tail docking of all dogs whereas England and Wales allow docking of genuine working dogs (where proof of the dogs' potential to work must be produced prior to docking). Although the docking procedure is the same in England and Wales, the list of breeds of dogs that are allowed to be docked in the two countries are different.
102. Information received from David Pritchard at DEFRA and David Morton of the University of Birmingham, both of whom were involved in progressing the legislation through parliament in the UK, state that, due to the limited availability of literature on this issue, the legislation in the UK was primarily passed on ethical reasons. The differing stances taken by each country within the UK on which dogs are given exemption to the ban (if any) indicates the lack of conclusive evidence and the present subjectivity in relation to the progression of legislation on this issue.
103. The New Zealand Veterinary Association suggests (in a submission made to MAF during public consultation on the dog code of welfare) that it is appropriate that restrictions are enforced in New Zealand. They suggest that the importance of this action is to uphold the reputation of New Zealand as a country that looks after its animals and emphasize the importance of maintaining this perception internationally, especially as New Zealand is highly economically dependent on the export of animal products.

Are there any alternatives to tail docking that do not require surgical intervention?

104. It has been suggested that some of the perceived benefits of docking could be reproduced by methods not requiring pain and suffering. Suggested alternatives include:
- Promoting responsible pet ownership with the aim of, for example, encouraging owners to choose a more appropriate breed of dog for their home, carry out more effective grooming and trimming to avoid fouling, or choosing an appropriate breed of dog (with a thicker/thinner coat) when obtaining a dog to be used for hunting and other sports.
 - Taking steps to change peoples' perceptions of fashion (for the breeds of dogs that routinely have their tails docked) through education.
 - Performing selective breeding in those breeds that already carry a natural bobtail gene (e.g. Pembroke corgis, black bob-tailed dogs and old English sheepdogs) and in 'stump-tailed' dogs that occur spontaneously in many breeds (e.g. fox terriers). Breeders of docked breeds claim that the incidence of tail injuries is greater in dogs with thin 'whippy' tails. At this time, shorter tails have not been a focus of selection in the breeding of the traditionally docked breeds due to a higher emphasis being placed on other genetic traits. However, the art of breeding has always been in selecting multiple factors and, if appreciation is given to the fact that an appropriate time period will be necessary to implement an approach such as this, it could be an avenue that may warrant further consideration. Within generations the attributes of the breeds

possessing thin whippy tails could improve through genetic selection lessening the incidence of injury in future generations

Would there be any issues in relation to enforcement of a ban on tail docking?

105. Some issues were raised in regard to enforcing the legislation to ban or restrict tail docking in a number of countries, as follows.
106. The British Veterinary Association has raised a number of issues in relation to giving an exemption for tail docking to working dogs in the UK. They state that a blanket ban on docking can be regulated and enforced, whereas the introduction of exemptions allows opportunity for a loophole.
107. The UK Animal Welfare Act 2006 make it an offence "to remove the whole or any part of a dogs tail", (except for those exempt under regulations) and so both cutting and banding are both covered by this ban. This ensures that that any loopholes in the legislation are avoided (i.e. using banding to remove the tail) by using this wording, rather than referring to surgical removal of the tail.
108. Some breeds have a recessive gene that results in a naturally bobtailed dog and, in light of the ban, it was stated that some breeders may be aiming to breed for this gene. The problem arises in recognising the dogs that have a naturally short tail and those that have been docked, and therefore ensuring that the ban on docking is enforced accurately.
109. With the aim of solving this problem it has been suggested that evidence of naturally bob tailed breeds could be obtained from vet records, as veterinary advice should have been obtained during the breeding process. Alternatively, it should be ensured that photographic evidence is obtained of the pups at birth to prove that these pups are naturally bob tailed. Concerns were also raised that dogs may be bred for bob tails at the expense of breeding for other physical characteristics, conformation or at the expense of minimising potential problems such as spina bifida.
110. In addition, in relation to enforcing legislation on tail docking, it was also suggested that if a dog legitimately requires tail amputation as an adult, due to having sustained a tail injury, it should receive a veterinary certificate stating that this procedure has been performed. This would enable accurate enforcement of a ban on tail docking.
111. The New Zealand Kennel Club has an accredited dockers panel. The operation of this panel provides a model for similar schemes, should any other representative organisations wish to initiate one. In addition, anyone can become a member of the New Zealand Kennel Club and/or become an accredited docker, providing they meet the requirements. This gave NAWAC confidence to include a minimum standard requiring all persons conducting tail banding to follow a documented quality assurance programme that ensures compliance with the remainder of the minimum standard. Information on quality assurance schemes is provided in the General information in the Code.

Research on tail banding

112. NAWAC, through MAF Biosecurity New Zealand, commissioned research to investigate whether tail removal by banding caused immediate and short-term pain and distress. This research was not undertaken as no suitable tender application was received. It is likely that NAWAC will reconsider the need for research when the Code is reviewed.

Section 8.1 Aids for Behavioural Modification

Should the use of electronic devices to control problem behaviour be allowed?

113. The use of electric collars for behavioural modification has been shown to be successful in that they produce the required results. However, these collars work by producing a fear response in the dog, and do not address the motivation behind the problem behaviour. If used incorrectly they can cause a dog to exhibit chronic abnormal behaviour. Minimum Standard 19 has been included in the code stating that ‘electronic devices should not be used in a way that causes unreasonable or unnecessary pain or distress to the dog’. It is stated within the Recommended Best Practice section that these collars should not be used to control excessive barking in dogs and should not be used on dogs that are unsupervised. It has been recommended that remote collars are not used when the dog is unsupervised due to the potential to cause significant pain and distress upon misuse/malfunction of the device. If a collar is to be used to treat excessive barking (unsupervised), it is recommended that citronella collars are used instead as these are generally regarded as being better for a dog’s welfare.

Should the use of pinch or prong collars be allowed?

114. NAWAC discussed the issue of pinch and prong collars with the New Zealand Kennel Club, following some complaints being made by members of the public about the use of these devices, after the Code had been closed to public submissions. These devices are new to the country and are only used by a very small number of dog owners (if any). They are open to misuse, causing pain and distress, and there are recognised alternatives that do not carry the same risks to animal welfare. NAWAC therefore considered that they should be disallowed by means of a minimum standard, on the grounds that the Animal Welfare Act provides for codes of welfare to address the equipment used in the management or care of animals.

Other issues considered by NAWAC

115. NAWAC has considered how the Code aligns with the Dog Control Act 1996 and with New Zealand Veterinary Association policy on surgical procedures and other devices.

The nature of any significant differences

116. All significant differences of opinion about the Code, or any of its provisions, have been set out above.

Dr Peter O’Hara
Chairman, National Animal Welfare Advisory Committee
30 October 2009

References

- Anand K.J.S., Coskun V., Thirvikraman K.V., Nemeroff CB and Plotsky PM. (1999). Long-term behavioral effects of repetitive pain in neonatal rat pups. *Physiology and Behavior* 66, 627-637
- Anand, K.J.S. and Carr, D.B. (1989). The Neuroanatomy, Neurophysiology and Neurochemistry of Pain, Stress and Analgesia in Newborns and Children. *Paediatric Clinics of North America*, 36, 795-822
- Australian Veterinary Association (AVA) (1998). AVA calls for national ban on tail docking. *Australian Veterinary Journal* 76, 581
- Barnett, J.L., Coleman, G.J., Hemsworth, P.H., Newman, E.A., Fewings-Hall, S. and Zini, C. (1999). Tail docking and beliefs about the practice in the Victorian dairy industry. *Australian Veterinary Journal* 11, 742-747
- Bennett, P.C. and Perini, E. (2003a). Tail docking in dogs: a review of the issues. *Australian Veterinary Journal* 81 (4), 208-218
- Bennett, P.C. and Perini, E. (2003b). Tail docking in dogs: can attitude change be achieved? *Australian Veterinary Journal* 81 (5), 277-282
- Clancy, B., Darlington, R.B. and Finlay, B.L. (2001). Translating developmental time across mammalian species. *Neuroscience* 105 (1), 7-17
- Darke, P.G.G., Thrusfield, M.V. and Aitken, C.G.G. (1985). Association between tail injuries and docking in dogs. *Veterinary Record* 116, 409
- Darwin, C. (1872/1965). *The expression of the emotions in man and animals*. University of Chicago Press (reprint), Chicago
- Diesch, T.J., Mellor, D.J., Johnson, C.B. and Lentle, R.G. (2007). Responsiveness to painful stimuli in anaesthetized newborn and young lambs of varying neurological maturity (wallaby joeys, rat pups and lambs). *Proc 6th World Congress on Alternatives & Animal Use in the Life Sciences*, Tokyo, Japan, August 21-25
- Diesch, T.J., Mellor, D.J., Johnson, C.B. and Lentle, R.G. (2009). Electroencephalographic responses to tail clamping in anaesthetized rat pups. *Laboratory Animals* 43, 224-231.
- Ellingson, R.J. and Rose, G.H. (1970). Ontogenesis of the electroencephalogram. In *Developmental Neurobiology*, ed. Himwich WA, pp. 441-474. Charles C Thomas, Springfield, USA.
- Fogle, B. (1990). *The dogs' mind*. Pelham Books, London
- French, N.P. and Morgan, K.L. (1992). Neuromata in docked lambs' tails. *Research in Veterinary Science*, 52, 389-390
- Gentle, M.J. (1986). Neuroma formation following partial beak amputation (beak trimming) in the chicken. *Research in Veterinary Science*. 41, 383-385
- Gregory, N.G. (1999). Tail docking in dogs – an interpretative review of the literature from 1992-1998. Unpublished Operational Research report, available www.biosecurity.govt.nz/animal-welfare
- Gross, T.L. and Carr, S.H. (1990). Amputation neuroma of docked tails in dogs. *Veterinary Pathology* 27, 61-62
- Hales, J.R. and Robertson, B.F. Autonomic and Behavioural Evidence that Tail Shortening by Banding is not Acutely Distressful to the Canine Newborn. Submitted for review
- Holt, P.E. and Thrusfield, M.V. (1993). Association in bitches between breed, size, neutering and docking, and acquired urinary incontinence due to incompetence of the urethral sphincter mechanism. *The Veterinary Record* 133, 177-180

- Jensen, T.S., Krebs, B., Nielsen, J. and Rasmussen, P. (1983). Phantom limb, phantom pain and stump pain in amputees during the first six months following limb amputation. *Pain* 17, 243-256
- Katz, J. (1977). The question of circumcision. *International Surgery* 62, 490-492
- Lee, D.V., Stakebake, E.F., Walter, R.M. and Carrier, D.R. (2004). Effects of mass distribution on the mechanics of level trotting in dogs. *Journal of Experimental Biology* 207, 1715-1728
- Lee, S.J., Peter Ralston, H.J., Drey, E.A., Partridge, J.C. and Rosen, M.A. (2005). Fetal pain: a systematic multidisciplinary review of the evidence. *Journal of the American Medical Association* 294, 947-954
- Lester, S.J., Mellor, D.J., Ward, R.N. and Holmes, R.J. (1991). Cortisol responses of young lambs to castration and tailing using different methods. *New Zealand Veterinary Journal* 39, 134-138
- Lester, S.J., Mellor, D.J., Holmes, R.J., Ward, R.N. and Stafford, K.J. (1996). Behavioural and cortisol responses of lambs to castration and tailing using different methods. *New Zealand Veterinary Journal* 44, 45-54
- Lefebvre, D., Lips, D. and Giffroy, J.M. (2007). The European convention for the protection of pet animals and tail docking in dogs. *Scientific and Technical Review - Office International des Epizooties* 26 (3), 619-628
- Lin, C. & Al-Chaer, E.D. (2003). Long-term sensitization of primary afferents in adult rats exposed to neonatal colon pain. *Brain Research* 971, 73-82
- Lindsay, S.R. (2000). *Handbook of Applied Dog Behaviour and Training. Vol 1. Adaptation and Learning*. Iowa State University Press, pp12-14
- Lorenz, K. (1952). *King Solomons Ring*. Crowell, New York
- Mellor, D.J., Diesch, T.J., Gunn, A.J. and Bennett, L. (2005). The importance of ‘awareness’ for understanding fetal pain. *Brain Research Reviews* 49, 455-471
- Mellor, D.J. and Diesch, T.J. (2007). Birth and hatching: key events in the onset of ‘awareness’ in lambs and chicks. *New Zealand Veterinary Journal* 55, 51-60
- Mellor, D.J. and Murray, L. (1989). Effects of tail docking and castration on behaviour and cortisol concentrations in young lambs. *Research in Veterinary Science* 46, 387-391
- Mellor, D.J., Patterson-Kane, E. and Stafford, K.J. (2009). Integrated perspectives: sleep, developmental stage and animal welfare. In *The Sciences of Animal Welfare*. Wiley-Blackwell Publishing, Oxford, UK.
- Mellor, D.J. and Stafford, K.J. (2000). Acute castration and/or tailing distress and its alleviation in lambs. *New Zealand Veterinary Journal* 48, 33-43
- Mercer, P. (1992). Docking of dogs. *Veterinary Record*, 131, 399
- Moreau, P.M. and Lees, G.E. (1995). Incontinence, enuresis, nocturia, and dysuria. In: S.J. Ettinger and E.C. Feldman. *Textbook of Veterinary Internal Medicine, Diseases of the dog and cat. Volume 1*, 164-169
- Morton, D.B. (1992). Docking of dogs: practical and ethical aspects. *Veterinary Record* 131, 301-306
- Noonan, G.J., Rand, J.S., Blackshaw, J.K. and Priest, J. (1996a). Behavioural observations of puppies undergoing tail docking. *Applied Animal Behaviour Science* 49, 335-342
- Noonan, G.J., Rand, J.S. and Blackshaw, J.K. (1996b). Tail docking in dogs: a sample of attitudes of veterinarians and dog breeders in Queensland. *Australian Veterinary Journal* 73, 86-88
- Page, G.G., Blakely, W.P. & Kim, M. (2005). The impact of early repeated pain experiences on stress responsiveness and emotionality at maturity in rats. *Brain, Behavior, and Immunity* 19, 78-87

- Peek, I.S. (1995). Docking of puppies' tails. *Veterinary Record* 136, 302-303
- Petrie, N.J. (1994). *Assessment of tail docking and disbudding distress and its alleviation in calves*. MSc thesis, Massey University, New Zealand
- Petrie, N.J., Mellor, D.J., Stafford, K.J., Bruce, R.A. and Ward, R.N. (1996). Cortisol responses of calves to two methods of tail docking used with or without local anaesthetic. *New Zealand Veterinary Journal* 44, 4-8
- Ricci, M.A., Corbisiero, R.M., Mohamed, F., Graham, A.M. and Symes, J.F. (1990). Replication of the compartment syndrome in a canine model: experimental evaluation of treatment. *Journal of Investigative Surgery* 3 (2), 129-140
- Schreiner, D.A. and Ruegg, P.L. (2002). Responses to tail docking in calves in heifers. *Journal of Dairy Science* 85 (12), 3287-3296
- Shutt, D.A., Fell, L.R., Connell, R. and Bell, A.K. (1988). Stress responses in lambs docked and castrated surgically or by the application of rubber rings. *Australian Veterinary Journal*, 65, 5-7
- Simonsen, H.B. Klinken, L. and Blindseil, E. (1991). Histopathology of intact and docked pig tails. *British Veterinary Journal* 147, 407-412
- Steiss, J., Braund, K., Wright, J., Lenz, S., Hudson, J., Brawner, W., Hathcock, J., Purohit, R., Bell, L. and Horne, R. (1999). Coccygeal muscle injury in English Pointers (Limber Tail). *Journal of Veterinary Internal Medicine*, 13 (6), 540
- Sternberg, W.F., Scorr, L., Smith, L.D., Ridgway, C.G. and Stout, M. (2005). Long-term effects of neonatal surgery on adulthood pain behavior. *Pain* 113, 347-353
- Strejffert, G. (1992). *Report to the Swedish Breed Council for German Shorthaired Pointers*, Borlange, Sweden
- Taddio, A., Katz, J., Ilersich, A.L. and Koren, G. (1997). Effect of neonatal circumcision on pain response during subsequent routine vaccination. *Lancet* 349, 599-603
- Tranquilli, W.J. and Raffe, M.R. (1989). Understanding pain and analgesic therapy in pets. *Vet. Med.* 84 (7), 680-686
- United Kingdom Department for Environment, Food and Rural Affairs (DEFRA), Animal Welfare Division (2002). Information on dog tail docking provided for the Animal Welfare Division, DEFRA. Available at: <http://www.defra.gov.uk/animalh/welfare/domestic/awbillconsulttaildocking.pdf> (accessed on 25.07.2008)
- Walsh, V. and Worth A. (2008) Early age neutering. Pages 111-122 in *Proceedings of the Companion Animal Society of the New Zealand Veterinary Association*, 2008
- Wansborough, R.K. (1996). Cosmetic tail docking of dogs' tails. *Australian Veterinary Journal* 74 (1), pp 59-63
- Wolf, A.R. (1999). Pain, nociception and the developing infant. *Paediatric Anaesthesia* 9, 7-17