



ANIMAL WELFARE

National Animal Ethics Advisory Committee

Annual Report 1 January to 31 December 2011

(incorporating statistics collected by MPI under the
Animal Welfare (Records and Statistics) Regulations 1999)

National Animal Ethics Advisory Committee
C/o Ministry for Primary Industries
PO Box 2526
Wellington 6140
New Zealand

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September 2012

NAEAC

National Animal Ethics Advisory Committee

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Mission Statement

“To provide independent, high quality advice and recommendations to the Minister of Agriculture (now the Minister for Primary Industries), the Director-General of the Ministry of Agriculture and Forestry (now the Director-General for Ministry for Primary Industries) and animal ethics committees on all matters relating to the use of animals in research, testing and teaching.”

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1 From the Chair

The National Animal Ethics Advisory Committee (NAEAC) plays an essential role in ensuring the integrity of the regulatory system governing the use of animals in research, testing and teaching (RTT) in New Zealand. It is a measure of the quality of my fellow members that the system works as well as it does, and I am fortunate to have such dedicated people to work alongside. My thanks go to them for their efforts through 2011.

In particular I'd like to thank Deputy Chair Dave Morgan, who has been a great help to me. I'd also like to thank Peter Mason and David Peart who both retired in October, having given valuable and effective service over their time on the committee. Three new members were appointed during the year. Karen Booth, who came onto the committee in June, has already proven her worth, with her background in the area of veterinary medicines. Robyn Kippenberger and Ian Buchanan were appointed at the end of October and we look forward to working with them.



Most committee members were able to attend the Australian and New Zealand Council for the Care of Animals in Research and Teaching (ANZCCART) Conference in Rotorua this year, and we combined this with a visit to institutions and animal ethics committees (AECs) in the area. This is something NAEAC does annually – it helps committee members get a clearer understanding of how AECs function, as well as the work being undertaken at different institutions. On the other side, it gives researchers and AEC members a chance to meet NAEAC members and ask any questions they may have.

The ANZCCART Conference also provided the opportunity to present the NAEAC Three Rs Award to Dr Siouxie Wiles (see Section 7.1). We are grateful to the Royal New Zealand SPCA for sponsoring this important award.

NAEAC, separately and together with the National Animal Welfare Advisory Committee (NAWAC) has spent considerable time during the year preparing its submission for the review of the Animal Welfare Act 1999. Although in general we feel the Act works well in the regulation of the use of animals in RTT, we have found areas which would benefit from clarification or alteration. My thanks to subcommittee members who have worked on this.

This report contains, as appendices, the Ministry for Primary Industries (MPI) statistics detailing animal use in RTT during 2011. There often appears to be some confusion in the minds of the public as to responsibility for these statistics. Although these have traditionally been published in the NAEAC Annual Report, they are collected by and are the responsibility of MPI. While NAEAC certainly has an interest in what the numbers show and is happy to comment on them, they are not the responsibility of the committee.

A total of 327 674 animals used in RTT were reported in 2011, a 35.3 percent increase over the previous year. However, because many projects take place over a three year period and are only reported at the end of that time, a truer picture of the statistics over time is obtained when we look at the rolling three year average. In 2011, despite the rise in numbers, that rolling average was marginally down.

New Zealand's agricultural focus is once again demonstrated by the relative predominance of production animals, particularly cattle and sheep, in the numbers of animals used in RTT, this species grouping making up 51.6 percent of the total numbers. In contrast, in the United Kingdom, with its much greater emphasis on biomedical research, only three percent of RTT procedures were carried out on non-rodent mammals in 2010, with 73 percent of procedures using mice.

Despite the higher numbers of animals recorded in 2011, the involvement of many of the agricultural animals in lower impact manipulations, such as animal husbandry and veterinary research as well as teaching, is in part responsible for the drop in both the numbers and proportion of animals experiencing “high” or “very high” impact manipulations over the previous year – indeed the lowest number in these two categories since 2006. NAEAC sees part of its role as encouraging where possible the refinement of manipulations to lessen the impact on animal welfare. Committee members understand, however, that in certain circumstances, such impacts are unavoidable, but must only be approved by the appropriate institutional AEC if supported by a strong cost-benefit justification. NAEAC members noted that 625 animals were used in work that specifically addresses the Three Rs by aiming to develop alternatives to animal use.

NAEAC would function much less effectively without the sterling service provided by Linda Carsons and Paula Lemow from MPI Animal Welfare Standards. They are an essential and invaluable part of the team, and I am most grateful for their support.

Virginia Williams
Chair

2 New Zealand Animal Welfare Infrastructure

2.1 The Animal Welfare Act 1999

The use of animals in RTT in New Zealand is tightly regulated through Part 6 of the Animal Welfare Act. The Act requires that any person using animals in RTT holds an approved code of ethical conduct, works for a person who holds an approved code or has an arrangement to use another person's approved code. In this context, the term "person" includes corporations and bodies of persons whether corporate or unincorporated. Section 88 of the Act specifies the contents of a code of ethical conduct.

Crucial to the integrity of the regulatory framework is the role of the AECs in approving, modifying, or declining proposals for RTT involving the use of live animals. No project may be carried out without the approval of an AEC. When considering project applications, an AEC must be satisfied that the benefits that arise from using the animals outweigh the likely harm to the animals.

AECs are also responsible for monitoring compliance with the conditions of project approvals and the animal management practices and facilities of the institution. The Act requires that AECs have at least four members. Three of these must come from outside the organisation and include a veterinarian nominated by the New Zealand Veterinary Association, a nominee from an approved organisation (for example, the SPCA) and a person nominated by a local authority. Sections 98 to 104 of the Act detail the functions and powers of AECs, their procedures and the criteria they must take into account when considering applications. Code holders and AECs have an independent review undertaken within two years of first obtaining approval of a code, again before their code expires and every five years thereafter (outlined in sections 105 to 108 of the Act). Moreover, the Minister for Primary Industries also has the power to commission a review of any code holder and/or AEC if necessary (section 117 of the Animal Welfare Act).

The Director-General for Primary Industries is responsible for accrediting independent reviewers (section 109) who must, amongst other things, prove that they have the appropriate character and competencies to undertake comprehensive reviews, as set out in sections 110 to 113 of the Act. Any individual may apply to become an accredited reviewer. Accredited reviewers are audited by the Ministry for Primary Industries (MPI) regularly (clause 9 of schedule 2 of the Animal Welfare Act).

The accompanying diagram illustrates the framework regulating the use of animals in RTT.

Note

The Cabinet Minister responsible for animal welfare has historically been the Minister of Agriculture. In late 2011 this title changed to Minister for Primary Industries. On 30 April 2012 the Ministry of Agriculture and Forestry became the Ministry for Primary Industries.



2.2 Legal Status of NAEAC

The Animal Welfare Act 1999 came into effect on 1 January 2000. At that date NAEAC became a statutory committee with its functions and membership set in law. Prior to that, NAEAC had existed since 1984 as a committee that the Minister of Agriculture was required by the Animals Protection Act 1960 to establish, using powers under the Ministry of Agriculture and Fisheries Act 1953 and later the Ministries of Agriculture and Forestry (Restructuring) Act 1997.

2.3 Infrastructure

The diagram below illustrates New Zealand's animal welfare infrastructure and NAEAC's role within that framework.



3 Functions

Section 63 of the Animal Welfare Act 1999 prescribes the following functions for NAEAC:

- advising the Minister on ethical and animal welfare issues arising from RTT;
- providing advice and information on the development and review of codes of ethical conduct;
- making recommendations about the approval, amendment, suspension or revocation of codes of ethical conduct;
- making recommendations concerning the setting of standards and policies for codes of ethical conduct;
- providing information and advice to AECs;
- making recommendations on the appointment of accredited reviewers;
- considering the reports of independent reviews of code holders and AECs;
- making recommendations about declaring procedures not to be manipulations (under section 3(3));
- making recommendations about the manipulation of non-human hominids (under section 85);
- making recommendations on the approval of research or testing in the national interest (under section 118(3)).

4 The Committee

4.1 Selection of Members

NAEAC members are appointed by the Minister for Primary Industries in accordance with sections 64 and 65 of the Animal Welfare Act 1999. The committee has a maximum of ten members, and a member's term of office may not exceed three years, although members may be reappointed. Appointments are normally for a maximum of two terms, except in exceptional circumstances.

While the Minister has the authority to appoint members, in recent years it has been the policy of successive governments to require appointments to statutory committees to be considered by the Cabinet Appointments and Honours Committee and the Cabinet.

In selecting members (other than the chairperson) the Minister is required to have regard to the following factors:

- the public interest in relation to the use of animals in RTT;
- the need for balance between those involved in RTT and those who are not; and
- the need for the committee to possess knowledge and experience in the following areas:
 - veterinary science;
 - medical science;
 - biological science;
 - the commercial use of animals in research and testing;
 - ethical standards and conduct in respect of animals;
 - education issues, including the use of animals in schools;
 - environmental and conservation management;
 - animal welfare advocacy;
 - public interest in respect of animals;
 - any other area the Minister considers relevant.

4.2 Members

The table below lists members of the committee during 2011:

Members	Expiry of Appointment
Dr Virginia Williams BVSc, MACVSc, Dip Prof Ethics, Animal Welfare Consultant (Independent Chairperson)	31.10.12
Dr Karen Booth BSc BVSc CertVR MACVSc, Manager Regulatory Affairs, Pfizer Animal Health (nominated by Agcarm Inc)	31.10.13
Mr Ian M Buchanan BSc (Hons), Company Director (nominated by Local Government New Zealand)	31.10.14
Dr Robert P Dempster MSc, PhD, Dip Bus Studies, Regulatory Affairs & New Product Development Manager, Intervet/Schering-Plough Animal Health Ltd (nominated by Agcarm)	31.10.13

Ms Allison L Dodds MSc (Hons), Dip Tchg, Teacher in Charge of Biology, Animal Welfare Officer, Queens High School (nominated by the Ministry of Education)	31.10.12
Dr Martin A Kennedy BSc (Hons), PhD, Professor, Department of Pathology, University of Otago, Christchurch (nominated by the Health Research Council of New Zealand)	31.10.13
Hon Robyn J Kippenberger Dip Home Science, Dip Tchg, National Chief Executive, Royal New Zealand Society for the Prevention of Cruelty to Animals (nominated by RNZSPCA)	31.10.14
Dr Peter D Larsen BSc (Hons), PhD, Associate Professor, Department of Surgery and Anaesthesia, University of Otago, Wellington (nominated by the Royal Society of New Zealand)	31.10.12
Mr Peter W Mason BCA, member of the National Council of the Royal New Zealand Society for the Prevention of Cruelty to Animals, member of the International Council of Compassion in World Farming, Vice President of the World Society for the Protection of Animals (nominated by the Royal New Zealand SPCA)	31.10.11
Dr David R Morgan BSc (Hons), MSc, PhD, Scientist (nominated by Landcare Research New Zealand Ltd)	31.10.12
Mr David J M Peart MNZM, JP (nominated by Local Government New Zealand)	31.10.11
Dr Justine H Stewart BVSc, Technical Manager, Auckland Meat Processors	31.10.13

Dr Robert Dempster resigned on 4.02.11. Dr Karen Booth was appointed to replace him on 2.06.11. David Peart and Peter Mason retired from the committee at the end of their terms and were replaced by Ian Buchanan and Hon Robyn Kippenberger respectively.

4.3 Secretariat

The Animal Welfare Team within MPI continued to provide high quality support to NAEAC during the year. The committee is grateful for the guidance of Linda Carsons who attended meetings as MPI's Principal Adviser. Paula Lemow, the committee's secretary, Kirsty Grant and Margaret Handscomb all made valuable contributions to the work of the committee.

4.4 Deputy Chairperson

The Animal Welfare Act 1999 requires the committee to elect a deputy chairperson at the first meeting of each year. Dr Dave Morgan was elected to fulfil this role in 2011.

4.5 Fees

Government policy requires disclosure of fees paid to members of statutory boards and committees. The daily fee paid to committee members during 2011 was \$400 for members and \$550 for the chairperson.

Members are paid the fee for attending meetings, with an allowance for preparation time. Members are also reimbursed for travelling expenses. In addition, the chairperson and, on occasion, other members may be paid additional fees for representing the committee at other meetings or for carrying out significant extra work on the committee's behalf.

The table below lists the fees paid during 2011.

Member	Fees paid during 2011 (gross)
V Williams	\$9 350.00
K Booth	\$ 400.00
I Buchanan	–
R Dempster	–
A Dodds	\$2 800.00
M Kennedy	\$3 000.00
R Kippenberger	–
P Larsen	\$ 600.00
P Mason	\$2 600.00
D Morgan ¹	\$6 300.00
D Peart	\$2 800.00
J Stewart	\$1 000.00

¹ Fees are paid direct to the member's employer to recompense them for time lost from the member's primary employment.

4.6 Operations

4.6.1 Meetings

NAEAC met four times in 2011.

Temporary working groups were formed to deal with specific issues where necessary. Visitors to the meetings assisted the committee with their special expertise or kept the committee informed of significant current developments.

Member	12/03/09	14/05/09	13/08/09	19/11/09	23/02/10	21/05/10	12/08/10	25/11/10	17/02/11	19/05/11	12/09/11	27/10/11
J Martin	•	•	•	–	–	–	–	–	–	–	–	–
V Williams	–	–	–	•	•	•	•	•	•	•	•	•
A Dodds	•	•	•	•	•	•	•	•	•	•	•	•
K Booth	–	–	–	–	–	–	–	–	–	–	•	X
I Buchanan	–	–	–	–	–	–	–	–	–	–	–	–
R Dempster	–	–	–	–	–	–	•	–	–	–	–	–
I LeGrice	•	•	•	–	–	–	–	–	–	–	–	–
M Kennedy	•	•	•	•	X	•	•	•	•	X	•	•
R Kippenberger	–	–	–	–	–	–	–	–	–	–	–	–
P Larsen	–	–	–	•	•	•	•	•	•	X	•	X
R Marchant	•	•	•	•	X	•	•	•	–	–	–	–
P Mason	•	•	•	•	•	•	X	•	•	•	X	•
D Morgan	•	•	•	•	•	•	•	•	•	•	•	•
D Peart	•	•	•	•	•	•	•	•	•	•	X	•
J Stewart	•	•	•	•	•	•	•	•	•	•	•	X

• Present, X Absent, – Not applicable

4.6.2 Strategic and operational plans

The committee's strategic plan is reviewed every year. Operational plans are developed each year based on the strategic plan. Progress against the 2011 operational plan was reviewed at each quarterly meeting.

4.6.3 Performance review

The committee carries out an internal performance review at the end of each year, providing members with an opportunity to reflect on the way the committee has operated over the previous 12 months. In this, as in other reviews, the committee expresses its appreciation for the excellent support it receives from the MPI Animal Welfare Standards staff. Areas noted for further emphasis were the support and promotion of acceptance and implementation of validated alternatives to animal-based regulatory testing, and ensuring the promotion of a consistent and statistically sound approach to animal numbers in regulatory testing. To this end, and as a follow-up to a meeting with the Agricultural Compounds and Veterinary Medicines (ACVM) Group during the year, the committee has planned a mini-tutorial on this topic for 2012.

4.6.4 Annual reports

Since 2000, NAEAC has been required by law to provide the Minister of Agriculture with an annual report. In practice, the committee has been doing so for many years. A list of these reports and other relevant publications can be found in Appendix 3.

4.6.5 Policy review

During 2011, NAEAC completed a review, initiated in 2010, of all its policies. A list of current policies can be found in Appendix 4.

4.6.6 Conferences attended

NAEAC members, and members of NAEAC's secretariat and support staff, attended – and in many cases gave presentations at – the following conferences and meetings in 2011:

- Trans-Tasman Animal Welfare Committee, Wellington, New Zealand, February
- 5th Pan Commonwealth Veterinary Conference, Accra, Ghana, March
- 1st Meeting of the Regional Animal Welfare Strategy for Asia, the Far East and Oceania Coordination Group, Bangkok, Thailand, April
- 79th OIE (World Organisation for Animal Health) General Session, Paris, France, May
- Royal New Zealand SPCA National Conference, Wellington, May
- European Commission/New Zealand Animal Welfare Co-operation Forum, Brussels, Belgium, May
- Department for Environment, Food and Rural Affairs/Ministry of Agriculture and Forestry Animal Welfare Liaison meeting, London, United Kingdom, May
- OIE Permanent Animal Welfare Working Group, Paris, France, June
- Universities Federation for Animal Welfare International Animal Welfare Symposium, Portsmouth, United Kingdom, June
- New Zealand Veterinary Association Conference, Hamilton, June
- ANZCCART Conference, Rotorua, June
- Meeting of the OIE *ad hoc* Group on Laboratory Animal Welfare, Paris, France, July
- Eighth World Congress on Alternatives and Animal Use in the Life Sciences, Montreal, Canada, August
- 5th Workshop of the Australian Animal Welfare Strategy, Sydney, Australia, August
- 3rd Meeting of the OIE Collaborating Centre for Animal Welfare Science and Bioethical Analysis Management Committee, Wellington, October
- Regional Animal Welfare Strategy for Asia, the Far East and Oceania Coordination Group meeting 2, Tokyo, Japan, December
- OIE Workshop for National Animal Welfare Focal Points, Tokyo, Japan, December.

5 Codes of Ethical Conduct

All organisations or individuals that manipulate live animals for the purposes of RTT are required to do so in accordance with a code of ethical conduct recommended by NAEAC and approved by the Director-General of MPI.

5.1 Requirements of the Animal Welfare Act 1999

Under the Animal Welfare Act 1999, codes of ethical conduct must be approved by the Director-General of MPI, as must amendments, suspensions or revocations of approvals. Except in the case of suspension or revocation at the request of the code holder, NAEAC must be consulted before a decision is made. Notice of the Director-General's decision is published in the *Gazette*.

For those wanting to use another organisation's code and AEC, the statute requires the parties concerned to reach an agreement and for MPI to be notified of the arrangement, in writing, before any manipulations take place. Termination of the arrangement should also be notified to MPI. Such arrangements, or terminations thereof, are not published in the *Gazette*.

In addition, while major amendments to codes must be approved by MPI, code holders may make minor amendments. However, MPI must be provided with written details of the amendments as soon as practicable after the end of the calendar year in which they were made (and no later than 31 March of the succeeding year). Minor amendments are described in the Animal Welfare Act 1999 as ones 'that would not materially affect the purposes of the code'.

5.2 Activity During 2011

The table below outlines the applications processed and notifications made during 2010 and 2011.

	2011	2010
Approval of new code	2	2
Notification of arrangement to use existing code	11	12
Approval of amendments to code	0	1
Notification of minor amendments to code	3	1
Termination of notified arrangement to use existing code	1	5
Code revoked	0	1
Code expired and not renewed	0	0
Arrangement to use existing code lapsed	1	1

Code holders wishing to apply for a new code, and those code holders with codes approved in 2006, had mandatory independent reviews completed during 2011 (see section 6.2 for more detail).

During 2011, two new codes were approved. Eleven organisations made arrangements to utilise existing codes and one organisation terminated its arrangements. Organisations that utilise existing codes that expire have to renew their arrangements with the same code holder, make a new arrangement with another code holder or make a decision to allow their arrangement to lapse. Experience shows that some organisations make short-term arrangements, lasting for only one or two years to cover one or a small

series of research projects for which they need AEC approval. Other activities which impact on these figures include the sale of a business, mergers and/or takeovers (see section 93 of the Animal Welfare Act 1999).

Details of all codes approved or revoked and arrangements notified or terminated are published regularly in *Welfare Pulse*.

5.3 Approvals in Force

The following table gives details of the number of approvals in force as at 31 December 2010 and 2011.

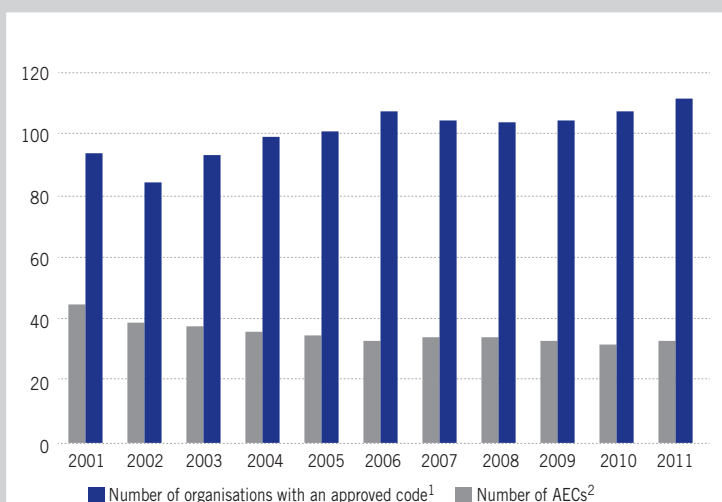
Number of:	2011	2010
organisations using an approved code	115	111
approvals in force ¹	118	114
organisations with a code	30	29
animal ethics committees established ²	34	33
organisations using another organisation's AEC	85	82

1 One organisation has four approvals in force as it uses a different AEC for work in different locations.

2 Two organisations each have three animal ethics committees to facilitate work carried out at more than one campus/location.

The number of organisations/individuals using an approved code (their own or another organisation's) rose to 115 in 2011, the highest since the Animal Welfare act 1999 was introduced. The number of AECs to deal with projects from all those organisations was, at 34, one more than in 2010. Changes that have occurred since 2001 are shown graphically below.

Number of codes and AECs



1 Some organisations may have more than one approval.

2 Excludes AECs set up from time to time under the Department of Education code (prior to 2003).

Appendix 1 lists the organisations with an approved code as at 31 December 2011 and indicates those that use another organisation's AEC. Appendix 2 lists those organisations whose codes of ethical conduct have expired or have been revoked or whose arrangements have terminated, most commonly because their activities no longer necessitate a code, or as a result of company/organisational mergers where both parties previously had a code.

It is important to note that the Animal Welfare Act 1999 contains a provision (section 93) that approval of a code is personal to the code holder and not transferable without the consent of the Director-General of MPI. Thus, if a company changes its name as a result of a sale or merges with another entity, this has the effect of revoking the code of ethical conduct approval unless the change is effected with the Director-General's consent.

5.4 Approvals Not Made by AECs

5.4.1 Non-human hominids

The Animal Welfare Act 1999 precludes the use of non-human hominids² for the purposes of RTT unless it is carried out with the approval of the Director-General of MPI and in accordance with any conditions imposed by the Director-General (section 85 of the Act).

The Director-General is required to consult NAEAC before exercising the powers under these provisions. Furthermore, the Director-General may not approve such RTT unless satisfied that the use of the non-human hominid is in its best interests or in the interests of its species and that the benefits to be derived outweigh any likely harm to the individual animal.

The Director-General approved no research or testing involving the use of non-human hominids in 2011.

5.4.2 Research or testing in the national interest

The Minister for Primary Industries may authorise research or testing without the approval of an AEC where the Minister is satisfied that such research or testing is necessary in the national interest.

In reaching a decision, the Minister is required to take into account whether the research or testing:

- is necessary to protect New Zealand's biosecurity interests;
- relates to matters that affect or are likely to affect New Zealand's international obligations;
- is necessary to protect human or animal health.

Unless exercising emergency powers under other statutes, the Minister is required to consult NAEAC before making a decision.

The Minister approved no research or testing in the national interest during the year.

² "Non-human hominid" means any non-human member of the family Hominidae, being a gorilla, chimpanzee, bonobo or orangutan (section 2(1) of the Animal Welfare Act 1999).

6 Animal Ethics Committees

6.1 Communication with AECs

6.1.1 Visits

It is NAEAC's policy to hold one meeting a year outside Wellington, enabling the committee to meet with AEC members in regional areas. In 2011, with the ANZCCART Conference being held in Rotorua at the end of June, the committee combined attendance at the conference with visits to two local research centres.

The first of these was The University of Auckland's Ngapouri Farm Laboratory. Researchers at Ngapouri use sheep in a variety of experiments, many of which explore issues of fetal and neonatal physiology with direct relevance to both veterinary and human medicine, as well as to animal husbandry.

The other research centre visited was Scion (the New Zealand Forest Research Institute Ltd). While most research at the centre is obviously not animal-based, Scion does undertake environmental risk assessment relating to industrial discharges and biowastes, and, in part, this involves the cytometric analysis of blood samples from trout, koura, earthworms and algae.



Members of NAEAC during their visit to Ngapouri Farm Laboratory



Members of NAEAC and MPI's Animal Welfare Team during their visit to Rotorua

6.1.2 Newsletters

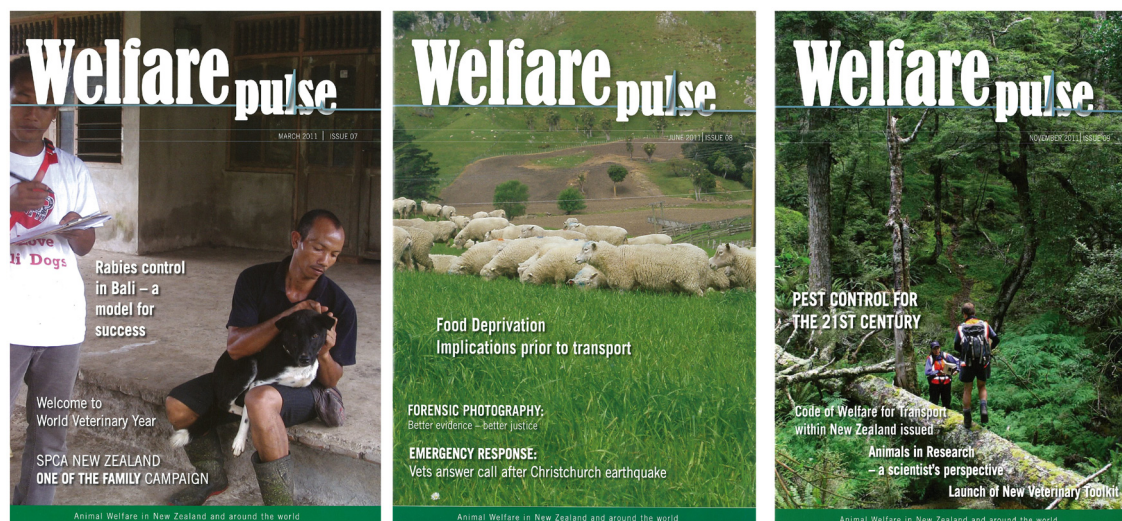
An innovation this year has been the occasional newsletters to AECs from the NAEAC Chair, with news from NAEAC meetings as well as the committee's responses to queries from AECs on various issues for which clarification is sought. Two such newsletters were sent out during the year.

6.1.3 Welfare Pulse

The MPI publication *Welfare Pulse* was started in 2009, successfully combining a number of smaller existing publications, including *NAEAC News*, and extending the content to ensure all stakeholders are kept informed of key domestic and international animal welfare issues, developments and trends.

Each issue contains items pertaining to NAEAC and RTT activities, and their inclusion in a general welfare magazine ensures a wider audience for information on the use of animals in science.

Three issues of *Welfare Pulse* were published in 2011; issue 7 in March, issue 8 in June and issue 9 in November.



6.1.4 Occasional paper series

NAEAC has an objective of disseminating articles that could be of relevance to those with an interest in RTT, particularly AEC members who may not have access to scientific publications. This is achieved by the publication of 'occasional papers'. Two such papers were printed in 2011.

The following papers have been published:

- Occasional Paper No. 1 – *Underreporting of the three Rs deployment that occurs during the planning of protocols that preceded their submission to animal ethics committees* (D J Mellor, J C Schofield and V M Williams) 2008, reprinted with permission from the authors and the organisers of the 6th World Congress of Alternatives and Animal Use in Life Sciences
- Occasional Paper No. 2 – *Regulation of animal use in research, testing and teaching in New Zealand – the black, the white and the grey* (L A Carsons) 2009
- Occasional Paper No. 3 – *Regulation of animal use in research, testing and teaching: Comparison of New Zealand and European legislation* (N Cross, L A Carsons and A C D Bayvel) 2009
- Occasional Paper No. 4 – *Compliance monitoring: The University of Auckland approach* (J Stewart) 2009
- Occasional Paper No. 5 – *Monitoring methods for animal ethics committees* (D Morgan) 2010. This had its origins in a paper presented to ANZCCART's 2009 conference in Australia.
- Occasional Paper No. 6 – *Planning for refinement and reduction* (D Fry, R G Das, R Preziosi and M Hudson) 2011, reprinted with permission from the authors and organisers of the 7th World Congress on Alternatives and Animal Use in Life Sciences, Rome 2009

- Occasional Paper No. 7 – *Avoiding duplication of research involving animals* (D Morgan) 2011.

The occasional papers are available from the MPI website: <http://www.biosecurity.govt.nz/regs/animal-welfare/naeac/occasional-paper>

6.1.5 Reference material for code holders and AECs

The resource package of published material collated by NAEAC for new AEC members is reviewed and updated annually.

The list of contents includes:

- Chairperson letter
- Guide to Part 6 of the Animal Welfare Act
- A Culture of Care
- Good Practice Guide for the Use of Animals in RTT
- NAEAC Occasional Papers
- Animal Use Statistics – Guidance for Completing Statistical Returns
- Animal Research Benefits Us – And Animals Too;
- The Three Rs: Past, Present and Future;
- The Role and Evolution of Independent Government Advisory Committees;
- A Guide for Lay Members of AECs;
- *Welfare Pulse*;
- *Animals and Society* (Royal Society of New Zealand Beta publication);
- NAEAC annual report.

6.2 Independent Reviews of AECs

The Animal Welfare Act requires code holders and their AECs to undergo periodic independent reviews. Reviews must take place within two years of code approval for new code holders, and prior to the expiry of the code for existing code holders who wish to renew their code approval. Approved codes expire after five years.

Reviews may only be carried out by people who have been accredited by the Director-General of MPI to carry out such reviews. The Director-General is required to have regard for the person's relevant competencies, their character or reputation, and their ability to maintain an appropriate degree of impartiality and independence in conducting reviews. The pool of accredited reviewers stands at six (see Appendix 5).

During 2011, one expiry review and one two-year review were carried out. Both NAEAC and the Director-General of MPI are supplied with a copy of reviewers' final reports (as required by the Animal Welfare Act 1999). NAEAC's role is to take the report into account when considering the recommendation it will make to the Director-General on applications for a new code of ethical conduct. It is MPI's responsibility to determine whether or not the code holder has achieved a satisfactory degree of compliance with the code and, if not, to determine what steps the code holder must take to achieve a satisfactory level of compliance.

Reports also contain non-binding recommendations from the reviewer that code holders may find useful.

7 The Year's Issues

7.1 Three Rs Award

The NAEAC Three Rs Award is a national award made to an individual, group or institution that epitomises best practice in the humane use of animals in RTT through the implementation of the Three Rs, specifically:

- **replacement** of sentient animals in experiments with non-sentient or non-living alternatives at every opportunity;
- **reduction** in numbers to the minimum possible; and
- **refinement** of experimental techniques so as to minimise or eliminate any suffering involved.

The 2011 award, sponsored by the Royal New Zealand SPCA, was presented to Dr Siouxie Wiles in recognition of her consistent adherence to Three Rs principles and the embodiment of them in her everyday work as a microbiologist. Dr Wiles, from The University of Auckland, has been able to considerably reduce the number of mice she needs in her search for more effective antibiotics through the use of bioluminescent bacteria.



Dr Siouxie Wiles from The University of Auckland is presented with the NAEAC Three Rs Award by Virginia Williams, Chair of NAEAC. The presentation was made at the 2011 ANZCCART Conference.

7.2 NAEAC AEC Service Awards

AECs can nominate committee members for NAEAC AEC Service Awards in recognition of meritorious service for at least five years. Two such awards were given out during 2011.

7.3 NAEAC Research Priorities

NAEAC, in consultation with AECs, has developed a draft list of research priorities aimed at promoting research in New Zealand into the Three Rs: replacement, reduction, and refinement. During 2009 this list was conveyed to funding bodies to provide guidance in the formulation of research funding strategies and consideration of funding proposals. NAEAC's research priorities, with their alignment with Three Rs principles and emphasis on ethical expectations, met with support from funding bodies.

The research area most widely considered to be a priority was the development of humane endpoints for animals used in research and testing. Other priorities identified include:

- under the heading of *replacement*, the validation of alternatives to animal use in regulatory testing, and the development of non-animal methods for producing antibodies;
- under the heading of *reduction* of animal use, the examination of opportunities for sharing excess animals/tissues;
- under the heading of *refinement*,
 - the need for understanding environmental enrichment for laboratory animals;
 - improved animal husbandry;
 - monitoring for pain and suffering;
 - humane methods for euthanasia of laboratory animals;
 - the development of humane pest control procedures.

NAEAC will continue to monitor the performance of funding bodies in giving effect to the research priorities set out above.

7.4 Suggested Amendments to the Animal Welfare Act

NAEAC has continued to work, both on its own and in conjunction with NAWAC on identifying issues which it feels could be clarified or improved by changes to the Animal Welfare Act, currently under review. In recent years NAEAC has made recommendations to the Minister proposing that the definition of manipulation should be amended to include (a) killing for the purposes of RTT, and (b) treatment undertaken in the first half of gestation. These recommendations remain under consideration, along with other issues such as clarification on the definitions both of “manipulation”, as well as “research, testing and teaching”.

7.5 Public Awareness of the Regulatory System and RTT

Advocacy for the value of animal use in RTT is a role principally for those who benefit from such work. NAEAC, for its part, seeks to provide assurance to the public of the integrity of the regulatory framework underpinning the use of animals in RTT. Attitudinal research, funded by MAF (as it then was) and undertaken in 2005 has been reported in previous annual reports. This research highlighted the lack of awareness amongst the general public of regulations surrounding this issue. NAEAC has regular discussion with MPI Communications staff on opportunities to increase public awareness of Part 6 of the Animal Welfare Act.

7.6 NAEAC's Commitment to the Three Rs

The principles of the Three Rs i.e. the reduction, refinement and replacement of the use of animals in life sciences, are the foundation of Part 6 of the Act and, as this report shows, play a prominent part in almost all that NAEAC does.

A significant aspect of NAEAC's activity is its support for MPI and the New Zealand scientific community in their efforts to have the Three Rs embodied in international practices in the use of animals for regulatory testing. New Zealand's representatives continue to promote international harmonisation of the use of animals in regulatory testing in various intergovernmental forums under the auspices of the OIE.

New Zealand has a notable record of innovation in this area, for example in the replacement of testing that involves animals by *in vitro* testing and in new techniques for pain relief. Such important developments have been acknowledged over the years by the NAEAC Three Rs Award (see section 7.1).

NAEAC continues to liaise with and support the New Zealand Three Rs Programme, a joint venture between Massey University and MPI. The programme is located at Massey and operates within the Animal Welfare Science and Bioethics Centre. The purposes of the programme are to:

- profile New Zealand's continuing Three Rs contribution;
- promote understanding, application and development of the Three Rs;
- monitor and liaise with other Three Rs centres internationally to ensure that New Zealand keeps abreast of major advances in the field;
- critically assess Three Rs developments nationally and internationally.

7.7 Mini-tutorials

In order to keep members up to date with relevant issues and to ensure good committee processes, NAEAC includes mini-tutorials at meetings whenever time permits. During 2011, topics included:

- emerging technologies;
- the statistical basis for trial group sizes in respect of ACVM standards;
- an update on the animal welfare strategy and Act review.

7.8 Liaison with Other Bodies

7.8.1 National Animal Welfare Advisory Committee

NAEAC maintains a close association with the activities of the NAWAC. NAEAC's chairperson, being an *ex officio* member of NAWAC, facilitates this inter-committee liaison.

7.8.2 Australian and New Zealand Council for the Care of Animals in Research and Teaching

NAEAC continues to work closely with ANZCCART. Both organisations have an interest in promoting the awareness of regulatory requirements surrounding the use of animals in R/T, particularly in the education sector. NAEAC and ANZCCART held a joint meeting in October 2011.

Appendix 1

Organisations with an Approved Code of Ethical Conduct or with Notified Arrangements to Use an Approved Code

(As at 31 December 2011)

*Use another organisation's animal ethics committee

*A1 Genetic Services Ltd
706 North Road
Lorneville
INVERCARGILL 9810

*Abacus Biotech Ltd
P O Box 5585
DUNEDIN 9058

AgResearch Ltd (3 AECs)
Ruakura Agricultural Centre
Private Bag 3123
Waikato Mail Centre
HAMILTON 3240

*AgriHealth NZ Ltd
PO Box 46135
Herne Bay
AUCKLAND 1147

*AgriScience Consulting
28/7 Knox Street
HAMILTON 3204

Agrivet Services Ltd
PO Box 8734
HAVELOCK NORTH 4157

*Agvet NZ Ltd
702/9 Hopetoun Street
Freemans Bay
AUCKLAND 1011

*Airway Ltd
21A Ranui Road
Remuera
AUCKLAND 1050

Alleva Animal Health Ltd
PO Box 34032
Birkenhead
AUCKLAND 0746

*Ambreed New Zealand Ltd
P O Box 176
Waikato Mail Centre
HAMILTON 3240

Ancare Scientific Ltd
P O Box 36240
Northcote
AUCKLAND 0748

*Ancrum Consultancies
134 Wild Road
RD 5
CHRISTCHURCH 7675

*Anderson, Peter V A
The Vet Centre Marlborough Ltd
7 Redwood Street
BLENHEIM 7201

*Androgenix Ltd
University of Auckland
Private Bag 92019
Victoria Street West
AUCKLAND 1142

*Animal Breeding Services
(2007) Ltd
3680 State Highway 3
RD 2
HAMILTON 3282

*Animal Health Centre
P O Box 21
MORRINSVILLE 3340

*Animal Health Research Ltd
PO Box 39491
Howick
AUCKLAND 2145

*Aoraki Polytechnic
Private Bag 902
TIMARU 7940

*Argenta Manufacturing Ltd
P O Box 75340
Manurewa
AUCKLAND 2243

*AsureQuality NZ Ltd
Private Bag 14946
Panmure
AUCKLAND 1741

*Auckland University of
Technology
Private Bag 92006
Victoria Street West
AUCKLAND 1142

Auckland Zoological Park
Private Bag
Grey Lynn
AUCKLAND 1245

*Baldock, Anne K
Waikato Institute of Technology
Private Bag 3036
Waikato Mail Centre
HAMILTON 3240

Bay of Plenty Polytechnic
Private Bag 12001
TAURANGA 3143

*Bayer NZ Ltd
P O Box 2825
Shortland Street
AUCKLAND 1140

*Biocell Corporation Ltd PO Box 23610 Hunters Corner AUCKLAND 2155	*Deer Improvement Ltd 270 Ardlussa Road RD 6 GORE 9776	*ImmunoEthical Associates (NZ) Ltd 4 Marshs Road Islington CHRISTCHURCH 8042
*Bomac Research Ltd P O Box 76369 Manukau City AUCKLAND 2241	Department of Conservation P O Box 10420 The Terrace WELLINGTON 6143	*Innate Therapeutics Ltd P O Box 91806 Victoria Street West AUCKLAND 1142
*Caledonian Holdings Ltd PO Box 82 TAKANINI 2245	*Duir NZ Ltd P O Box 959 Waikato Mail Centre HAMILTON 3240	*Invitrogen NZ Ltd P O Box 12502 Penrose AUCKLAND 1642
*Carne Technologies Ltd PO Box 740 CAMBRIDGE 3450	Eastern Institute of Technology Private Bag 1201 Hawkes Bay Mail Centre NAPIER 4142	*IVP International New Zealand Ltd PO Box 916 TAURANGA 3140
*Cawthron Institute Private Bag 2 Nelson Mail Centre NELSON 7042	*Elanco Animal Health PO Box 259354 Botany AUCKLAND 2163	*Jurox Pty Ltd 85 Gardiner Road Rutherford NSW 2320 AUSTRALIA
Christchurch Polytechnic Institute of Technology P O Box 540 CHRISTCHURCH 8140	*ES Plastics Ltd PO Box 5682 Frankton HAMILTON 3242	*Kahne Ltd 64 Cook Street AUCKLAND 1010
*Connovation Ltd PO Box 58613 Botany AUCKLAND 2163	Estendart Ltd Massey University Private Bag 11222 PALMERSTON NORTH 4442	*Karori Reservoir Wildlife Trust Inc P O Box 9267 Marion Square WELLINGTON 6141
*Cook, Trevor George Totally Vets Ltd 25 Manchester Street FEILDING 4702	*FIL (New Zealand) Ltd PO Box 4144 Mt Maunganui South MT MAUNGANUI 3149	*Kotare Bioethics Ltd 9B Atua Strret Johnsonville WELLINGTON 6037
*Cropmark Seeds Ltd PO Box 16574 Hornby CHRISTCHURCH 8441	*Four Rings Enterprises Ltd 9 Hurstwood Place Glen Innes AUCKLAND 1072	Landcare Research NZ Ltd P O Box 40 LINCOLN 7640
*DairyNZ Ltd Private Bag 3221 Waikato Mail Centre HAMILTON 3240	*Gribbles Veterinary (Hamilton) PO Box 195 Waikato Mail Centre HAMILTON 3240	*Lawrence, David 374 Livingstone Road RD 1 WINTON 9781
*Dairy Production Systems Ltd P O Box 24132 Abels HAMILTON 3253	*Hillcrest High School P O Box 11020 Hillcrest HAMILTON 3251	

Lincoln University P O Box 84 Lincoln University LINCOLN 7647	Nelson Marlborough Institute of Technology Private Bag 19 Nelson Mail Centre NELSON 7042	*Pest Control Research Ltd P O Box 7223 Sydenham CHRISTCHURCH 8240
*Lind, Jeremy J JL Vets Services 3/88 Grey Street PALMERSTON NORTH 4410	New Zealand Association of Science Educators PO Box 10122 The Terrace WELLINGTON 6143	*Pest-Tech Ltd 233 Branch Drain Road RD LEESTON 7682
*Livestock Improvement Corporation Ltd Private Bag 3016 Waikato Mail Centre HAMILTON 3240	New Zealand Forest Research Institute Ltd P O Box 3020 Rotorua Mail Centre ROTORUA 3046	*Pfizer Pty Ltd 14 Normanby Road Mt Eden AUCKLAND 1024
Living Cell Technologies NZ Ltd P O Box 23566 Hunters Corner AUCKLAND 2155	*New Zealand Institute for Plant & Food Research Ltd Private Bag 92169 Victoria Street West AUCKLAND 1142	*PGG Wrightson Consulting PO Box 42 DANNEVIRKE 4942
*Malaghan Institute of Medical Research P O Box 7060 Newtown WELLINGTON 6242	*New Zealand Leather and Shoe Research Association (Inc) P O Box 8094 Hokowhitu PALMERSTON NORTH 4446	*PGG Wrightson Seeds P O Box 939 CHRISTCHURCH 8140
*Mason Consulting 317 Dunns Crossing Road RD 8 CHRISTCHURCH 7678	*Novartis NZ Ltd Private Bag 65904 Mairangi Bay AUCKLAND 0754	PharmVet Solutions P O Box 78037 Grey Lynn AUCKLAND 1245
*MAF Biosecurity New Zealand Investigation and Diagnostic Centre P O Box 40742 UPPER HUTT 5140	*Oamaru Veterinary Services 311 Thames Street OAMARU 7910	*Quantec Ltd PO Box 9466 Waikato Mail Centre HAMILTON 3240
Massey University Private Bag 11222 Manawatu Mail Centre PALMERSTON NORTH 4442	*On-Farm Research Ltd P O Box 1142 HASTINGS 4156	*Rotorua District Veterinary Club P O Box 340 ROTORUA 3040
*Merial NZ Ltd P O Box 76211 Manukau City AUCKLAND 2241	*Otago Polytechnic Private Bag 1910 DUNEDIN 9054	Schering-Plough Animal Health Ltd Private Bag 908 UPPER HUTT 5140
National Institute of Water& Atmospheric Research Ltd P O Box 8602 Riccarton CHRISTCHURCH 8440	*Parnell Laboratories (Aust) Pty Ltd 4/476 Gardeners Road Alexandria NSW 2015 AUSTRALIA	*Silver Fern Farms Ltd PO Box 940 HASTINGS 4156
		South Pacific Sera Ltd P O Box 2117 TIMARU 7941
		Southern Institute of Technology Private Bag 90114 INVERCARGILL 9840

*Stemvet New Zealand Ltd 25 Karewa Parade Papamoa Beach PAPAMOA 3188	University of Waikato Private Bag 3105 Waikato Mail Centre HAMILTON 3240	*Wakefield Gastroenterology Research Trust Private Bag 7909 Newtown WELLINGTON 6242
*Synlait Milk Ltd 1028 Heslerton Road RD 13 RAKAIA 7783	Valley Animal Research Centre PO Box 2648 Stortford Lodge HASTINGS 4153	*Wanganui Veterinary Services Ltd PO Box 911 Wanganui Mail Centre WANGANUI 4540
*The New Zealand Merino Company Ltd PO Box 25160 Victoria Street CHRISTCHURCH 8144	*Vet Nurse Plus PO Box 276115 Manukau City AUCKLAND 2241	* Ward, Christopher G 70B Pariri Road RD 3 KAITAIA 0483
Thermo Fisher Scientific Inc P O Box 658 Seventh Avenue TAURANGA 3140	*Vet Resource Ltd 316 Pokuru Road RD 5 TE AWAMUTU 3875	*Wellington Institute of Technology Private Bag 39803 Wellington Mail Centre LOWER HUTT 5045
*Towers Consulting 27 Mansel Avenue Hillcrest HAMILTON 3216	*Veterinary Enterprises Group PO Box 83 TE AWAMUTU 3840	
*Trinity Bioactives Ltd PO Box 15135 Miramar WELLINGTON 6243	*Veterinary Health Research Pty Ltd PO Box 9466 Waikato Mail Centre HAMILTON 3240	
*Unitec Institute of Technology Private Bag 92025 Victoria Street West AUCKLAND 1142	*VetSouth Ltd P O Box 12 WINTON 9741	
*Universal College of Learning Private Bag 11022 PALMERSTON NORTH 4442	*ViaLactia BioSciences Ltd PO Box 49 MORRINSVILLE 3340	
University of Auckland Private Bag 92019 Victoria Street West AUCKLAND 1142	Victoria University of Wellington P O Box 600 WELLINGTON 6140	
University of Canterbury Private Bag 4800 CHRISTCHURCH 8140	*Virbac Laboratories (New Zealand) Ltd 30 Stonedon Drive East Tamaki AUCKLAND 2013	
University of Otago (3 AECs) P O Box 913 DUNEDIN 9054	Waikato Institute of Technology Private Bag 3036 Waikato Mail Centre HAMILTON 3240	

Appendix 2

Codes of Ethical Conduct Revoked and Notified Arrangements Terminated

(As at 31 December 2011)

Agri-Feeds Ltd	Diverse Animal Holdings
Agriculture New Zealand Ltd	Ecology Division, DSIR
Agrimm Biologicals Ltd	Embrionics Ltd
AgVax Developments Ltd	Equine Fertility Services Ltd
Agvet Consultants Ltd	Ethical Agents Ltd
Alexander and Associates	Falkirk Scientific Foundation Ltd
AM2 and Associates	Feral R & D Ltd
Animal Control Products Ltd	Fonterra Innovation
Animal Health Advisory	Fort Dodge NZ Ltd
Animal Health Services Centre	Geneco Ltd
Animalz Napier Ltd	Genesis Research and Development Corporation Ltd
Arthur Webster (New Zealand) Pty Ltd	Get Real Productions
Aspiring Animal Services Ltd	Grasslands Division, DSIR
Auckland Area Health Board (formerly Auckland Hospital Board)	Green Lane & National Women's Hospitals
Autogenous Vaccines	Health Waikato
Baker, Allan J	Hutt Hospital
BioLogic Scientific Consulting Ltd	ICPbio Ltd
Bioscience Corporation Ltd	Impian Technologies Ltd
Biotechnology Division, DSIR	Institute of Environmental Science & Research Ltd
Bishop Viard College	Info-Brok
Canesis Network Ltd	InterAg
Captec (NZ) Ltd	Intervet NZ Ltd
Central Institute of Technology	Johnson & Johnson (New Zealand) Ltd
Chemeq Ltd	Kelly Tarlton's Antarctic Encounter and Underwater World
Cooks Laboratories	KODE Biotech Ltd
Coopers Animal Health New Zealand Ltd	Kristin School
Crown Research Institutes Palmerston North Campus	Lakeland Vets Ltd
Crusader Meats NZ Ltd	Longburn Adventist College
Department of Education	Lowe Walker Hawera Ltd

Marlborough Regional Science & Technology Fair Committee	Roche Products NZ Ltd
McGuire, Paul (Calf Collection Services)	Saint Mary's College
Meat Industry Research Institute of New Zealand	Salmond Smith Biolab Ltd
Medlab Hamilton	Samuel Marsden Collegiate School
Ministry of Forestry	Scots College
Mulvaney, Christopher John	Shell Chemicals New Zealand Ltd
National College of Security Personnel and Technology	Slacek, Brigitte
Nelson Hospital	Smith, Catherine H
Neuren Pharmaceuticals Ltd	Smith Kline Beecham (New Zealand) Ltd (formerly Smith Kline & French NZ Ltd)
New Zealand Aluminium Smelters Ltd	South Auckland Health
New Zealand Institute of Advanced Laparoscopic Surgery	South Greta Farms Ltd
New Zealand Sheeppac Ltd	Sovereign Feeds Ltd
New Zealand Trade and Enterprise (formerly Industry New Zealand)	Stockguard Laboratories (NZ) Ltd
New Zealand Water Management Ltd	Suta Export Ltd
New Zealand Wildlife Rehabilitation Trust	Tatua Co-operative Dairy Company Ltd
Newall, Michael Douglas	Tauhara Furs Partnership
Orana Park Wildlife Trust	Tegel Foods Ltd
P A Biologicals NZ	The New Zealand King Salmon Company Ltd
Palmerston North Campus, DSIR	Tompkins, Daniel M
Palmerston North Hospital Board (later known as Manawatu-Wanganui Area Health Board)	Travenol Laboratories (New Zealand) Ltd (later known as Baxter Healthcare Ltd)
Parkway College	Van Wijk, Niek
Paxarms	Venous Supplies 1990 Ltd
Pharma Pacifica	Veterinary Enterprises Ltd
Photonz Corporation Ltd	Waikato Science Teachers' Association
Plade Holdings Ltd	WatPa Enterprises Ltd
PPL Therapeutics (NZ) Ltd	Wellington High School and Community Institute
Protomix Corporation Ltd	Wellington Polytechnic
Queen Margaret College	Woodland Goats Ltd
Rhône-Poulenc (NZ) Ltd	Wrightson Breeding Services Ltd
RisqA Veterinary Consulting	Xcluder Pest Proof Fencing Company Ltd
Robbins, Lloyd	Young's Animal Health (NZ) Ltd
	Zenith Technology Corporation Ltd

Appendix 3

Publications

Guides to the Animal Welfare Act 1999

- *Guide to the Animal Welfare Act 1999*, policy information paper no. 27
- *The Use of Animals in Research, Testing and Teaching – Users Guide to Part 6 of the Animal Welfare Act 1999*, policy information paper no. 33

These documents are available on MPI's website at <http://www.mpi.govt.nz>

Annual Reports

- Report for the Period August 1984 – 30 June 1989
- Report for the Period 1 July 1989 – 31 December 1991
- Report for the Period 1 January 1992 – 31 December 1993
- 1994 Annual Report
- 1995 Annual Report
- 1996 Annual Report
- 1997 Annual Report
- 1998 Annual Report
- 1999 Annual Report
- 2000 Annual Report
- 2001 Annual Report
- 2002 Annual Report
- 2003 Annual Report
- 2004 Annual Report
- 2005 Annual Report
- 2006 Annual Report
- 2007 Annual Report
- 2008 Annual Report
- 2009 Annual Report
- 2010 Annual Report

Newsletters (NAEAC News)

Twenty-nine issues of *NAEAC News* were published between August 1991 and December 2008. From 2009, the content of *NAEAC News* was merged with that of other publications and became *Welfare Pulse*.

NAEAC Guides

- Good Practice Guide for the Use of Animals in Research, Testing and Teaching (June 2010)
- A Culture of Care: A Guide for People Working with Animals In Research, Testing and Teaching (October 2002)
- Guide to the Preparation of Codes of Ethical Conduct (February 2012)
- A Guide for Lay Members of Animal Ethics Committees (March 2007)
- Guidelines for the Welfare of Livestock from which Blood is harvested for Commercial and Research Purposes (March 2009)

NAEAC Occasional Papers

1. Underreporting of the Three Rs deployment that occurs during the planning of protocols the precedes submission to animal ethics committees (September 2008)
2. Regulation of animal use in research, testing and teaching in New Zealand – the black, the white and the grey (April 2009)
3. Regulation of animal use in research, testing and teaching: Comparison of New Zealand and European legislation (October 2009)
4. Compliance monitoring: The University of Auckland approach (October 2009)
5. Monitoring methods for animal ethics committees (October 2010)
6. Planning for refinement and reduction (January 2011)
7. Avoiding duplication of research involving animals (March 2011)

Availability

These publications are available on the Internet at the following address:

<http://www.biosecurity.govt.nz/regs/animal-welfare/naeac/occasional-paper>

or by contacting:

Animal Welfare
Ministry for Primary Industries
PO Box 2526
Wellington 6140
New Zealand

Phone 0800 00 83 33 or email: animalwelfare@mpi.govt.nz

Appendix 4

NAEAC Policies and Guidelines

- Guidelines for animal ethics committees on adequate monitoring
- Guidelines for avoiding needless duplication of animal use in research
- Guidelines on application templates used by animal ethics committees
- Site visit guidelines
- Commercial cloning
- Conflict of interest
- Interpretation of “scientific community” in relation to appointment of lay members
- Killing as a manipulation as it relates to Part 6 of the Animal Welfare Act
- Providing assistance to new animal ethics committees
- Production of genetically-modified animals
- Which animal ethics committee should assume the approval role

Appendix 5

Accredited Reviewers

(Pursuant to section 109 of the Animal Welfare Act 1999)

Dr Wendy R **COOK**
AsureQuality Ltd
Private Bag 3080
Waikato Mail Centre
HAMILTON 3240
Phone: 07-8502825
Fax: 07-8502801
Email: wendy.cook@asurequality.com

Dr Michael D **GRANT**
AsureQuality Ltd
PO Box 307
PUKEKOHE 2340
Phone: 09-2371801
Fax: 09-2383757
Email: michael.grant@asurequality.com

Dr G Lester **LAUGHTON**
AsureQuality Ltd
PO Box 644
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Phone: 03-2146757
Fax: 03-2146760
Email: laughtonl@asurequality.com

Dr Alan B **MACLEOD**
25 Milford Street
Aotea
PORIRUA 5024
Phone: 04-2389606
Email: alanbmacleod@yahoo.com

Dr David R **MORGAN**
Landcare Research NZ Ltd
PO Box 40
LINCOLN 7640
Phone: 03-3219750
Fax: 03-3252418
Email: morgand@landcareresearch.co.nz

Dr Keith D **PATERSON**
AsureQuality Ltd
24 Plateau Heights
MOUNT MAUNGANUI 3116
Phone: 07-5752635
Email: keith.paterson@asurequality.com

Appendix 6

Definitions from the Animal Welfare Act 1999

EXCERPT FROM SECTION 2(1)

“Animal” –

- (a) Means any live member of the animal kingdom that is–
 - (i) A mammal; or
 - (ii) A bird; or
 - (iii) A reptile; or
 - (iv) An amphibian; or
 - (v) A fish (bony or cartilaginous); or
 - (vi) Any octopus, squid, crab, lobster, or crayfish (including freshwater crayfish); or
 - (vii) Any other member of the animal kingdom which is declared from time to time by the Governor-General, by Order in Council, to be an animal for the purposes of this Act; and
- (b) Includes any mammalian foetus, or any avian or reptilian pre-hatched young, that is in the last half of its period of gestation or development; and
- (c) Includes any marsupial pouch young; but
- (d) Does not include –
 - (i) A human being; or
 - (ii) Except as provided in paragraph (b) or paragraph (c) of this definition, any animal in the pre-natal, pre-hatched, larval, or other such developmental stage:

3 DEFINITION OF “MANIPULATION”-

- (1) In this Act, unless the context otherwise requires, the term “manipulation”, in relation to an animal, means, subject to subsections (2) and (3), interfering with the normal physiological, behavioural, or anatomical integrity of the animal by deliberately –
 - (a) Subjecting it to a procedure which is unusual or abnormal when compared with that to which animals of that type would be subjected under normal management or practice and which involves –
 - (i) Exposing the animal to any parasite, micro-organism, drug, chemical, biological product, radiation, electrical stimulation, or environmental condition; or
 - (ii) Enforced activity, restraint, nutrition, or surgical intervention; or
 - (b) Depriving the animal of usual care; –and “manipulating” has a corresponding meaning.
- (2) The term defined by subsection (1) does not include –
 - (a) Any therapy or prophylaxis necessary or desirable for the welfare of an animal; or
 - (b) The killing of an animal by the owner or person in charge as the end point of research, testing, or teaching if the animal is killed in such a manner that the animal does not suffer unreasonable or unnecessary pain or distress; or
- (c) The killing of an animal in order to undertake research, testing, or teaching on the dead animal or on

prenatal or developmental tissue of the animal if the animal is killed in such a manner that the animal does not suffer unreasonable or unnecessary pain or distress; or

- (d) The hunting or killing of any animal in a wild state by a method that is not an experimental method; or
 - (e) Any procedure that the Minister declares, under subsection (3), not to be a manipulation for the purposes of this Act.
- (3) The Minister may from time to time, after consultation with the National Animal Welfare Advisory Committee and the National Animal Ethics Advisory Committee, declare any procedure, by notice in the Gazette, not to be a manipulation for the purposes of this Act.
- (4) The Minister must, in deciding whether to publish a notice under subsection (3) in relation to a procedure, have regard to the following matters:
- (a) The nature of the procedure; and
 - (b) The effect that the performance of the procedure will or may have on an animal's welfare; and
 - (c) The purpose of the procedure; and
 - (d) The extent (if any) to which the procedure is established in New Zealand in relation to the production of animals or commercial products; and
 - (e) The likelihood of managing the procedure adequately by the use of codes of welfare or other instruments under this Act or any other Act; and
 - (f) The consultation conducted under subsection (3); and
 - (g) Any other matter considered relevant by the Minister.

5 DEFINITION OF “RESEARCH, TESTING, AND TEACHING”–

- (1) In this Act, unless the context otherwise requires, the term “research, testing, and teaching” means, subject to subsections (2) to (4), –
- (a) Any work (being investigative work or experimental work or diagnostic work or toxicity testing work or potency testing work) that involves the manipulation of any animal; or
 - (b) Any work that –
 - (i) Is carried out for the purpose of producing antisera or other biological products; and
 - (ii) Involves the manipulation of any animal; or
 - (c) Any teaching that involves the manipulation of any animal.
- (2) The term defined by subsection (1) does not include any manipulation that is carried out on any animal that is in the immediate care of a veterinarian, if –
- (a) The veterinarian believes on reasonable grounds that the manipulation will not cause the animal unreasonable or unnecessary pain or distress, or lasting harm; and
 - (b) The manipulation is –
 - (i) For clinical purposes in order to diagnose any disease in the animal or any associated animal; or
 - (ii) For clinical purposes in order to assess the effectiveness of a proposed treatment regime for the animal or any associated animal; or
 - (iii) For the purposes of assessing the characteristics of the animal with a view to maximising the productivity of the animal or any associated animal.

- (3) The term defined by subsection (1) does not include any manipulation of an animal –
 - (a) Which is carried out with the principal objective of –
 - (i) Assisting the breeding, marking, capturing, translocation, or trapping of animals of that type; or
 - (ii) Weighing or taking measurements from the animal; or
 - (iii) Assessing the characteristics of animals of that type; and
 - (b) Which is a manipulation of an animal that –
 - (i) Is carried out routinely; or
 - (ii) Is a minor modification of a manipulation that is carried out routinely; and
 - (c) Which is used to fulfill responsibilities and functions under –
 - (i) The Conservation Act 1987; or
 - (ii) Any Act listed in the First Schedule of the Conservation Act 1987; or
 - (iii) Any other Act or regulations under which the Minister of Conservation or the Director-General of Conservation or the Department of Conservation has responsibilities or functions; or
 - (iv) The Fisheries Act 1996.
- (4) For the purposes of this section, an animal is in the immediate care of a veterinarian if the veterinarian –
 - (a) Has accepted responsibility for the health and welfare of the animal; and
 - (b) Is providing the animal with direct and continuing care.
- (5) In the other sections of this Act (except section 57(a)(i)), –
 - (a) The term “research” means any research work that comes within the term defined by subsection (1); and
 - (b) The term “testing” means any testing work that comes within the term defined by subsection (1); and
 - (c) The term “teaching” means any teaching that comes within the term defined by subsection (1).

Appendix 7

Ministry for Primary Industries Animal Use Statistics

All code holders are required to keep records as specified in the Animal Welfare (Records and Statistics) Regulations 1999 in a readily accessible manner. (For record keeping purposes, the term “code holder” includes any person or organisation that has made arrangements to use an existing code and AEC, as well as anyone with an approval to use non-human hominids.)

The records must be retained for a period of five years after the year to which they relate, and an annual return of the figures for the previous calendar year must be submitted to MPI by 28 February each year. In addition, the regulations empower the Director-General of MPI or any inspector appointed under the Animal Welfare Act 1999 to obtain copies of records or details from them at any time. The regulations provide penalties for non-compliance, including late submission of returns or supplying false or misleading figures.

Records of the number of animals used in long-term projects are not reported annually to MPI but every three years or at the end of the year in which the project is completed (if less than three years). Hence annual animal usage detailed below reflects the numbers of animals used in studies that were completed during the year and reported to MPI.

NAEAC, while not responsible for the collection or publication of the statistics, takes an active involvement in their integrity.

App 7.1 Summary of 2011 Animal Use Statistics

A total of 327 674 animals used in research, testing and teaching were reported in 2011, a 35.3 percent increase over the previous year. The rolling 3-year average was marginally down.

The most commonly reported species were (in order) cattle, mice, sheep, and chickens. It is the first time since 1997 that cattle have been the most numerous. In 2011, this species made up 63.0 percent of the farm animals used, and 32.5 percent of the total number. In terms of species groupings, production animals (cattle, sheep, deer, goats and pigs) made up 51.6 percent of the total, with rodents and rabbits together accounting for 26.1 percent and birds a further 12.3 percent. Numbers of all species reported rose except for amphibia, reptiles, horses, mice, rats and “other species”³.

Veterinary research (30.8 percent), animal husbandry research (30.6 percent) and teaching (24.6 percent) were the main reasons for using production animals, accounting for 145 483 animals (86.0 percent of the total for these species). Another 8.5 percent were used in basic biological research. Just over 88 percent of the rodents were used in testing the safety and efficacy of animal health products, medical research, and basic biological research. The majority of birds were used for animal husbandry research (61.6 percent) and veterinary research (22.8 percent).

Despite the rise in overall numbers of animals used in 2011, 85.4 percent of those animals were exposed to manipulations which had no, virtually no, or little impact on the animals’ welfare, up from 76.8 percent in 2010. A total of 17 581 animals (5.4 percent of the total) experienced manipulations of “high impact” or “very high impact”, 3191 fewer than in 2010, and the lowest number in this category since 2006. The species that experienced a ‘very high’ impact were rodents, fish, pest species and a small number (5) of farm animals.

³ As described in App 7.2.

Although New Zealand's usage of animals classified as transgenic/chimera is low by world standards, 17 042 such animals were used in 2011, 12 508 more than in 2010.

More than 63 percent of animals returned to their normal environment following their use in manipulations. 97 percent of production animals remained alive following use. However, more than 97 percent of rabbits and rodents were 'dead or euthanased' following manipulation.

Cattle, mice and one horse were used in work aimed at developing methods to replace or reduce the use of live animals in research, testing and teaching.

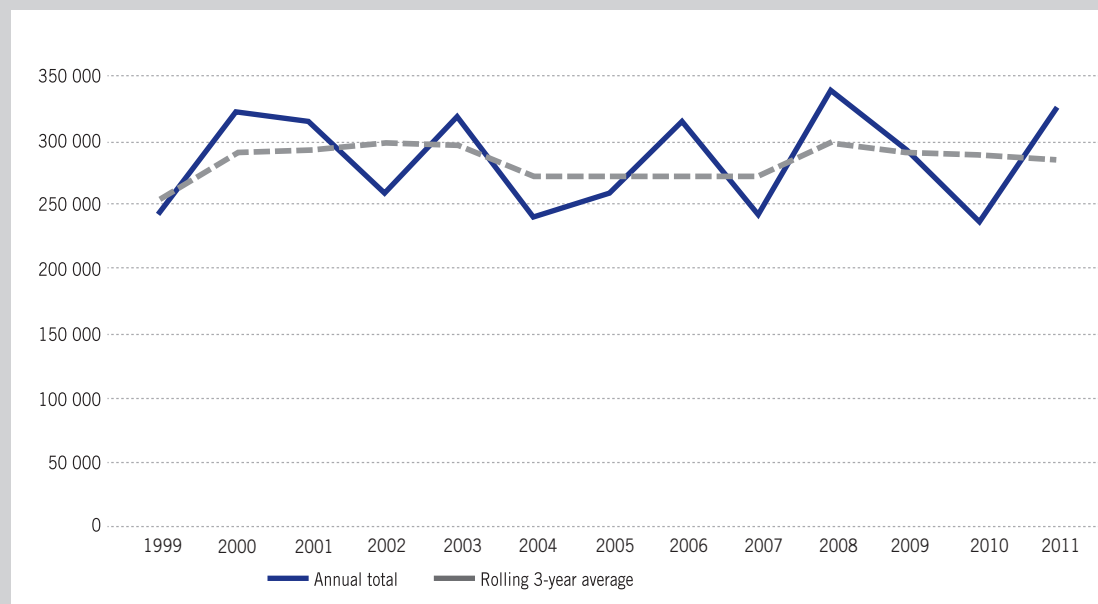
App 7.2 Animal Usage

During 2011 a total of 327 674 animals⁴ were reported as manipulated⁵ in research, testing and teaching⁶. This was an increase of 35.3 percent compared to 2010, when 242 149 animals were reported.

Much of the annual variability in the statistics can be attributed to the three-yearly cycle of reporting of long-term projects. Reports for animals used in long-term projects are not required every year but every three years when the project is completed or AEC approval of the project expires, whichever comes first. In both 2009 and 2010, the numbers fell, and an increase in 2011 was predicted on the likelihood that a number of long-term studies would be reported.

Despite the increase in 2011 numbers, the three-year rolling average, a truer reflection of overall use, actually fell. To illustrate the influence of the three-yearly reporting cycle, the accompanying graph shows the rolling three-year average compared with the annual totals. Between 2000 and 2003 the rolling average was around 300 000 (294 801 to 302 221), between 2004 and 2007 it was nearer 275 000 (275 942 to 276 906). The 2008 to 2011 rolling averages have gradually fallen from a high of 302 225 in 2008.

Animals manipulated between 1999 and 2011



⁴ As defined in section 2(1) of the Animal Welfare Act 1999. This definition is set out in Appendix 6 of this report.

⁵ As defined in section 3 of the Animal Welfare Act 1999. This definition is set out in Appendix 6 of this report.

⁶ As defined in section 5 of the Animal Welfare Act 1999. This definition is set out in Appendix 6 of this report.

Those species most commonly reported in 2011 were (in order) cattle, mice, sheep, and chickens, which collectively accounted for 77.0 percent of the total animals manipulated for RTT. Mice, sheep and cattle have all been included in the four most commonly used animals since 1989. This year, chickens replaced fish as one of the four most commonly used animals.

Most species were used in larger numbers than in the previous year. The biggest numerical increase was reported for cattle (+ 64 205), a 151.6 percent rise. The other species with higher numbers were chickens (+ 29 350, a 1216.8 percent rise), deer (+ 7685, an 84.5 percent rise), fish (+ 4861, a 31.1 percent rise), other birds (+ 3549, a 73.5 percent rise), cephalopods/crustacea (+ 1353, a 43.6 percent rise), goats (+ 525, a 45.2 percent rise), marine mammals (+ 446, a 210.4 percent rise), cats (+ 424, a 76.5 percent rise), possums (+ 406, a 33.2 percent rise), pigs (+ 314, a 61.2 percent rise), dogs (+ 234, a 28.7 percent rise), rabbits (+ 65, a 3.5 percent rise), guinea pigs (+ 64, a 2.8 percent rise), and pigeons (+ 23, a 9.2 percent rise). For other species, the numbers declined. The largest decrease was recorded in the number of mice (- 14 012), a 16.6 percent decline. Other species to show reductions in overall usage were sheep (- 12 575, a 22.5 percent decrease), rats (- 541, a 4.8 percent decrease), "other" species (- 443, a 50.2 percent decrease), amphibia (- 205, a 25.3 percent decrease), horses (- 181, a 21.5 percent decrease) and reptiles (- 22, a 1.3 percent decrease). See Appendix 8 for further detail.

Overall, the use of agricultural livestock increased by 55.2 percent (+ 60 154). The majority of this year's increase can be attributed to the reporting at project end of more cattle for teaching purposes (+ 31 225), veterinary research (+ 28 401) and animal husbandry research (+ 7387), and of more deer (+ 7685) used for veterinary research (+ 8346), testing (+ 2023) and animal husbandry research (+ 1545). While the numbers of sheep used in animal husbandry research rose slightly to 21 900 (+ 624) and in veterinary research to 6974 (+ 929), fewer sheep were used for basic biological research (- 5371), testing (- 6989) and production of biological agents (- 4650).

Rodent use fell by 14.8 percent (- 14 489), mainly due to decreased use in production of biological agents (- 9315), medical research (- 8010) and testing (- 2794). This was offset to some extent by increased mouse numbers for animal husbandry research (+ 2361), basic biological research (+ 1860) and the development of alternatives (+ 614).

Bird use rose steeply from 7492 in 2010 to 31 762 in 2011. This was mainly due to an increase of 29 350 in use of chickens/fowls, although "other" bird numbers also rose by 73 percent. The majority of chickens (80 percent) were used in animal husbandry research. "Other" birds were mainly used in veterinary and basic biological research.

Fish numbers increased over 2010 figures by 4861. Thirty-eight percent of the fish were used for basic biological research, 25 percent for veterinary research, and 17 percent for each of environmental management and teaching.

The 43.6 percent increase in numbers of cephalopod/crustacea was largely due to a significant rise (+ 3570) in use for basic biological research, partially offset by a drop in numbers for teaching (- 2657). Reptiles, used in similar numbers to last year, were manipulated for basic biological research (59.6 percent), species conservation (39.8 percent) and teaching (0.5 percent). A rise of 999 in the number of possums used for environmental management purposes was the main reason for a 33.2 percent increase in numbers for this species. All 658 marine mammals (+ 446) reported in 2011 were used for species conservation research. A drop in the numbers of amphibia used for species conservation (- 673), partially offset by a rise in numbers for basic biological research (+ 385), contributed to the 25.3 percent decrease overall for this species.

The majority of dogs (92 percent) were used for teaching (66.1 percent) and veterinary research. Dogs were also used for species conservation (3.4 percent), basic biological research (2.5 percent), medical research (0.7 percent), testing (0.3 percent) and "other" purposes 0.8 percent). Teaching (42 percent)

and veterinary research (22.1 percent) were also the major uses for cats, although this species was also manipulated for species conservation (11.8 percent), environmental management (10.0 percent), basic biological research (7.6 percent) and testing (6.5 percent) purposes. Most horses were used in the production of biological agents (66.1 percent) and teaching (29.4 percent).

In 2011, 440 animals were reported in the “miscellaneous species” category, down from 883 in 2010. They included 93 mustelids (stoats, ferrets and weasels) and 72 hedgehogs for environmental management; 205 bats for species conservation and basic biological research; 66 alpaca – six for basic biological research and 60 for teaching; and 4 chinchillas for teaching purposes.

Wherever it appears, the category “cats” includes feral cats. Likewise, wild rats and mice are included in the “rats” and “mice” categories and feral pigs in the “pigs” category.

App 7.3 Source of Animals

Code holders are required to report on the source of the animals manipulated according to specified categories. The table below shows the percentage of animals that came from each source in the past two years.

Source of animals	2011	2010
	%	%
Farms	47.1	38.6
Breeding units	23.7	41.3
Commercial sources	13.2	6.1
Born during project	7.5	2.7
Captured	7.0	9.6
Public sources	1.1	1.4
Imported	0.4	0.2

The number of animals sourced from farms in 2011 increased by 60 726 animals, or 64.9 percent, reflecting the higher cattle, deer, goat and pig numbers. More animals were also sourced from commercial (+193.0 percent) and public sources (+6.2 percent), while 247.7 percent more animals were born during projects and 165.8 percent more animals were imported into New Zealand. The number of animals sourced from breeding units fell 22.4 percent to 77 581 while the number of animals captured for research fell by 1.5 percent, including 6645 fewer fish. Other species captured included birds (7136), deer (52), pigs (13), amphibia (588), cephalopod/crustacea (4317), marine mammals (6), possums (1629), reptiles (1643), cats (223), rabbits (138), mice (795), rats (505) and 370 “other” species (bats, ferrets, hedgehogs, stoats and weasels).

In 2011, 94.0 percent of farm animals were sourced from farms or commercial organisations, with a further 5.5 percent - mostly sheep – born during projects, a rise of 4416 from the previous year. Farm animals, which were used by 52 organisations or individuals (hereafter referred to as organisations), were also sourced from breeding units (0.5 percent) and public sources (<0.1 percent), while 65 animals (52 deer and 13 pigs) were captured.

The majority of rodents (79.3 percent) (used by 31 organisations) and rabbits (82.8 percent) (used by 17 organisations) came from breeding units, and together accounted for 87.5 percent of all animals from that source in 2011. Rodents were also born during projects (15.6 percent), obtained from commercial sources (1.8 percent), imported (1.6 percent), captured (1.6 percent) and obtained from public sources (0.2 percent). Rabbits were also captured (7.2 percent), obtained from commercial sources (4.6 percent), obtained from public sources (3.6 percent), imported (1.4 percent), born during projects (0.3 percent) and sourced from a farm (<0.1 percent).

The majority of chickens, which made up 78.6 percent of total birds used, were obtained from commercial sources (99.8 percent) and were used by 12 organisations. The majority of birds other than chickens and pigeons were captured (84.5 percent). Pigeons were used by 6 organisations and “other” birds were used by 18 organisations.

While in 2010, the majority of fish, used by 14 organisations, were captured (77.7 percent), this year that proportion fell to 26.8 percent, with others obtained from breeding units (40.8 percent), from farms (18.0 percent), born during projects (10.6 percent), from commercial organisations (3.3 percent) and from public sources (0.4 percent). Twenty-four fish (0.1 percent) were imported. While six marine mammals (used by 2 organisations) were classified as “captured”, the remaining 652, classified as “obtained from public sources”, were sampled using a remote biopsy protocol for the study of their genetic diversity and population structure.

The amphibia (used by 3 organisations), cephalopods/crustaceans (7 organisations), possums (7 organisations), and reptiles (11 organisations) were mostly captured. Dogs (15 organisations) were mostly obtained from public sources (92.1 percent) or breeding units (5.4 percent). Cats (used by 15 organisations) also came from public sources (40.0 percent) and breeding units (35.1 percent), but 223 (22.8 percent) were captured. Horses were used by a total of 9 organisations and mostly supplied from farms and public sources.

App 7.4 Status of Animals

Code holders are required to categorise the status of the animals they use. The following table breaks down the animal status for the past two years.

Status of animals	2011	2010
	%	%
Normal/conventional	87.2	89.7
Transgenic/chimera	5.2	1.9
Unborn/pre-hatched	3.0	0.4
SPF/germ-free	2.3	4.2
Protected species	1.8	2.4
Diseased	0.6	1.0
Other	<0.1	0.4

The majority (87.2 percent) of animals manipulated in RTT in New Zealand in 2011 were classified as normal, healthy, conventional animals.

In 2011, 17 042 animals were classified as transgenic/chimera, the largest number in this category since records have been kept, and 12 508 more than in 2010. The majority of these were mice (89.6 percent), with fish (10.0 percent), cattle (0.4 percent) and rats (<0.1 percent) making up the total. Six organisations used transgenic/chimera in 2011 compared to five in 2010. Perhaps reflecting our relatively small biomedical research industry, New Zealand’s usage of this category of animal is low by world standards. In the United Kingdom 2009 Home Office statistics, genetically modified animals outnumbered “normal” animals for the first time.

The large rise from 2010 in the numbers of animals in the unborn/pre-hatched category (+ 8786) was mainly due to the use of 6086 chicken eggs used for ongoing surveillance for avian influenza and other bird pathogens. A total of 3000 fish eggs were used for teaching purposes. Unborn sheep (616) and cattle (109) made up the total.

Fewer animals manipulated for RTT had a specific pathogen-free (SPF) or germ-free status than in 2010. Most of these animals were rodents (99.3 percent), but also included 27 rabbits and 19 pigeons.

A similar number of animals with protected species status were manipulated in 2010 and 2011 (5803 cf 5778). Protected birds (3306), reptiles (1593), marine mammals (658), bats (205), amphibia (15) and one fish were manipulated for RTT in 2011.

Sheep (1298) made up 70.0 percent of the animals used with a “diseased”⁷ status. Cattle (314), mice (218), amphibia (12), dogs (10), cats (1) and birds (1) made up the difference.

App 7.5 Outcome

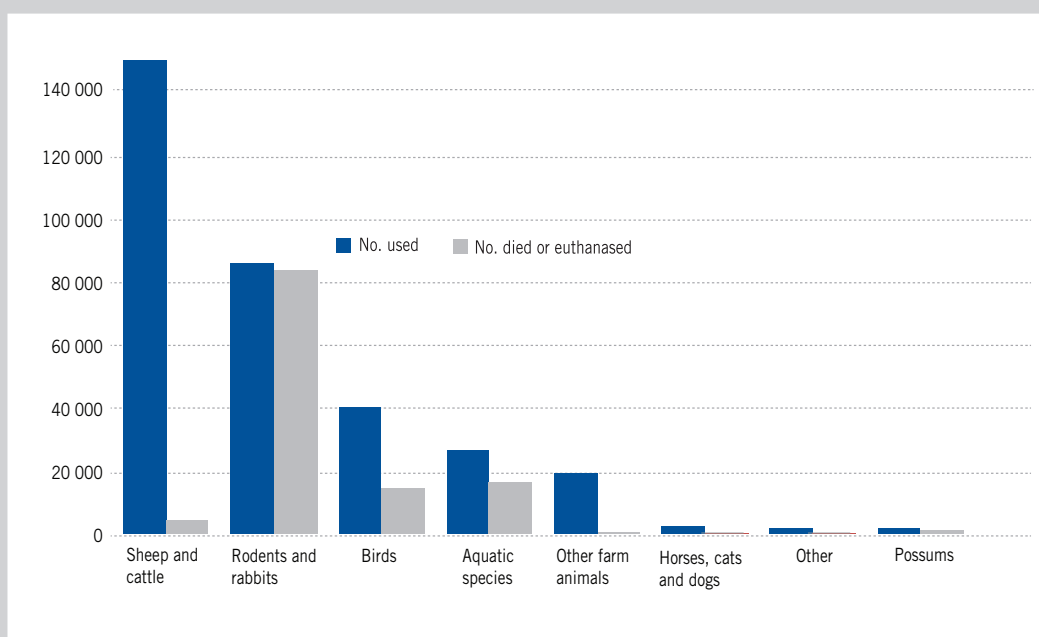
Appendix 8 shows the five-year summary of the animals used (by species) and the percentages that died or were euthanased during, or after, manipulations. 63.2 percent of animals remained alive after use, and of these 76.4 percent were returned to owners, 12.4 percent were retained by the institution, 7.7 percent were released to the wild and 3.5 percent were disposed of to others.

The proportion of animals that died or were euthanased during, or after, manipulations in 2011 was 36.8 percent compared to 43.2 percent the previous year, although the actual numbers in this category rose by 15 759.

The high survival rates (97.0 percent) for livestock reflect the number of trials of low invasiveness that take place while the animals remained in their normal farm environment and continued as part of the herd/flock at the conclusion of the trial.

The following histogram shows information on the proportion of animals that died or were euthanased for the major groups of species.

Animal use by species reported in 2011

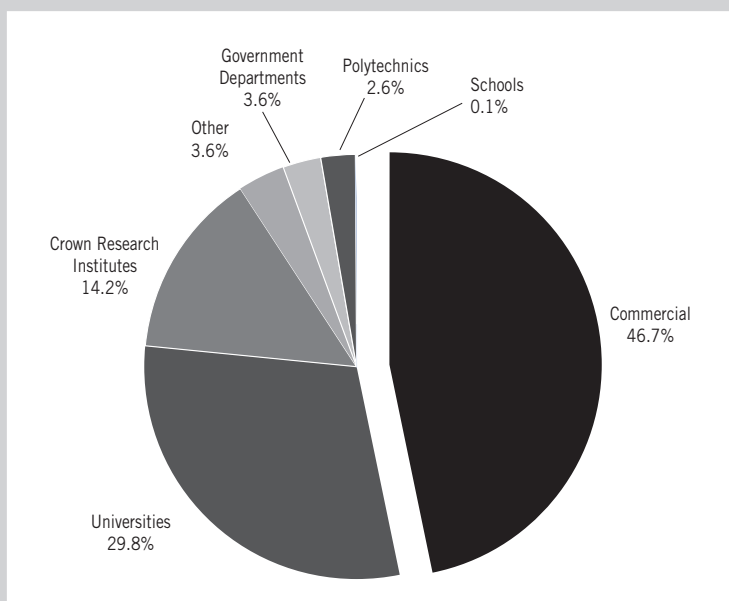


App 7.6 Organisation Type

Appendix 9 tabulates animal usage by organisation type over the past five years. The pie chart overleaf shows the 2011 information graphically. The top three user groups in 2011 were (in order) commercial organisations, universities and CRIs, the same as in the previous five years.

⁷ Animals afflicted with naturally occurring disease, the focus of study usually being the cause, effects, cure or prevention of the disease.

Animal usage by organisation type



Commercial organisations used 65 017 more animals than in 2010. Commercial organisations used more animals in veterinary research (+ 38 724), teaching (+ 31 009) and animal husbandry research (+ 12 052) in 2011. Fewer animals were manipulated for production of biological agents (- 16 371) and testing (- 4974). Six hundred and twenty-six animals (mice and cattle) were used in the development of alternatives.

Universities reported 27 622 more animals in 2011. More animals were used for animal husbandry (+ 28 730) and medical research (+ 5674). Fewer animals were used in testing (- 7879) and veterinary research (- 3426). One horse was used in the development of alternatives.

CRI's animal use fell by 5989 to 46 537 in 2011. An increase in the number of animals used for environmental management (+ 3719) and veterinary research (+ 2743) was offset by decreases for, amongst other reasons, basic biological research (- 7285), and animal husbandry research (- 4759). Ten cattle were used in the development of alternatives.

Government departments reported the use of 9632 animals in 2011, compared to only 290 in 2010. Most of these (90.2 percent) were used for veterinary research, specifically, for investigation and surveillance of exotic avian diseases. Others were used for species conservation (6.2 percent) and environmental management (3.6 percent).

Organisations in the 'other' category include non-university medical research institutes, zoos/wildlife parks and individuals. The number of animals reported from this sector almost halved from 22 843 in 2010 to 11 910 in 2011. The vast majority of these (94.7 percent) were rodents used for medical research. The numbers were made up by 449 sheep for animal husbandry research and 162 deer for veterinary research.

Polytechnics and institutes of technology reported a 64.6 percent increase (+ 3401) in the number of animals manipulated in 2011 compared with 2010. The wide varieties of animals manipulated by this sector were nearly all (99.6 percent) used for teaching, usually for low impact animal husbandry /

veterinary nursing or similar training. Small numbers of animals were used for species conservation and basic biological research.

The use of animals in RTT in schools fell sharply from 3254 reported in 2010 to 319 in 2011. The wide range of animals, including cephalopods/crustaceans, rodents, chickens and other birds, cats, dogs, possums, horses, fish, rabbits and one reptile, were all used for teaching purposes.

App 7.7 Animal Reuse

In 2011, 4.2 percent of animals were used more than once for RTT. There has consistently been between 4 percent and 8 percent of animals reused in RTT since 2002. Domestic animals (including livestock) made up 85.4 percent of the animals that were reused. With the exception of pigs, cephalopods/crustaceans and marine mammals, a small number of every animal species were reported as being used more than once in 2011.

App 7.8 Purpose of Manipulation

Organisations are required to provide information on the purpose of manipulations (in broad categories). The table below shows the breakdown and compares the 2011 figures with those reported in 2010. Descriptions of the “purpose of manipulation” categories are outlined in Appendix 9.

Purpose of manipulation	% of animals used	
	2011	2010
Animal husbandry	24.2	17.7
Veterinary research	19.7	7.8
Teaching	15.2	6.7
Basic biological research	14.7	20.6
Testing	10.3	19.6
Medical research	9.9	14.8
Production of biological agents	1.9	9.3
Environmental management	2.2	1.1
Species conservation	1.2	1.9
Other	0.5	0.4
Development of alternatives	0.2	0.0

The highest proportion of animals were manipulated for animal husbandry research in 2011, with numbers increasing from 42 831 in 2010 to 79 183. This was to a large part due to the reporting of three routine studies evaluating feedstuffs for chickens which took place concurrently over a three-year period and concluded simultaneously. There was also a rise of nearly 10 000 farm animals, mainly sheep (21 900) and cattle (25 524), over the previous year. Other species reported in 2011 as manipulated for animal husbandry include deer (4173), mice (2316), pigs (171), rats (108), possums (72), other birds (19) and rabbits (2). Universities (40.5 percent), CRIs (29.9 percent), commercial organisations (29.0 percent), and other institutions (0.6 percent) reported manipulating animals for animal husbandry purposes in 2011.

The number of animals used in veterinary research rose substantially in 2011 (64 597 compared to 18 849 in 2010). The largest changes were reported in farm animals (+37 983) and birds (+8417). Farm animals, chickens and other domestic mammals made up 91.1 percent of animals used in this category. Veterinary

research was undertaken by commercial organisations (73.6 percent), government departments (13.5 percent), CRIs (6.4 percent), universities (6.3 percent) and “other” organisations (0.3 percent).

The number of animals used in teaching more than tripled in 2011 to 49 958 compared to 16 303 in 2010. This was mainly due to a substantial rise in the numbers of farm animals, particularly cattle, with the rise attributable to the reporting at the end of a three year cycle of a routine and ongoing project involving the training of technicians in the artificial insemination of cows. Numbers of cephalopod/crustaceans used for teaching fell from 2879 to 222. All species except marine mammals were used for teaching purposes. Commercial organisations reported most animal use in teaching in 2011, accounting for 69.6 percent of the total compared to 23.2 percent in 2010, once again due to the training project reported above. Other organisations involved in teaching were polytechnics (17.3 percent), universities (12.2 percent) schools (0.6 percent) and CRIs (0.2 percent).

While the proportion of animals used in basic biological research fell in 2011, the numbers were similar, with only 1670 fewer animals manipulated in this category than in 2010. A rise of 3570 and 1870 in the number of cephalopod/crustacea and rodents respectively was partially offset by a fall of 4377 and 3482 in the number of fish and farm animals respectively used for basic biological research. The number of reptiles (+ 689), amphibia (+ 385), birds (+ 217), cats (+ 42), dogs (+ 26), rabbits (+ 24) horses (+ 15) and “other” species (+ 3) increased, while the number of possums decreased (- 569). “Other” species included seven bats and six alpaca. No marine mammals were manipulated in this category in 2011 compared with 83 in 2010. Universities (61.4 percent), CRIs (25.1 percent), commercial organisations (13.6 percent) conducted the bulk of this research, with “other” organisations, government departments and polytechnics using only 10 animals altogether in this category.

The number of animals manipulated for the purposes of testing decreased from 47 580 reported in 2010 to 33 769 in 2011. The decrease can largely be attributed to a fall in the number of farm animals (- 10 682) and rodents (- 2794). Rabbits and rodents accounted for 94.2 percent of the animals used in this category. Other animals used for testing included birds (80), cats (64), fish (5) and dogs (3). Commercial organisations (98.2 percent), CRIs (1.2 percent) and universities (0.6 percent), reported manipulating animals for testing purposes in 2011.

The number of animals reported as being manipulated for medical research fell from 35 823 in 2010 to 32 459 in 2011. Rabbits and rodents made up 78.6 percent of the total, with a drop in numbers of 8059 over 2010. Other animals manipulated in this category included 5197 fish, 1713 sheep, 28 pigs and seven dogs. Medical research was undertaken by universities (61.3 percent), “other” organisations (34.8 percent), CRIs (3.0 percent) and commercial organisations (1.0 percent).

The number of animals reported utilised in the production of biological agents fell from 22 556 in 2010 to 6199 in 2011, mainly due to falls in the use of rodents (- 9315) and farm animals (- 7112). Other animals used for the production of biological agents included rabbits (472), horses (436) and cephalopod/crustacea (50). Commercial organisations carried out 99.2 percent of this work.

Environmental management research used 7101 animals in 2011, a rise of 158 percent. This was mainly due to a more than twofold increase in the number of fish, which remain the most common species used for this purpose (49.7 percent). Other species used for this research include possums (1196), cattle (847), cephalopod/crustacea (502), rats (243), mice (238), rabbits (174), cats (98), hedgehogs (72), birds (71), ferrets (66), deer (35), stoats (16) and weasels (11). CRIs (60.4 percent), universities (30.0 percent), government departments (4.9 percent) and commercial organisations (4.7 percent) all undertook environmental research.

Animal numbers reported for species conservation in 2011 dropped by 16.8 percent to 3770. Numbers for birds (- 334), bats (- 274), fish (- 126) rats (- 102) and dogs (-14) all fell. Marine mammals (658), reptiles

(663) and cats (115) were also manipulated for species conservation purposes. No amphibia were used for species conservation in 2011 compared to 673 in 2010. The majority of work in this area was undertaken by universities (77.6 percent), government departments (15.7 percent) and CRIs (5.6 percent) with the remainder of animals used for this purpose by polytechnics (0.8 percent) and commercial organisations (0.3 percent).

Animals used in the development of alternatives included cattle (10), mice (614) and one horse. Details of these projects are given in App 7.10.

App 7.9 Grading of Animal Manipulations

Animal manipulations are graded according to a five point scale as specified in the Animal Welfare (Records and Statistics) Regulations. The name and description of the scale was changed in 2008 to better reflect the overall estimate of the impact or invasiveness of each animal use. The five grades are:

- “no impact or virtually no impact” – manipulations that causes no stress or pain or virtually no stress or pain
- “little impact” – manipulations of minor impact and short duration
- “moderate impact” – manipulations of minor impact and long duration or moderate impact and short duration
- “high impact” – manipulations of moderate impact and long duration or high impact and short duration
- “very high impact” – manipulations of high impact and long duration.

A more comprehensive description of the grading system has been published in the MPI publication *Animal Use Statistics* and is available on the website <http://www.biosecurity.govt.nz/files/regs/animal-welfare/pubs/naeac/2010-animal-use-statistics-web.pdf>

Appendix 11 summarises the impact grade allocated to animals manipulated for RTT and reported in 2011.

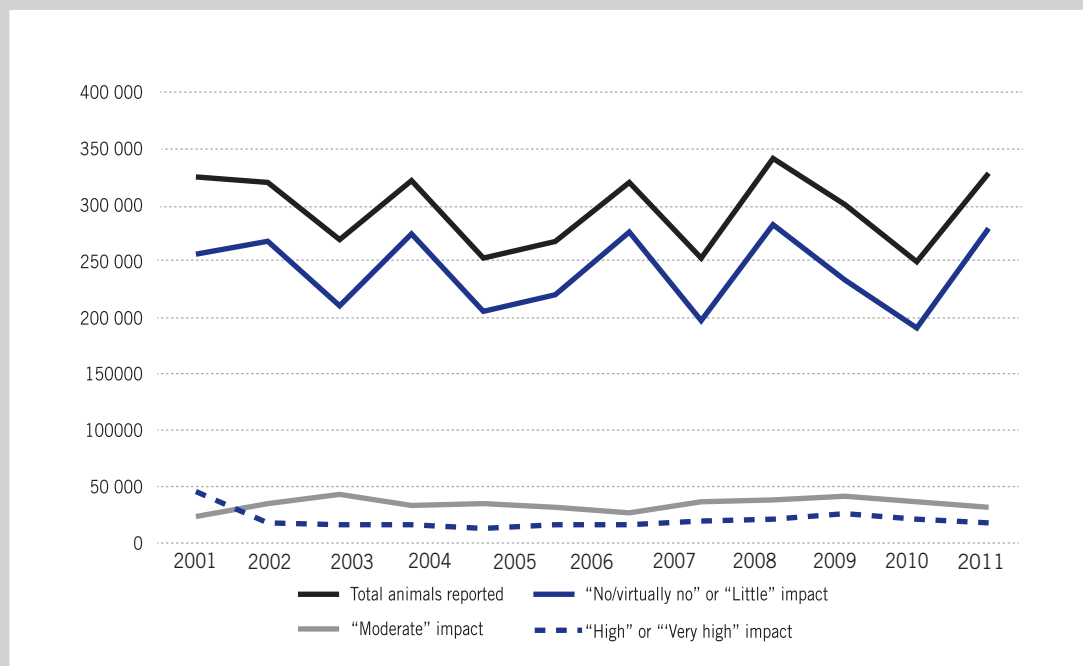
App 7.9.1 Long-term trends of the impact of RTT on the animals used in New Zealand

The number of animals that experience “no/virtually no” or “little” impact fluctuates between years. This fluctuation usually correlates with the change in total number of animals used. In the last 12 years the number of animals reported in these grades has consistently been between 76.4 percent and 87.0 percent of the total number of animals used each year. In 2011, 85.4 percent of the animals were exposed to manipulations which had no, virtually no, or little impact on the animal, up from 76.8 percent in 2010. The largest changes were recorded in the number of farm animals (+ 12 892) and birds (+ 34 342) manipulated in these grades in 2011.

In 2011, 9.2 percent (30 097) of animals were used in manipulations of “moderate impact”, a drop of 5339 in this category. Increases in the number of fish (+ 2060) were offset by a drop of 8968 in the number of rodents allocated to this grade.

In 2011, a total of 17 581 animals (5.4 percent of the total) experienced manipulations of “high impact” or “very high impact”, 3191 fewer than in 2010, and the lowest number in this category since 2006. The major changes in this category were a rise of 3187 in the number of fish, and a fall of 6635 in the number of mice.

Impact of manipulations on animals used for RTT over the last 12 years



App 7.9.2 Manipulation grading of animals reported in 2011

The increase in the number of animals manipulated for RTT in 2011 was reflected mainly in those experiencing “no or virtually no impact”, where numbers rose from 58 066 (24.0 percent of the total) in 2010 to 152 677 (46.6 percent of the total) in 2011. Numbers also rose in the “high impact” category from 1819 (0.8 percent of the total) in 2010 to 2185 (0.7 percent of the total) in 2011. Numbers in the other three categories fell – “very high impact” by 18.8 percent (-3557), “moderate impact” by 15.1 percent (- 5339) and “little impact” by 0.4 percent (- 556).

Summary of the impact manipulations in animals used for RTT in 2011

2011 summary	Total reported	No/virtually no impact	Little impact	Moderate impact	High impact	Very high impact
Rodents and rabbits	85 524	9 889	40 309	22 110	1 079	12 137
Sheep and cattle	149 830	102 553	44 210	2 663	399	5
Aquatic species ¹	26 196	6 070	13 574	3 365	59	3 128
Other domestic species	21 977	13 335	8 430	173	39	0
Birds	40 414	20 462	19 433	519	0	0
Possums	1 629	165	370	371	609	114
Other ²	2 104	203	993	896	0	12
Grade totals	327 674	152 677	127 319	30 097	2 185	15 396
Grade percentages		46.6%	38.9%	9.2%	0.7%	4.7%

¹ “Aquatic species” includes amphibians, fish, marine mammals and cephalopods/crustaceans.

² “Other” includes reptiles and miscellaneous species as described in App 7.2.

Animals featuring in the “very high impact” group were rodents, fish, pest species, sheep (3) and cattle (two).

Animals in this and the ‘high impact’ grades were manipulated in the following ways.

- Possums, rabbits, rats and stoats were used in studies designed to identify more environmentally friendly and humane toxins and tools for pest control.
- Guinea pigs were used in batch release testing for animal vaccines as a regulatory requirement to demonstrate potency.
- The majority of the mice (73 percent) were used in testing of antigens and animal vaccines mandated by regulation. Some (1646) were used for public health testing for food safety, mainly for algal bloom-induced marine biotoxins. The biotoxins are bioaccumulated by shellfish and can cause acute illness and even death in shellfish consumers. Testing on mice (bioassay testing) has now been replaced because of the development in New Zealand of non-animal tests. Mice were also used in medical and veterinary research, production and evaluation of biological reagents, toxicity testing and the development of alternatives to animal use.
- As well as those used in environmental management, five rats were used for regulatory required testing. One rat, part of a study for basic biological research, was promptly euthanased after developing an unanticipated skin lesion.
- Cattle were used for basic biological research and animal husbandry, including a number which died during on farm animal husbandry trials, most of causes unrelated to the research projects in which they were involved. Also included were sixteen cows graded “high impact” because of the need for them to be confined in metabolism stalls for eight days at a time to allow accurate measurement of dry matter intake and faecal and urinary output.
- Sheep were used for veterinary and animal husbandry research. These include three sheep which died during on farm animal husbandry trials, although it was not established whether this was the result of the trial itself or other causes.
- Fish were used in species conservation, veterinary and animal husbandry research.
- Thirty-nine feral cats were trapped, tagged and released to gain information on how far these predators range – an important consideration in species conservation research.

As in 2010, just over 98 percent of farm animals were reported in the low impact grades in 2011, with increases for all farm species except sheep in these grades.

The increase in birds in the low impact grades was mostly a result of the use of the 5886 unborn chickens used in the ongoing surveillance for, and investigation of, exotic avian disease.

The majority (94.5 percent) of cats, dogs and horses were allocated to the two lowest impact grades. The most common use for this group was for teaching (48.3 percent of the total), but they were also used for veterinary research, production of biological agents (horses), species conservation and environmental management, basic biological research, testing, medical research and development of alternatives (one horse).

App 7.10 The Three Rs

Projects recorded as using animals in the development of alternatives included:

- Mice (614) were used to improve existing tests with the aim of being able to reduce the overall numbers of animals required.
- The horse was used in the production of 3D “Virtual Horse” software, with the main purpose being to substantially reduce the number of live horses used for film-making. It allows the production company

to have a horse carry out movements and activities that would be unacceptable for a live horse to perform. The software is anatomically very accurate and is also used for teaching in undergraduate veterinary science papers.

- Ten cattle were part of a project to evaluate, further develop and improve the use of in situ physiological monitoring systems for recording important parameters including body temperature, heart rate, respiration rate, and electrophysiology (e.g. EEG, ECG) that are used to assess the welfare state of an animal. The technology being tested allows data to be collected for several days, without having to continually handle the animal.

Appendix 8

Animal Usage Report: Five-year summary of the number of animals used and the percentage that died or were euthanased (by species)

	2011		2010		2009		2008		2007	
	No used	% died or euthanased	No used	% died or euthanased	No used	% died or euthanased	No used	% died or euthanased	No used	% died or euthanased
Amphibia	606	13	811	7	2 378	14	264	5	272	9
Birds	40 414	35	7 492	33	49 023	78	31 053	23	5 907	18
Cats	978	10	554	1	1 132	12	804	4	663	13
Cattle	106 546	<1	42 341	2	24 763	3	69 564	1	30 030	2
Cephalopods/ crustaceans	4 460	52	3 107	7	n/a	n/a	n/a	n/a	n/a	n/a
Deer	16 779	<1	9 094	1	5 967	3	2 951	6	4 242	12
Dogs	1 048	12	814	7	690	7	792	5	1 071	–
Fish	20 472	67	15 611	15	23 736	46	41 057	44	14 218	31
Goats	1 686	<1	1 161	5	3 231	6	1 374	1	2 025	0
Guinea pigs	2 380	97	2 316	96	4 061	99	3 075	98	3 374	97
Horses/ donkeys	659	3	840	2	709	1	525	1	540	1
Marine mammals	658	0	212	0	651	0	1 535	0	82	–
Mice	70 608	98	84 620	94	90 982	91	87 154	98	94 714	86
Pigs	827	55	513	69	995	24	417	58	1 159	20
Possums	1 629	84	1 223	76	4 797	63	1 644	80	1 263	79
Rabbits	1 911	94	1 846	95	2 018	97	2 049	96	1 950	92
Rats	10 625	93	11 166	96	17 333	82	13 960	95	20 488	97
Reptiles	1 664	1	1 686	14	7 422	1	2 327	1	345	26
Sheep	43 284	8	55 859	5	45 991	9	78 093	4	62 657	5
Misc. species	440	8	883	31	11 232	13	2 882	13	1 667	22
Total no. used	327 674		242 149		297 111		341 520		246 667	
Yearly %		37%		43%		55%		40%		48%

Appendix 9

Animal Usage Report: Five-year summary of animal usage (by organisation type)

Group	Year	Rats, mice guinea pigs, rabbits	Sheep, cattle, goats	Other domestic animals	Birds	Fish	All other species	Total
Universities	2007	38 332	10 939	1 862	4 820	12 166	1 456	69 575
	2008	43 323	13 543	3 442	26 437	34 118	2 876	123 739
	2009	26 709	3 502	2 795	3 335	22 004	20 294	78 639
	2010	26 388	13 694	7 551	6 170	12 817	3 373	69 993
	2011	32 487	13 006	2 417	31 010	12 220	6 475	97 615
Commercial organisations	2007	41 593	45 265	1 407	142	–	261	88 668
	2008	47 551	97 601	723	3 728	–	27	149 630
	2009	62 351	41 188	757	77	–	317	104 690
	2010	49 032	38 142	520	4	2	278	87 978
	2011	37 994	102 292	12 426	107	1	175	152 995
Crown research institutes	2007	17 980	33 152	3 447	218	1 750	1 178	57 725
	2008	12 825	34 899	712	377	6 810	1 959	57 582
	2009	15 326	26 218	4 250	2 827	1 360	5 354	55 335
	2010	4 162	42 261	3 055	1 014	977	1 057	52 526
	2011	3 407	31 157	4 522	294	5 026	2 131	46 537
Polytechnics	2007	261	1 745	882	219	275	18	3 400
	2008	203	2 065	500	89	66	15	2 938
	2009	215	2 779	1 403	74	16	70	4 557
	2010	172	4 030	636	130	109	188	5 265
	2011	121	4 612	589	116	3 158	70	8 666
Government departments	2007	143	–	55	454	–	76	728
	2008	13	300	–	369	1	2 552	3 235
	2009	19	–	256	42 572	–	419	43 266
	2010	51	–	8	91	–	140	290
	2011	167	–	122	8 824	60	459	9 632
Other	2007	22 184	3 552	–	54	–	15	25 805
	2008	2 120	–	–	15	–	53	2 188
	2009	9 686	–	–	108	332	25	10 151
	2010	20 062	1 152	–	24	1 600	5	22 843
	2011	11 292	449	162	7	–	–	11 910
Schools	2007	33	59	22	–	27	625	766
	2008	203	623	112	38	62	1 170	2 208
	2009	88	298	32	30	24	1	473
	2010	81	82	45	59	106	2 881	3 254
	2011	56	–	53	56	7	147	319
TOTAL	2007	120 526	94 712	7 675	5 907	14 218	3 629	246 667
	2008	106 238	149 031	5 489	31 053	41 057	8 652	341 520
	2009	114 394	73 985	9 493	49 023	23 736	26 480	297 111
	2010	99 948	99 361	11 815	7 492	15 611	7 922	242 149
	2011	85 524	151 516	20 291	40 414	20 472	9 457	327 674

Appendix 10

“Purpose of Manipulation” Categories

Category	Description
Teaching	Animals used for teaching or instruction, at any level.
Species conservation	Work directed towards species conservation. The species to be conserved may or may not be directly involved, e.g. nutrition studies using more common species can benefit an endangered species.
Environmental management	Environmental management, including the control of animal pests and research into methods of reducing production of greenhouse gases.
Animal husbandry	Animal husbandry, including reproduction, nutrition, growth and production.
Basic biological research	Basic biological research.
Medical research	Research aimed at improving the health and welfare of humans, but not research on human subjects.
Veterinary research	Research aimed at improving the health and welfare of production and companion animals.
Testing	Animals used for public health testing or to ensure the safety, efficacy or quality of products to meet regulatory requirements for human or animal products, either in New Zealand or internationally.
Production of biological agents	Animals used for raising antibodies or for the supply of blood products.
Development of alternatives	Work aimed at developing methods to replace or reduce the use of live animals in research, testing and teaching.
Other	Manipulations for purposes other than those listed above.

Appendix 11

Summary of the impact grade allocated by species in 2011

Species	No impact	Little impact	Moderate impact	High impact	Very high impact	Total
Amphibians	17	589	–	–	–	606
Birds	20 462	19 433	519	–	–	40 414
Cats	548	299	92	39	–	978
Cattle	80 449	25 482	579	34	2	106 546
Cephalopods/ crustacea	2 230	1 241	989	–	–	4 460
Deer	11 965	4 774	40	–	–	16 779
Dogs	641	401	6	–	–	1 048
Fish	3 823	11 086	2 376	59	3 128	20 472
Goats	–	1 673	13	–	–	1 686
Guinea pigs	33	592	105	989	661	2 380
Horses	153	494	12	–	–	659
Marine mammals	–	658	–	–	–	658
Mice	8 936	31 878	18 381	48	11 365	70 608
Pigs	28	789	10	–	–	827
Possums	165	370	371	609	114	1 629
Rabbits	198	1 596	81	36	–	1 911
Rats	722	6 243	3 543	6	111	10 625
Reptiles	147	889	628	–	–	1 664
Sheep	22 104	18 728	2 084	365	3	43 284
Misc. species	56	104	268	–	12	440
TOTAL	152 677	127 319	30 097	2 185	15 396	327 674