

2009 REVIEW
OF THE
ANIMAL WELFARE SCIENCE CENTRE (AWSC)
August 2009

Table of Contents

1. Executive Summary. General recommendations
2. Brief history of the AWSC
3. Current programs, capabilities, funding and facilities
4. Purpose and positioning of the AWSC
5. Review outcomes according to 6 TORs
 - 5.1 TOR 1: Develop animal welfare methodology
 - 5.2 TOR 2: Inform animal welfare standards and practices
 - 5.3 TOR 3: Develop industry education and training strategies; advise on codes of practice and QA programs
 - 5.4 TOR 4: Understand attitudes to animal welfare and assist policy development and consumer assurances
 - 5.5 TOR 5: Provide training – tertiary students
 - 5.6 TOR 6: Provide training – researchers and teachers
6. Strengths and weaknesses of the AWSC
7. Overall conclusions

-
8. Appendices
 - 8.1 Terms of Reference (TORs)
 - 8.2 Individuals/Organisations providing written submissions
 - 8.3 Review agenda and interviews
 - 8.4 Review Committee membership
 - 8.5 Review process and documentation (and attachments)
 - 8.6 Acknowledgements
 - 8.7 Abbreviations

.....
G. F Mitchell
Chair, Review Committee
3rd September 2009

1. **Executive Summary**

The Animal Welfare Science Centre (AWSC) is building a reputation as a unique, important, independent and attractive concentration of expertise in animal welfare research, development and extension (RD&E) across 4 organisations – Department of Primary Industries (Victorian Government), The University of Melbourne, Monash University and The Ohio State University, Columbus OH, USA. The RD&E agenda is broadly based combining the “biology and sociology” of animal welfare with particular focus on animal-human interactions. Training packages such as ProHand, and the seminar series, are highly regarded but both need a wider roll out. Numbers of higher degree students (e.g. PhD) in the Centre have increased recently. Processes of RD&E priority setting have been upgraded but industry engagement at the front end of program and project development is still patchy. On-farm benefits of AWSC endeavours need to be documented more formally in the context of systematic project evaluation.

Industry financial support and uptake of research findings (extending partially to training packages) are variable, being comprehensive for the intensive pig and poultry industries, moderate for companion animals and lagging in the extensive (red meat) industries and dairy. The funding of companion animal RD&E (largely at Monash) is at risk and, overall, the AWSC would derive major benefit from a broadening of the funding base. In particular, a stable source of “foundation funds” is required to build and retain expertise (e.g. mid-career scientists) as well as supporting a portfolio of generic animal welfare RD&E which industry accesses and further builds upon through funds for industry-specific projects.

A particular issue for the AWSC is succession planning with imminent retirements (and the tragic loss of Prof John Barnett). Increased involvement of The University of Melbourne Faculty of Veterinary Science is a notable positive in this regard. The appointment of an Executive Officer has been a significant and widely applauded development with increased communication across the partner organisations and with stakeholders. In terms of governance, the Advisory Committee needs to be recast and upgraded to provide strategic advice.

The importance and responsibilities of the AWSC have come into sharper focus with implementation of the Australian Animal Welfare Strategy (AAWS) and a new era of regulated animal welfare. It is an imperative therefore, that the AWSC builds capability, secures funding and positions itself as a premier “generator, repository and disseminator” of animal welfare science to national and international audiences.

Recommendations:

Scientific expertise and succession planning

The Review committee recommends that:

1. A **Transition Strategy** is formulated to manage the impending retirement of key senior staff (in addition to the loss of John Barnett) and targeted at replacement, retention, “grooming” from within and

filling skills gaps across the AWSC portfolio (intensive and extensive livestock industries and companion animals).

2. The AWSC initiate a post-doctoral fellowship program to “bring back the stars” and progressively build a cadre of mid career animal welfare scientists as funds allow.
3. The AWSC makes full use of its Visiting Scientist program to increase the number of carefully selected, international scientists working for short periods in the centre (and associated organisations to share overall costs and reinforce collaboration).

Funding

The Review Committee recommends that:

4. The AWSC upgrade its attempts to develop and implement a strategy to secure core “foundation funding” particularly through Australian Government agency competitive programs – e.g. ARC Centre of Excellence, CRC in Animal Welfare and including any funding initiatives within the AAWS.
5. The AWSC re-examine the merits of incorporation and, inter alia, employment of a (part-time) Business Development Manager/Fund Raiser to assist in broadening and stabilising the AWSC funding base.
6. The AWSC produce a concise, high-impact brochure that documents its successes and highlights the outcomes of the research particularly through case studies. This should be one ingredient in a concerted fund-raising campaign.

Positioning

The Review Committee recommends that:

7. The AWSC actively promulgate the centre as an independent, multidisciplinary, evidence-based, ethical animal welfare RD&E centre that, in a complex field, is a dispassionate “voice of reason” sensitive to animal welfare and industry imperatives and community expectations as well as knowledgeable and authoritative in the new era of regulated animal welfare, QA programs and compliance auditing.
8. The AWSC market itself as a focussed animal welfare science centre that capitalises on the expertise and interests of its key staff yet is, to a small degree, flexible and opportunistic in regard to collaborative opportunities and new scientific activities. Regarding the latter, the AWSC should establish, through collaboration, a presence in (a) gene expression profiling technology to develop new generation “welfare biomarkers” (this will additionally provide students with important molecular genetics skills) and (b) an identified line of investigation badged as “implementation research” (i.e. posing and addressing a research question around extension and, for example, variable uptake).

Outreach, education, training and communication

The Review Committee recommends that:

9. The feasibility be determined of taking the highly-regarded seminar series nationally in live format and with sponsorship from the ICT industry
10. The AWSC examine the feasibility of rolling out packaged courses in animal welfare nationally and internationally and the potential for revenue generation

Governance

The Review Committee recommends that:

11. The Advisory Committee be recast as a Strategic Advisory Committee with TORs to embrace advocacy, fundraising, environmental scans, strategic opportunities etc. A separate “Friends of the AWSC” group may be worth creating with less-defined functions.
12. The AWSC initiate a formal process of project evaluation with assistance from DPIV.

Additional TOR-specific recommendations are provided in Section 5.

2. Brief History of the AWSC

The Animal Welfare Science Centre is some 12 years old. Originally as the Animal Welfare Centre, it was established in Melbourne in March 1997 as a collaborative venture between the then newly formed Victorian Government Department of Natural Resources and Environment (DNRE), The University of Melbourne and Monash University. By concentrating the substantial resources of the 3 partner organisations, the Centre aimed to improve the welfare of animals thereby ensuring, inter alia, the sustainability of animal production agriculture through ethical husbandry practices. A particular focus from the outset was the interaction between humans and animals whether they be farm, companion, laboratory or captive animals. An additional objective was to establish a solid research capability on which to build national leadership in the field of animal welfare RD&E.

Following a major 5 year review in 2002, the Centre changed its name to the Animal Welfare Science Centre (AWSC) to reflect the Centre’s dominant activity of using science to improve animal welfare. At about the same time the key Victorian Government partner became the Department of Primary Industries (DPIV) following disbandment of DNRE. This Department contains the Bureau of Animal Welfare.

A significant administrative event occurred in 2006 with creation of the position of Executive Officer to facilitate communication across the AWSC and to raise the profile of the Centre nationally, regionally and internationally.

In 2009, a long-standing collaborative arrangement with the Department of Animal Sciences of The Ohio State University (OSU) was formalised by admission of the Department and the College of Veterinary Medicine at OSU as full partners of the Centre. Thus the AWSC currently comprises 4 collaborative partners – DPIV (through the Future Farming Systems

Research Division), The University of Melbourne (School of Land and Environment and Faculty of Veterinary Science), Monash University (School of Psychology, Psychiatry and Psychological Medicine and Department of Physiology) and OSU (Department of Animal Sciences and College of Veterinary Medicine).

AWSC governance and administration reside with a Board of Management, an Advisory Committee, the Director and Executive Officer. Being unincorporated, all staff are employed by partner organisations.

Additionally in 2009, the AWSC together with the Centre for Animal Welfare and Ethics of The University of Queensland (CAWE), the Animal Welfare Unit of CSIRO and 2 New Zealand organisations were designated as an OIE Collaboratory Centre for Animal Welfare Science and Bioethical Analysis.

3. Current programs, capabilities, funding and facilities of the AWSC

- The RD&E activities of the AWSC are embraced in 4 programs:

Program 1	Animal Welfare Methodology
Program 2	Housing and Husbandry Effects on Animal Welfare
Program 3	Attitudes to Animals and Animal Welfare, and Farmer, Consumer and Community Behaviour
Program 4	Industry, Tertiary and Post-graduate Education and Training

These research, education, training and extension activities build upon strengths in the following areas:

Human-animal interactions
Community attitudes to animal welfare
Welfare methodology
Housing
Animal behaviour
Stress Physiology
Veterinary Medicine
Psychology

with focus on farm animals and companion animals but responsive to opportunities in pest animals and animals in research.

- **Research Capabilities**

Applied Ethology – Hemsworth, Jongman, Lauber, Chaplin, Croney[†], Botheras[†]
Biomedical Engineering – Cakebread*, McCauley*, Eastridge*[†]
Biometrics – Coleman, Butler*, St Pierre*[†]
Neuroendocrinology – Tilbrook
Psychology - Coleman, Bennett, Tonkhsati, Marston (Animal behaviour)
Psychology – Coleman, Lauber, Botheras, Moeller[†], Eastridge*[†], (Human attitudes and education/training)
Sociology – Lobao[†], Sharp[†]

Stress Physiology – Tilbrook, Leury*
 Veterinary science – Fisher, Cakebread*, Croney†, Hides*
 Ethics – Croney†

Plus some capabilities in Immunology and Neurophysiology

* “Associates” of the AWSC

† Ohio State University staff

- **Project Funding**

Over the period 2002-2009, competitive research funding (i.e. grants) has amounted to \$8.526m. Of this, 37% has come from the production animal industry “Research and Development Corporations” (i.e. APL, AECL, AWI, MLA, DRDC/DA), 31% from the Victorian Government (DPIV and BAW) and 14% from production animal CRCs (Poultry, Beef, Dairy). The pork industry has provided 20% and the poultry industry about the same proportion of the total grant-based funding. Less than 3% comes from animal welfare and companion animal organisations. The sources of these funds are as follows, number of funded projects being indicated in brackets:

DPIV	\$2.14m (13)	PIAS	\$201k (7)	Wm Buck Found	\$68k (1)	RSPCA (Aust) (per AAWS)	\$9k (1)
APL	\$1.7m (11)	Ohio Ag R&D Centre	\$186k (2)	QDPI	\$65k (1)	ACAC	\$7.5k (1)
AECL	\$868k (3)	Mintrac	\$177k (1)	GGDF	\$60k (2)	Aust Alpaca Assoc	\$5k (1)
Poultry CRC	\$805k (5)	ARC	\$170k (2)	OSU	\$51k (1)		
BAW	\$600k (18)	MLA	\$156k (2)	UofM RGS	\$32k (1)		
AWI	\$351k (4)	Dairy CRC	\$120k (1)	Monash USG	\$30k (1)		
Beef CRC	\$234k (1)	NHMRC	\$135k (1)	AAWS	\$20k (1)		
EU 6 th Framework	\$222k (1)	DRDC/DA	\$94k (1)	MidWest Poultry Consortium USA	\$17k (1)		

One of the AWSC KPIs is to “Increase funding by 10% annually” (see Appendix 8.5 attachment). The annual budget over the 4 year period 02/03 to 05/06 was static at around \$1m. Over the 3 year period 06/07 to 08/09, the annual budget was approx \$1.5m, a decline in 08/09 relative to the two previous years being of some concern. Positive news (that actually came during the course of the review) is the successful rebid of the Poultry CRC for a further 7 years funding and that should provide continuing project-based funding opportunities for the AWSC.

In terms of the critical major funding from the Victorian Government through DPIV/FFSRD, and in accord with the National Primary Industries RD&E Framework, DPIV’s research agenda will increasingly embrace less pig and poultry and more dairy, sheep meat and animal welfare. Whilst the latter provides good alignment, increased dairy and sheep meat emphasis will need to be accommodated more directly in the AWSC portfolio. In regard to funding from red meat industries, a recent “priorities workshop” has been conducted and increased involvement of the Vet School should assist targeted funding. Whether the AAWS will provide direct funding opportunities is as yet unknown. Of some concern is sustained funding for the Monash University component of the AWSC agenda with its focus on companion animals and the social sciences (and

major support from BAW – that is at risk – and very little from the companion animal “industry”).

- Facilities

(1) Facilities at DPI Werribee

Animal Behaviour & Welfare Research Building

The building is located at DPI Werribee and was designed for the conduct of short term intensive behaviour and welfare studies on farm and companion animals, under highly controlled conditions. This facility involves a large holding yard indoors leading to a number of testing rooms in which a range of treatment comparisons can be imposed and where detailed behavioural observations and physiological measurements can be conducted.

Large Animal Surgery

The animal surgery complex is based around a large, well equipped, two tables, main theatre. Additional to this is a smaller, single theatre, scrub/dark room, linen and kit preparation area, small laboratory/instrument cleaning room and an extensive, under cover, animal holding/preparation/recovery area. The facility is equipped with a good range of basic surgical instruments, surgical gowns and general linen draping. The theatres are equipped with Halothane anaesthetic machines (one with Iso-fluorane capability), respiration monitors, diathermy, shadowless operating lights, and access to PHIMR operating microscope and X-ray and developing equipment. There are facilities for equipment cleaning and laundry, assembly of operating kits and autoclaving.

The animal holding facilities have undercover, overnight holding capacity and handling facilities (catching pen, lifting winch and crush) for sheep, pigs, and cattle. Four recovery pens are centrally placed for easy access and monitoring and have direct access to a small holding/recovery paddock. Depending on the procedures to be performed, the facilities and operating systems allow high daily throughput of more than 30 sheep and up to 20 pigs (depending on groupings etc.).

(2) Other animal facilities at Werribee developed under the JFFAR agreement

Another joint facility between DPI and The University of Melbourne is the Joint Facility for Food Animal Research (JFFAR). The JAFFR facility was formally established at the Werribee site in July 1998. Facilities include:

- Cattle facilities – 12 individual pens in intensive handling shed, Herringbone artificial insemination race, pens, crush and circular race for individual or group treatment. These facilities have also been used for sheep research (e.g. recent mulesing studies at Werribee)
- Sheep facilities – 72 individual pens, 30 metabolism crates
- Poultry facilities – includes three poultry sheds of different size, some with controlled environment status. Two sheds are equipped with modern furnished cages for laying hens (with perches, dustbaths and nestboxes)
- A meat laboratory.
- A conference room.

- Office space.
- Livestock holding yards

(3) Melbourne University Faculty of Veterinary Science at Werribee

Facilities include animal holding paddocks and yards, surgery facilities and teaching laboratories and classrooms

(4) AWSC Specialist Equipment Capability at Werribee

Video recording equipment

The AWSC regularly utilises video technology in research projects. Video equipment available within the AWSC includes a range of colour and black & white video cameras (the latter enable recording in the dark using infrared lighting), normal and time-lapse video cassette recorders, time-code generators and video monitors.

Behaviour analysis software

Specialist software developed by the Noldus technology company in the Netherlands is designed for use in animal behaviour and welfare research. The AWSC has a mid-range capability in available software and hardware, including two licenses for the Observer base program, 2 Mobile Observers and the Video-Pro system, in which the video record is time-locked to a computer for more efficient and accurate read-out of video data. These technologies are highly valuable for animal welfare research as they are designed to assist the quantification of behaviour either by direct observation or via video (either normal speed or time-lapse recording).

EEG measurement and the AMLAB Data Acquisition System

The AWSC maintains equipment to enable the measurement of EEG (electroencephalogram) and EOG (electrooculogram), used in research on the measurement of painful sensations. The equipment used (an Associative Measurements Amlab Signal Acquisition System) provides a frequency spectral analysis enabling the quantification of the degree of pain experienced by animals. This technology has been used for assessing the pain associated with routine husbandry procedures such as tail docking, mulesing, dehorning or debudding, beak trimming, branding and castration on fully conscious animals without the use of any analgesia or anaesthesia. This could also be used as a tool to assess the effectiveness of analgesics.

Heart rate monitors

Heart rate monitors, as used by sports people monitoring their performance, are available for use in AWSC research.

(5) AWSC Facilities at The University of Melbourne

The University of Melbourne is a joint provider of facilities at the Werribee site, described below. Office space for Professor Hemsworth, Jeremy Skuse, research assistants (2) research fellow (1) and post-graduate students is provided at Parkville.

The University of Melbourne School of Land and Environment maintains a 2000ha operational farm at Dookie.

(6) AWSC Facilities at Monash University

Psychology Department, Caulfield

Professor Coleman maintains an office at Caulfield and his staff are located at the Caulfield site along with a Multimedia Development Laboratory. The latter is a joint facility between the Psychology Department and the AWSC. The AWSC shares access to a multi-media program manager, who also maintains the AWSC website. A move to Clayton enabling consolidation is planned.

Psychology Department, Clayton

The AWSC has access to office space and small animal facilities, within the Psychology Department at the Monash Clayton campus.

Physiology Department, Clayton

The Physiology Department at Monash campus Clayton provides AWSC scientists access to animal house facilities and endocrinology laboratories. The endocrine laboratories in Physiology are extensively used by AWSC scientists for the measurement of various hormones such as cortisol (both from plasma and saliva).

The AWSC deems the facilities in the various sites to be appropriate for the conduct of its animal welfare science. It must be remembered that some research is conducted on commercial farms in the context of current production systems. In the long term, it is a certainty that, with increasing urbanisation in the Werribee area, alternative animal research and holding facilities will need to be developed elsewhere. It is envisaged that some dairy animal welfare research could be conducted at the Ellinbank Centre of DPIV.

4. Purpose and positioning of the AWSC

The AWSC is a collaborative partnership that exists primarily for the purpose of conducting strategic and basic animal welfare research to address major animal welfare issues. Importantly, it also exists to provide targeted industry, public and tertiary sector education to improve animal welfare and productivity and to advise consumers, the public and governments on scientifically robust animal welfare standards. The Centre aims to build and maintain a broad base of animal welfare research and education capability that industry “accesses” and builds on, through funds for industry-specific research, education and training. The independence of the Centre is paramount thereby ensuring its voice and research findings are not compromised. The AWSC operates in a space of strongly held views, extending from frank militancy, powerful political lobbying and economic tactics through to outright denial of welfare relevance or existence.

Animal welfare research comprises a minute proportion of the nation’s endeavours in the life sciences and the social sciences. To achieve critical mass, to accommodate a range of imperatives and needs in the sector, to embrace the necessary skills sets in what has to be a multidisciplinary program, and to provide a lively, productive, intellectual environment to attract students and ensure scientific rigour, research groups with complementary skills, research interests and scientific objectives must be brought together. The collaborators maintain their identity and distinctive research emphases and methods but are linked for purposes of accessing expensive technologies, skills, facilities and funding support

thereby ensuring efficiencies and useful, fit-for-purpose outcomes. The AWSC has achieved this with scope to further build the consortium particularly in the context of the OIE Collaborating Centre, the Australian Animal Welfare Strategy (AAWS) and the rationalisation (e.g. “national R; regional D&E”) initiated through the National Primary Industries RD&E Framework of DAFF/PIMC.

From written submissions and interviews, the Review Committee was left in no doubt that “.....industries are much more attuned to their responsibilities to deliver good animal welfare outcomes” and that they must strive to stay ahead of any “looming legislation” with continuous improvement the norm. Though certainly true in some sectors, actual buy-in in this new era of the immediacy if not primacy of animal welfare is variably expressed in others with a “business-as-usual, we know what’s best” approach. No longer acceptable are attitudes that “there are some data we do not need to get” and “supporting the research endeavour only elevates importance of the issue.” There is no doubt, however, that the animal welfare imperative must be accommodated in the context of overall animal health and nutrition objectives, productivity increases, economic prosperity, industry viability and global food security. This is no small task. Of interest is AWSC research demonstrating that, to consumers, “an assured supply of affordable, safe food” ranks higher in importance than animal welfare, important though the latter is.

To quote from the ALTA written submission:

“Any review of the AWSC – whether that review is focussed upon funding levels, organisational structure, or perhaps even the future of the entity itself, would be well served to consider the societal context for animal welfare issues in Australia today, as well as what policy developments are being made by Governments across the country in response to shifting community attitudes. An effective source of empirical data and analysis that informs good public policy outcomes and shapes balanced attitudes towards animal welfare is a vital underpinning in this respect; the AWSC therefore has a key role to play.

Animal welfare and consumers: a growing phenomenon worldwide- the market trend. For some years the ALTA has expressed a policy view that the developed world’s interest in animal welfare in livestock industries – including the ethical parameters and scientific validity of animal production, transport and processing – is set to increase significantly in years to come and that as a consequence, in market terms, consumers will over time seek to place a ‘premium’ on animal products that can demonstrate effective welfare outcomes.

Where are we now?

The idea of a market ‘premium’ for positive animal welfare outcomes is in the ALTA’s view still some way off; instead, it is probably more accurate to say that developed societies remain in a process of moving towards that outcome. Until that outcome is reached (i.e. in the absence of the market’s ability to produce a demonstrably premium welfare product) the market (interested consumers) will, where they can, probably just apply a ‘discount’ to animal products

that demonstrably fail what might be considered 'reasonable' welfare standards. This seems to be a natural market transition in this area – the 'discount' phenomenon is often driven by activists, through boycotts etc.

As one of the most settled and developed economies, Australia is in some ways at the leading edge of this phenomenon, although the ALTA balances this observation against the fact that at an intuitive level, Australia is still probably somewhat better connected to the idea of rural production realities than some other countries, notably the western Europeans. In any event, urban growth will continue, so that in a societal and therefore a political sense, developed nations will (amongst other things) fall further out of touch with the detailed realities of food production processes. This has a bearing on how animal welfare matters in food production are considered politically.

This is also a significant risk for the rural sector: if rural industries do not recognise this attitudinal 'drift' away from their industries, they can risk voicing policies and objectives that fall on deaf ears in terms of political outcomes. Good science therefore has a vital role to play in avoiding attitudinal drift that is based to an excessive degree on emotional response.

Summary

Taken as a whole, the ALTA considers animal welfare an area of growing significance, characterized more as a challenge than an opportunity in the short term, but most likely emerging as a genuine market opportunity for professionals to pursue in the longer term. As discussed below, the ALTA is recalibrating its policies to anticipate these developments. Other stakeholders, including Government, welfare groups and research bodies, are likely to do likewise. Industry groups that choose not to do so will suffer”.

A major public policy response to animal welfare occurred in 2006 with governments agreeing to a national Australian Animal Welfare Strategy (AAWS) whereby animal production and related activities would be subjected to legislation. A heavy responsibility will therefore be vested in animal welfare research groups such as the AWSC to provide government, industry and the welfare community with relevant, robust scientific research findings and advice “.....in pursuit of world standard animal welfare and regulatory outcomes for Australia's livestock industries...” and “...place Australia at the forefront of best practice animal welfare regulation internationally”. A system of “... voluntary, independently-audited QA programs that demonstrably meet or better the new legislative standards” would seem eminently sensible at this juncture particularly in the absence of significant resources for enforcement of the new laws.

Clearly, with increasing societal concerns now translating to animal welfare legislation, the RD&E agenda of the AWSC and like organisations must come under close scrutiny to determine whether they can meet the substantial challenges posed by the new realities in the animal welfare sector.

5. Review outcomes according to 6 TORs

5.1 **TOR 1: Develop scientifically defensible welfare methodology**

This aim of the Centre is reflected in Program 1 of the Centre's RD&E program (animal welfare methodology). The program acknowledges that scientists have different views on how to measure animal welfare, and groups these into three broad concepts: biological functioning, affective states, and natural behaviour (based on previous published work by Hemsworth and Barnett). The strategic focus of the program has been to use well-accepted stress models to understand the relationships between these different concepts and associated methodologies with the aim of achieving broader consensus. The focus of this work has been farm animals, with projects on pigs, layer hens, dairy cattle and sheep.

Few written submissions commented directly on whether the centre had met its expectations against this aim, although several underscored the importance of this area of research.

A number of submissions indicated a need to better balance the focus on welfare methodology against the delivery of improved welfare outcomes on-farm. This was expressed as a need to be able to interpret and apply the emerging methodology to a "real-world situation", or that it should be clear in the aims of all programs that improving animal welfare is the ultimate aim of all research conducted through the centre. One comment was that it was hard to justify industry funding for research if it does not translate into on-farm action. The examples of welfare audit and benchmarking work that have been conducted through the Centre suggest that there is some activity in this area.

Another matter raised was the emphasis on using stress models to validate welfare concepts. Although research projects conducted through the Centre use a variety of assessment parameters including both behavioural and physiological parameters, there was a sense that in some publications, physiological indicators are given more prominence than behavioural ones, although this was a disputed point. It is also relevant to later comments about improving the collaboration within the Centre to gain input from other disciplines in the implementation of this program.

There was general satisfaction from funding representatives about this program. The majority of substantive comments were from researchers with an interest in the area who saw it as an essential program. A focus on objective measures of animal welfare is required to 'take the emotion out' of the animal welfare debate.

The geographical separation of Monash and Melbourne campuses and the different disciplinary focus of collaborating groups within the Centre was seen to have a 'silo' effect in terms of research groups or individuals working in relative isolation from each other (though certainly not at the senior level) and the two groups not communicating or collaborating as effectively as they could. One concern arising from this was that there is a lack of opportunity for psychology and behavioural neuroscience to feed substantially into the welfare methodology program, despite having a lot to offer in terms of an understanding of measuring behaviour and increasing our understanding of the neurobiology of emotions and

cognition. This was identified as a ‘real opportunity’ which is currently untapped.

It was noted that the application of welfare methodology research to livestock in Australia is important. This should assist in the development of outcomes-based welfare assessment of Australian farming systems and comparisons across systems (equivalence). Ultimately, it would be useful to have welfare methodologies that can demonstrate good animal welfare outcomes and that Australian standards provide these outcomes.

Specific TOR 1 Recommendations

1. It was noted that, as the focus of welfare methodology work was very much on farm animals, this should be articulated in the Strategic Plan.
2. Given that welfare assessment is a cross-sectoral issue, there could be significant advantages in widening the scope of this program to cover other animals
3. There is an untapped resource in the Monash research group that has not been utilised in this program. Input from researchers from other disciplines could satisfy any concerns over the focus of the program and provide the opportunity for exciting collaboration.

5.2 TOR 2: Use of scientifically defensible welfare methodology to establish, amend or validate AW standards and practices.

Welfare research methodology has been a priority research focus for AWSC in the review period. The facility with which any or all “robust” methods meet the needs of industry for establishing minimum legal standards and informing industry practices is scientifically variable, species related and problem specific or related. Thus the choice, cost and use of methodologies in research or practice requires continual problem oriented (re)-appraisal, together with supporting funding.

The AWSC has provided and/or critically appraised external research in this priority area of “what is good animal welfare” and “how is it objectively measured” on an industry-by-industry basis. This generally well-regarded, science-based approach was recognised and broadly supported by all submissions to the review, both by industry and welfare advocates.

The observed variability in content of submissions in regard to TOR 2 was broadly proportionate to the following:

- The stage in time of the AAWS Standards and Guidelines process to which the submission related – e.g. ALTA submission on Land Transport Standards and Guidelines which are well advanced or the APL submission on the Pig Industry Welfare Code which is nearing completion.
- The submitter’s working relationship with AWSC and associated level of funding – e.g. APL and AECL close working relationship and significant research funding. ACMF less funding/working relationship and “methodological” issues.

- The AWSC personality/science provider working relationship – e.g. Prof John Barnett with AECL, ACMF and APL. Dr Andrew Fisher with Sheep Standards and Guidelines writing group, given his work for AWI and MLA whilst previously employed with CSIRO Armidale. This was usually based on industry awareness/knowledge of the scientist(s) and their welfare science expertise and project involvement with those livestock industries.

These factors combined to build a practical level of working trust combined with scientific authority (i.e. the hardness of its facts and the rigour of its argument from whence scientific authority is derived) which was expressed in hammering out proposed standards and determining input to industry practices and any proposed practice change.

The submissions reflect these interplaying elements and the actual or perceived benefits received or available. Pig and egg industries and ALTA were most complimentary; dairy and chicken meat were supportive and valuing assistance to industry; sheep, wool and cattle industries were less engaged or unengaged with the AWSC.

DPIV saw “the ability of the AWSC to inform and advise policy as a core strength” and DAFF (Australian Government) saw AWSC “facilitating a stronger national approach on the matters” of policy and animal welfare standards for Australian domestic animals.

RSPCA Victoria “support the continuation and expansion of this work” and VFF “supports the AWSC aim to produce scientific advice to support the modification of Codes of Practice and the development of quality assurance programs to introduce scientifically defensible welfare standards in the animal industries”.

Animal Angels were concerned that research in optimal conditions would not accurately guide or guard against more extreme situations – e.g. transport of drought affected sheep. This was consistent with our reviewers’ argument for appropriate critical and in-context interpretation of scientific studies with respect to the development of standards for animal welfare.

The AWSC and other individual scientists must assist all parties in this respect through the AAWS writing and reference group process and the science informed consensus development required for standards development and enunciation. Future industry practice also will require this holistic, adaptive, knowledge aware approach to animals in production and their total welfare provision.

Specific TOR 2 Recommendations

1. Continue to research and apply all the sciences of welfare assessment methodology to inform the total AAWS/industry MINIMUM regulated welfare standards consultation development process.
2. Interact with all industries as best possible around the continual appraisal and improvement of industry animal production and welfare practice.

3. Collaborate globally with other animal welfare scientists to provide such scientific capacity and capability as is nationally required to establish, amend and validate animal welfare standards and practices, whilst bearing in mind the world context of food security and equity.

5.3 **TOR 3: Develop and support industry education and training strategies and provide scientific advice to support the modification of codes of practice and the development of Quality Assurance programs to introduce scientifically defensible welfare standards in the animal industries**

As stated in the Animal Welfare Science Centre Strategic Plan (2007-2012), a key objective of the Centre is to develop industry training packages where applicable. Mechanisms whereby this strategy would be implemented include the inclusion of a “plan to adoption of research by the next user” being built into each project developed. Participation in AAWS processes could also assist in the development of relevant packages.

A number of the written submissions made comments relevant to the development of industry education and training strategies. Examples of this include:

- AWSC 's role in developing and supporting industry education and training strategies and providing scientific advice to support the development of quality assurance programs and codes of practice. These are key steps to introduce scientifically defensible welfare standards in the animal industries. This supports DAFF's current investment under the AAWS to move to a system of national standards and guidelines that will be consistently regulated by states and territories.
- The Centre's community reach in terms of educational programs designed to improve attitudes and behaviour towards animals to benefit welfare and productivity are well known within Australia and increasingly overseas.
- AWSC staff have experience in taking their research findings and translating these into packages that can be used to improve animal welfare outcomes. Examples of this include ProHand for pigs and ProHand for dairy. The same submission indicated that the AWSC is one of the few (only) local animal welfare group that can develop such programs.

[Interestingly, in Australia, the pig industry has been supportive and helped sponsor development and roll out of ProHand for Pigs. The Australian dairy industry has not been supportive – it is of the view that management/technology transfer of husbandry can incorporate animal welfare requirements. However, ProHand for dairy has been developed to be utilised by members of the European Union].

- The EU sponsored training packages have provided an excellent opportunity and resulted in the development of packages that can be modified to suit different needs and translate into different languages.

- AWSC is now a formal part of the international OIE *Collaborating Centre for Animal Welfare Science and Bioethical Analysis*. It is particularly important that Australian industry groups and public policy practitioners have access to the technical research and advisory support that members of this respected international body provide, as it is the OIE that both Primary Industries Ministers and interested communities look to when considering whether legislation and quality assurance systems meet acceptable standards.
- The chicken meat industry feels that the Centre needs an appropriately trained and respected scientist to become a 'champion' for poultry welfare research; this person to be able to undertake scientific reviews, develop and supervise research projects (and lead multi-disciplinary teams) directed towards developing appropriate methodologies and using these to address industry issues, and to be able to work effectively with industry in doing this. It is prepared to explore ways of jointly funding such a person.
- In future, AECL will be seeking more industry relevant outcomes from research in future, striving for a better balance between welfare methodology development and on-farm benefits. The research successes within AWSC could be increased by exploring novel approaches to the extension and communication of welfare related R&D outcomes, or considering the use of mainstream publication and media communication of the Centre's R&D outcomes.

While it is recognised that the AWSC's research activities have been of a very high standard, its ability to take these research findings and translate them to on-farm benefits has been, with the notable exception of ProHand for pigs, less evident.

Specific TOR 3 Recommendations:

1. Consideration should be given to exploring avenues whereby the results of research can be more widely extended to the groups to which this research is relevant.
2. Where a specific training program (such as ProHand for dairy) has been developed, but not adopted by the relevant industry or group, it is recommended that the program should be reviewed. If on review it is still deemed to be a useful package, it is recommended that the contents and availability of the package should be made more widely known to the relevant industry or group.
3. Those groups who recognise the need to have an appropriately trained scientist taking a particular interest in their area should be encouraged to provide funding support to help encourage such a scientist to carry out work in their area of interest.
4. Closer contact should be developed between those groups involved in the modification of codes of practice and the development of Quality Assurance programs so that AWSC could assist in the improvement of scientifically defensible welfare standards in the animal industries. A dedicated funding source would need to be found if the Centre was to be deeply involved.

5.4 **TOR 4: To understand public and consumer attitudes to animal welfare to assist Governments and industry in:-**

- **developing animal welfare policy**
- **assuring local and international consumers, public and other Governments of the sound welfare standards for Australian domestic animals.**

The Centre's Strategic plan (2007 – 2012) provides a context for this aspect of its work: *...consumer and public attitudes to animal welfare have the potential to dramatically affect the use of animal in society, influencing for better or for worse, the operations of livestock industries, medical research, the management of feral and wild animals and the care of recreational and companion animals'.*

This 4th 'aim' of the Centre is best reflected in Program 3 of the Centre's RD&E program (Review 2002-2009 document) which is expressed as *'Attitudes to animals and animal welfare, and farmer, consumer and community behaviour.'* Note though that this Program is broader than only the issues covered in the 4th aim, i.e. relating also to *'farmer, consumer and community behaviour'*, rather than just understanding 'attitudes'.

It is also relevant here to note that the 'Strategic focus' now indicated in the Review document (page 5) is only related to understanding behaviours of animal handlers –farmers or others – to then develop training programs. There is no clear mention of a key element of this 4th Centre 'aim' (i.e. to understand public and consumer attitudes...). Regardless, one of the three 'Current research' projects listed does relate to 'attitudes'; *'Undertake review for APL on the value and practicality of monitoring public attitudes to inform animal welfare policy development'*. The stated 'Strategic Focus' should be reconsidered if the 4th Centre aim is in fact to be pursued in coming years.

Looking back at the studies undertaken by the Centre related to this 4th aim over the past 7 years (2002-2009) under review; there are approximately 85 major projects (from page 12-19 of the Review document), of which nine or approximately 10%, related to this area of study. Similarly the income in terms of competitive research funding (not including base and 'in kind' funds) for this area of public and consumer attitude research is also some 10% of total income.

Submissions:

A number of written submissions commented directly on whether the Centre had met its expectations against this 4th centre aim, and some of those who attended personally and presented material to the Review Committee and answered questions, also commented on this aspect of the Centre's work.

Most papers and interviewees acknowledged the **importance** of public and consumer attitude work – though the reasons varied considerably, with some seeing multiple purposes. For some;

- it was important to gauge attitudes to inform public policy and animal welfare decision making (e.g. AVA, RSPCA Aust. Voiceless),
- for others it was primarily to assist to fashion education programs (e.g. RSPCA Vic, DAFF),

- for others its importance related to being able to alert industries to public concerns and thus the need for changed standards (e.g. Kevin Stafford/Massey, APL),
- and other reasons expressed included to enable timely industry media strategies (e.g. DAFF, APL).

In addition to the broad support for this 4th aim, specific positive statements about this aspect of the Centre's work included the importance of the expertise of the Centre, and particularly Monash Psychology. CSIRO indicated they had no capacity in the social sciences and thus appreciated this aspect of the Centre's work. Graeme Coleman outlined the international standing of the Centre's work in regard to public, consumer attitudes and evaluations (as judged by increasing numbers of overseas conference invitations and similar), and his view that it was impacting positively on animal welfare policy (which was supported by other stakeholders).

On the negative side, several respondents indicated they felt more work was required in this area (e.g. Compassion, Voiceless, Animals Australia), there was a suggestion that this work was 'Victorian focussed' (DAFF), and that more work is needed on 'industry attitudes' rather than only public/consumer attitudes (Dairy Australia). It should also be noted that Dairy Australia was concerned to ensure there was no duplications by the AWSC as DA is also undertaking its own industry/farmer research.

Specific TOR 4 Recommendations

1. There is strong support for the work to 'understand public and consumer attitudes to animal welfare' though the reasons for that support vary with different stakeholders. Thus it is important that the Centre continue research in this area of work.
2. The Centre is seen to have internationally recognised expertise and a good track record in the social science area over the review period. This needs to be maintained with the retention or recruitment of suitably qualified staff.
3. The current 'Strategic focus' of the Centre does not specifically address this '4th aim', and thus it is recommended that this apparent omission be considered by the Board with a view to an increased focus.

5.5 TOR 5: Ensure tertiary students entering the animal industries are better prepared to provide sound, science-based advice on animal welfare practices to industry, interest groups and the public.

At The University of Melbourne, AWSC scientists have provided undergraduate teaching into the Bachelor of Animal Science and Management, and the Bachelor of Agricultural Science degrees. These subjects have had good enrolments with generally very good quality teaching scores, and have been a good feeder of students into higher degrees concerning animal welfare. Unfortunately these subjects will be phased out by 2010 and replaced with a broad level undergraduate degree in Bachelor of Science, as The University of Melbourne translates to the Growing Esteem initiative. Several specific animal welfare focused subjects, including "Animals in Society", and "Working with Animals" will

continue to be provided as cross-disciplinary subjects in the new generation degrees. It is hoped that these subjects will serve as a pipeline for high aspiring students in Veterinary Science and Animal Science Masters level degrees. The challenge is to translate student interest in animal welfare into trained animal welfare professionals.

From 2010, the Faculty of Veterinary Science at The University of Melbourne will commence a stream in the Bachelor of Science at 200 level pre-veterinary subjects. Dr Fisher's joint appointment will ensure that students receive evidence based training in animal welfare as part of this degree.

At Monash University, little headway has been made on introducing animal welfare specific courses at undergraduate level, however elements of animal welfare science are taught as part of mainstream courses in human psychology.

Looking forward, the introduction of The Ohio State University into the AWSC with its interest in imbedding established animal welfare teaching modules into mainstream undergraduate courses provides an immediate opportunity to extend the reach of AWSC teaching modules.

Specific TOR 5 Recommendations:

1. Develop an undergraduate education strategy to extend AWSC teaching modules to other Australian universities, international universities, using web-based on-line delivery of teaching modules.
2. Introduce AW modules into level 200 undergraduate courses at Monash University, The University of Melbourne and The Ohio State University as a feeder into pre-veterinary and animal science graduate courses.
3. Work to reintroduce the Graduate Diploma in Animal Welfare.

5.6 TOR 6: Provide high quality postgraduate and postdoctoral training for the next generation of researchers and teachers in animal welfare science.

The key scientists within AWSC have an impressive record in research training and mentoring. The collaboration between Monash University and The University of Melbourne academics in this area has been excellent. During the reporting period twenty one students have graduated with postgraduate degrees from training completed within the AWSC. These include 15 at Doctoral level and 6 at Masters level with 13 graduating from The University of Melbourne, 6 from Monash University and 2 from The Ohio State University. Most of these graduates have moved into further academic study and research, or into Government/extension activities. Submissions from other University academics indicate that student theses were of high quality, well presented, and students receive high quality contact time with supervisors.

There are currently 19 students enrolled in postgraduate studies and an additional 7 Honours students undertaking training and supervision from staff in AWSC. The review team met with a cross section of current students, and students appeared independent, enthusiastic and loyal. The

oral skills of the students were of a high standard and they appeared to be focused on publishing their research at an early stage into their study. Professor Hemsworth, Professor Coleman and Dr Bennett appear to have a high student load.

The majority of students articulating through the Honours and Higher Degree programs have been interested in companion and zoo animals rather than production animals. As a consequence, AWSC scientists have conducted many small projects in these areas which has increased their profile among these communities. However, these activities are generally marginally funded. If the AWSC academics are to continue to train students in these areas, an alternative source of funding will be required, such as ARC Discovery and Linkage grants, matched with community grants.

DPI Victoria has announced its intention to direct investment in projects mainly in dairy cattle and sheep. They have also contributed to the joint appointment of Dr Andrew Fisher to ensure Veterinary Science students receive research training in animal welfare for these important industries. There is already good evidence that other Veterinary Science academics will complement the activities of Andrew Fisher in the AWSC.

Facilities for animal welfare research and training do not appear to be limiting and AWSC has expressed support to the planning for a specialised animal handling facility coordinated by Monash University.

Specific TOR 6 Recommendations:

1. A replacement for John Barnett (“poultry champion”) with a mid-level scientist is required to increase the skill base of the centre and spread student load.
2. Increase access to science capability in animal welfare extensive livestock industries to align with DPI Victoria’s increased interests in sheep meat and dairy industries. Explore post-doc funding opportunities available in MLA.
3. Explore post-doctoral fellowships with industry funding, to expand mid-level science capability.
4. Broaden and stabilise funding base especially in companion animal sector e.g. pet food companies, RSPCA, DHS, core funding from industry groups.
5. Improve utilisation of innovative funding sources such as visiting scientist programs, etc.

6. Strengths and weaknesses of the AWSC

Strengths

- **Scientific Excellence**
 - Excellent qualitative and quantitative measures of research outputs - KPI’s, journals , presented papers
 - Funders are very satisfied with the quality of research and seek continuing relationships with the Centre
- **Science Capability, Industry Relationships - impact and funding**
 - Pork
 - Poultry

- Egg
- Companion animals
- Sheep
- **Succession**
 - There is potential for succession planning from within the Centre with existing staff (Andrew Fisher, Pauleen Bennett)
- **Education**
 - Numbers and high quality of PhD's and post docs
 - Relationship with University of Melbourne - New course structure provides opportunities – “Animals in Society”
 - Seminar program is very popular with demand for wider availability
- **Training**
 - Take-up of ProHand – EU, USA (OSU), pork, poultry, sheep
- **OSU – rich exchange and funding**
- **Visiting scientist program**
 - Positive feedback about recent visiting scientist (Tina Widowski)
 - Seminars from visiting scientists are popular (Temple Grandin)
- **OIE**
 - Collaborative
 - Allows specialisation

Weaknesses

- **Succession and transition**
 - Nervousness from currently committed industry supporters re retirement of Hemsworth and other key senior staff
 - Loss of John Barnett - unclear replacement plan
 - Lack of clear succession plan
 - Lack of transition plan
 - Lack of mid-career scientists
- **Critical mass and ongoing security for comprehensive R&D**
 - Highly dependent on relationships with industry for survival funding
 - Dependence on Jim Kinder for purchaser-provider relationship with OSU – may move to own provision in the future
 - Inadequate funding for companion animals – ad hoc projects
 - Lack of fundraising strategy and low priority
 - Lack of business development position
- **Relationship with Dairy**
 - Dairy Industry wants AWSC to have the science available but does not have funding to provide AWSC retainer
 - NZ for stock handling training rather than ProHand
 - The dairy industry is recognising its animal welfare responsibilities, but is developing its responses in-house and incorporating them into existing programs rather than working with the AWSC.
- **OIE**
 - Competitive
 - Lack of clarity regarding agreed partner speciality
- **Lack of implementation, evaluation research**
 - No baseline data
 - Need to link welfare outcomes to welfare methodology
 - Physiology emphasised over behavioural indicators
- **Public profile**

- Not sufficiently in public debate as the independent evidence based expert
- Need to establish public authority as the scientific voice
- **Governance**
 - More strategic role needed
 - Lack of process for project evaluation
 - Wasted advisory committee
- **Education and training**
 - no webcasts
 - lack of significant annual symposium
 - insufficient capitalising on human-animal relationship training for diverse markets
 - dormant Graduate Certificate in Animal Welfare
 - Primary relationship with University of Melbourne - much weaker with Monash University (untapped resource) – silo impact splitting psychology from physiology
- **Science capability**
 - Weak in extensive livestock industries– sheep, meat and dairy
 - “Silos effect” in terms of Monash and Melbourne groups and different research foci.

7. **Overall conclusions**

Based on written submissions, interviews and analysis, the Review Committee considers that the AWSC is an essential and valued component of animal welfare RD&E in this country, especially in light of recent welfare policy developments. The basic and strategic research is of high merit and good quality but with patchy uptake of products by (and delivery to) industry. Some (intensive) animal industries have supported and utilised the resources and products of the Centre whereas other (extensive) animal industries have yet to do so. Support for this national initiative by the Victorian State Government is particularly commendable, extending to companion animal research.

The Committee concludes that the potential “impact factor” of the Centre’s programs is greater than is currently the case. A modest expansion of the current lean administrative structure is warranted to increase fund raising efforts and further build and service collaborations nationally and internationally. Creating and maintaining an appropriate skills mix necessary in a multidisciplinary endeavour, a relevant portfolio of activities that is attractive to a large number of funders and stakeholders, and nurturing staff at various stages of their professional careers (and particularly the highly productive post-doctoral fellows and mid-career scientists) are continuing challenges for the AWSC. This is especially so when it is obvious that funding for long-term discovery or applied research and extension in the animal welfare field is difficult to secure and certainly more difficult than a large number of other research endeavours. It is also difficult to publish in top-flight, high-impact journals. Notwithstanding these facts, the Review Committee was struck by the quality, enthusiasm and numbers of PhD students associated with the Centre and the reputation of many who had previously trained in the Centre. These are good signs in terms of national capability in the new animal welfare era.

____ooOoo____

8. Appendices

Appendix 8.1 Terms of Reference (TORs)

“The terms of reference and domain of the review are to assess the performance of the Centre against its stated aims from the 2007-12 Strategic Plan, namely:

- To develop scientifically defensible welfare methodology
- To use scientifically defensible methodology to establish, amend or validate animal welfare standards and practices
- To develop and support industry education and training strategies and provide scientific advice to support the modification of codes of practice and the development of quality assurance programs to introduce scientifically defensible welfare standards in the animal industries.
- To understand public and consumer attitudes to animal welfare to assist Governments and industry in:
 - developing animal welfare policy
 - assuring local and international consumers, public and other governments of the sound welfare standards for Australian domestic animals
- To ensure tertiary students entering the animal industries are better prepared to provide sound, science-based advice on animal welfare practices to industry, interest groups and the public
- To provide high quality postgraduate and postdoctoral training for the next generation of researchers and teachers in animal welfare science

The review should also identify the strengths and weaknesses of the Centre particularly in relation to its future scientific and organisational capacity.

The performance of the Centre should be considered in terms of local (Victoria), national and international endeavours”.

Appendix 8.2 Individuals/Organisations providing written submissions)

Animals’ Angels, Dawn Lowe and Rebekah Eyers, Germany, Western Australia & Queensland
Australian Chicken Meat Federation (ACMF) Inc. Vivien Kite, Sydney NSW
Australian Egg Corporation Limited, Angus Grossan, Sydney NSW
Australian Government, Department of Agriculture, Fisheries and Forestry, Peter Thornber, Allan Sheridan and Jim Paradice, Canberra ACT
Australian Livestock Transporters Association, Luke Fraser, Canberra ACT
Australian Pork Limited, Darryl D’Souza and Pat Mitchell
Australian Veterinary Association Limited, Mark Lawrie, Sydney NSW
Cattle Council of Australia Incorporated, David Inall, Canberra ACT
Compassion in World Farming, Carole de Fraga, Melbourne Vic
CSIRO Livestock Industries, Chris Prideaux, Brisbane Qld
Dairy Australia and Australian Dairy Farmers Limited, Helen Dornum

and David Basham, Melbourne Vic
 Department of Primary Industries Victoria, M Jones-Lennon, G Kroker, S
 Tate, J Simons, M Edge, L Klump, K Leamon and R Vanhilst, FFSRD,
 DPIV
 Massey University Animal Welfare Science and Bioethics Centre, David
 Mellor, Palmerston North NZ
 Monash University School of Psychology, Psychiatry and Psychological
 Medicine, Grahame Coleman, Melbourne Vic
 NSW Department of Primary Industries, Animal Welfare Branch, Lynette
 Chave, Sydney NSW (Comment)
 Petcare Information and Advisory Service Australia Pty Ltd (PIAS),
 Timothy Adams, Melbourne Vic
 RSPCA (Australia), Bidda Jones, Canberra ACT
 RSPCA (Victoria), Maria Mercurio and Kate Breuer, Melbourne Vic
 The Ohio State University Department of Animal Sciences, Jim Kinder,
 Columbus OH, USA
 United Dairy Farmers of Victoria/Victorian Farmers Federation, CJ
 Griffin, Melbourne Vic
 University of Adelaide, Richard Russell, Gail Anderson, Phil Hynd,
 Adelaide SA
 University of Melbourne School of Land and Environment, Frank
 Dunshea, Melbourne Vic
 University of New England, Steve Walkden-Brown and Geoff Hinch.
 Armidale NSW
 University of Queensland Centre for Animal Welfare and Ethics, Clive
 Phillips, Gatton Qld
 University of Sydney Faculty of Veterinary Science, Greg Cronin, Sydney
 NSW
 Voiceless: the fund for animals, Ondine Sherman, Sydney NSW

Appendix 8.3 **Review agenda and interviews**

AWSC Review Committee schedule

Committee to meet in the Library Room at the Department of Primary
 Industries, Attwood

Monday 10th August

9.30	Committee members introduce themselves Discuss procedure – tasks for members	
10.30	Interviews	
	<i>Director AWSC</i>	<i>Paul Hemsworth</i>
	<i>Chair AWSC</i>	<i>Mike Rickard</i>
12.30	LUNCH	
1.15	Interview	
	<i>AWSC Board Member</i>	<i>Frank Dunshea,</i>
	<i>(on behalf of Rick Roush) Melbourne</i>	
1.45	Committee to consider written submissions	
3.00	AFTERNOON TEA	
3.30	Committee to consider written submissions (contd)	
5.00	CLOSE	

Hosted meal for Committee members in evening

Tuesday 11th August

9.00	<i>Committee discussion</i>		
9.30	<i>AWSC Board Member</i>	<i>Ron Prestidge</i>	<i>DPIV</i>
10.00	<i>OIE Collaborating Centre Member, Clive Phillips (CAWE) (phone)</i>		
10.30	<i>AW organisation</i>	<i>Glenys Oogjes</i>	<i>Animals Australia</i>
11.00	<i>Morning tea</i>		
11.15	<i>AWSC Board Member</i>	<i>Grahame Coleman</i>	<i>Monash</i>
12.00	<i>AWSC Board Member</i>	<i>Jim Kinder</i>	<i>OSU</i>
12.45	<i>Lunch</i>		
1.30	<i>Research provider</i>	<i>Kevin Stafford</i>	<i>Massey (phone)</i>
2.00	<i>Research provider</i>	<i>Chris Prideaux</i>	<i>CSIRO (phone)</i>
2.30	<i>Companion animal perspective</i>	<i>Pauleen Bennett</i>	<i>Monash</i>
3.00	<i>Afternoon tea</i>		
3.15	<i>AW organisation</i>	<i>RSPCA Vic</i>	<i>Kate Breuer, Bob Carrail</i>
3.45	<i>Discussion with AWSC students</i>		
4.45	<i>Refreshments with AWSC students, staff & board</i>		
5.30	<i>Close</i>		

Wednesday 12th August

9.00	<i>Committee discussion</i>		
9.30	<i>Government</i>	<i>Peter Thornber, Allan Sheridan, Jim Paradise</i>	<i>AAWS (phone)</i>
10.00	<i>Industry</i>	<i>Darryl D'Souza</i>	<i>APL</i>
10.30	<i>Industry</i>	<i>Helen Dornom, Bridget Peachey</i>	<i>DA</i>
11.00	<i>Morning tea</i>		
11.15	<i>Industry</i>	<i>Angus Crossan</i>	<i>AECL</i>
11.45	<i>Industry</i>	<i>Mingan Choct</i>	<i>Poultry CRC (phone)</i>
12.15	<i>LUNCH</i>		
1.00	<i>Committee Discussion</i>		
3.30	<i>Interview,</i>	<i>Director AWSC</i>	<i>Paul Hemsworth</i>
		<i>Chair AWSC</i>	<i>Mike Rickard</i>
4.30	<i>Discussion and Chairman's closing remarks</i>		
5.30	<i>CLOSE</i>		

Additional phone conversations occurred between the Chair of the Review Committee and the following:

Dr Onn Ben-David, RSPCA (Vic)
 Mr Luke Fraser, ALTA, Canberra ACT
 Mr Cameron Hall, Livecorp, Sydney NSW

Appendix 8.4 **Review Committee membership**

Dr Graham Mitchell (Chair), Principal, Foursight Associates Pty Ltd, Melbourne. Chief Scientist, Victorian Government Department of Primary Industries and Department of Sustainability and Environment

Dr Ron Prestidge, Department of Primary Industries (DPI), Executive Director, Future Farming Systems Research Division (FFSRD), Melbourne

Mr Paul Pattison, (corresponding only), Managing Director, Rivalea Australia Pty Ltd, Corowa, NSW

Dr Bidda Jones, Chief Scientist, RSPCA Australia, Canberra

Ms Rhonda Galbally, Chief Executive Officer, ourcommunities.com, Melbourne

Ms Glenys Oogjes, Executive Director, Animals Australia, Melbourne

Prof Kevin Stafford, (corresponding only), Professor of Applied Ethology and Animal Welfare/Director of Postgraduate Studies Institute of Veterinary, Animal and Biomedical Sciences, Massey University, New Zealand

Dr Jakob Malmo, Maffra Veterinary Centre and University of Melbourne Rural Veterinary Unit, Maffra, Victoria

Dr Keith Walker, Program Manager, Biosecurity Animal Health and Welfare, Meat and Livestock Australia (MLA) Sydney

Ms Anthea Malliaros (Review Support), Victorian Government of Department of Primary Industries (DPIV), Project Officer – Executive Director’s Office, Future Farming Systems Research (FFSRD), Melbourne

Prof Kevin Stafford was unable to attend but participated by telephone and contributed to the report as a Committee Member. Similarly, Mr Paul Pattison was unable to continue after day 1 but again contributed to the report as a Committee Member

Mitchell, Oogjes and Galbally were members of the 2002 AW(S)C review.

Appendix 8.5 **Review process and documentation**

Following invitations to prospective Review Committee members, determination of meeting dates, and administrative support arranged (all coordinated by the AWSC Executive Officer), letters calling for written submissions from major stakeholders and signed by the Review Committee Chairman, Dr Graham Mitchell, were sent out in June 2009. Immediately prior to the Review Committee meeting, a telephone link-up was arranged to discuss the interview agenda, meeting arrangements and documentation provided. Members were able to request additional information and interviewees. The Committee met at DPI Attwood Centre from Monday 9.30am 10th August to 5.00pm Wednesday 12th August, the first and final interviews being with the Chairman of the AWSC Board of Management (Prof Mike Rickard) and the AWSC Director (Prof Paul Hemsworth). A full list of interviews conducted is provided in Appendix 8.3.

Documentation provided:

1. The AWSC Review 2002-2009 Information for Stakeholders (102 pps)
2. The AWSC Strategic Plan 2007-2012 (14 pps)
3. The AWSC RD&E Operational Plan for 2009 (11 pps)
4. Powerpoint presentation “Hemsworth’s perspective on the AWSC from 2002/03 - 2008/9” (15 slides)
5. AWSC Communication Plan 2007-2008 (4 pps)
6. AWSC Education Plan – 2009 (4 pps)
7. Past post-graduate students – where are they now? (21 students) (see attached)
8. AWSC research facilities (see Section 3)
9. AWSC Organisational Chart (see attached)
10. Key recommendations from the 2002 Review of the AWSC: AWSC responses 2009
11. AWSC KPIs: Responses according to 4 objectives (see attached)

The committee deemed that documentation and the review process provided all necessary material and evidence on which outcomes could be assessed and recommendations formulated.

Appendix 8.6 **Acknowledgements**

The Review Committee wishes to express its appreciation to all individuals and organisations who provided written submissions or made presentations to the Committee. We also wish to thank the Director and members of the AWSC who provided documentation and the students of the AWSC who met formally with the Committee and later over refreshments. In particular we wish to express gratitude to Mr Jeremy Skuse, Executive Officer of the AWSC who ensured smooth running of the review process and both documentation and interview details. Finally, the Committee thanks Ms Anthea Malliaros for support during and following the Review and Mrs Lorraine Ryan of the Foursight office for assistance in collating inputs into the Review and finalising the report.

Appendix 8.7 **Abbreviations**

AWSC	Animal Welfare Science Centre
APL	Australian Pork Limited
AECL	Australian Egg Corporation Limited
AWI	Australian Wool International
ARC	Australian Research Council
AAWS	Australian Animal Welfare Strategy, DAFF/PIMC
ACAC	Australian Companion Animal Council
ALTA	Australian Livestock Transporters Association
ACMF	Australian Chicken Meat Federation
AVA	Australian Veterinary Association
BAW	Bureau of Animal Welfare, Biosecurity Victoria, DPIV
CAWE	Centre for Animal Welfare and Ethics, School of Veterinary Science, University of Queensland
CSIRO	Commonwealth Scientific and Industrial Research Organisation
CRCs	Cooperative Research Centres
DAFF	Australian Government Department of Agriculture, Fisheries and Forestry
DNRE	Victorian Government Department of Natural Resources and Environment (until 2002)
DRDC/DA	Dairy Research and Development Corporation; now Dairy Australia
DPIV	Victorian Government Department of Primary Industries
EU	European Union
FFSRD	Future Farming Systems Research Division of DPIV
GGDF	Geoffrey Gardiner Dairy Foundation

G(C)AW	Graduate Certificate of Animal Welfare
JFFAR	Joint Facility for Food Animal Research (DPIV & UofMelb)
KPIs	Key performance indicator(s)
MLA	Meat and Livestock Australia
Mintrac	National Meat Industry Training Advisory Council Ltd
Monash USG	Monash University Small Grants Scheme
NHMRC	National Health and Medical Research Council
OIE	Organisation Internationale Epizootique
OSU	The Ohio State University, USA
PHIMR	Prince Henry's Institute of Medical Research
PIMC	Primary Industries Ministerial Council
PIAS	Petcare Information and Advisory Service
QDPI	Queensland Department of Primary Industries
QA	Quality Assurance
RSPCA	Royal Society for the Prevention of Cruelty to Animals
RD&E	Research, Development and Extension
RHD	Research Higher Degree (students)
TORs	Terms of Reference
UofM RGS	University of Melbourne Research Grants Scheme
UDV/VFF	United Dairy Farmers of Victoria/Victorian Farmers Federation
Wm Buck Found.	William Buckland Foundation

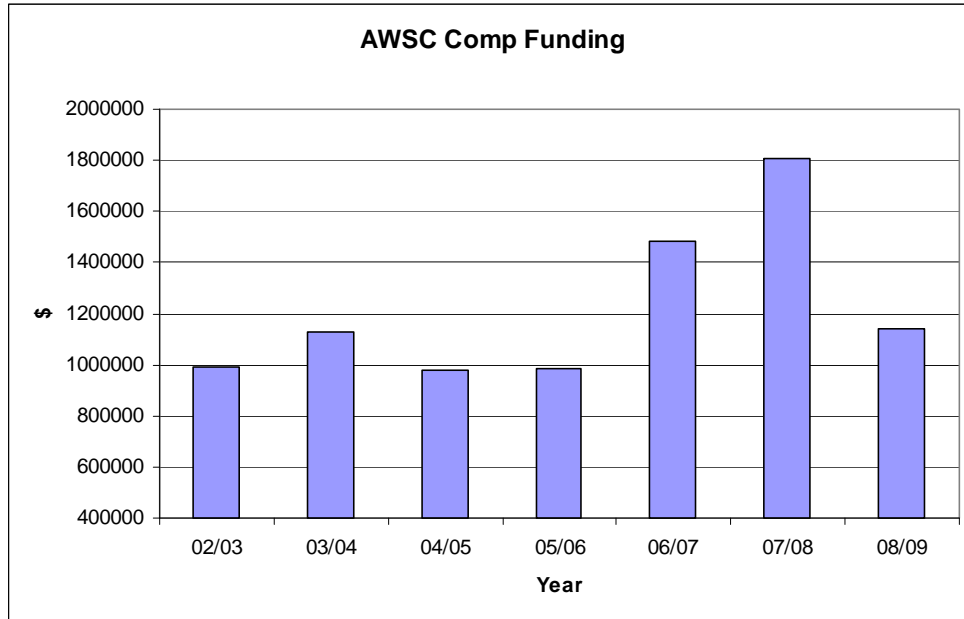
_____ooOoo_____

Attachments

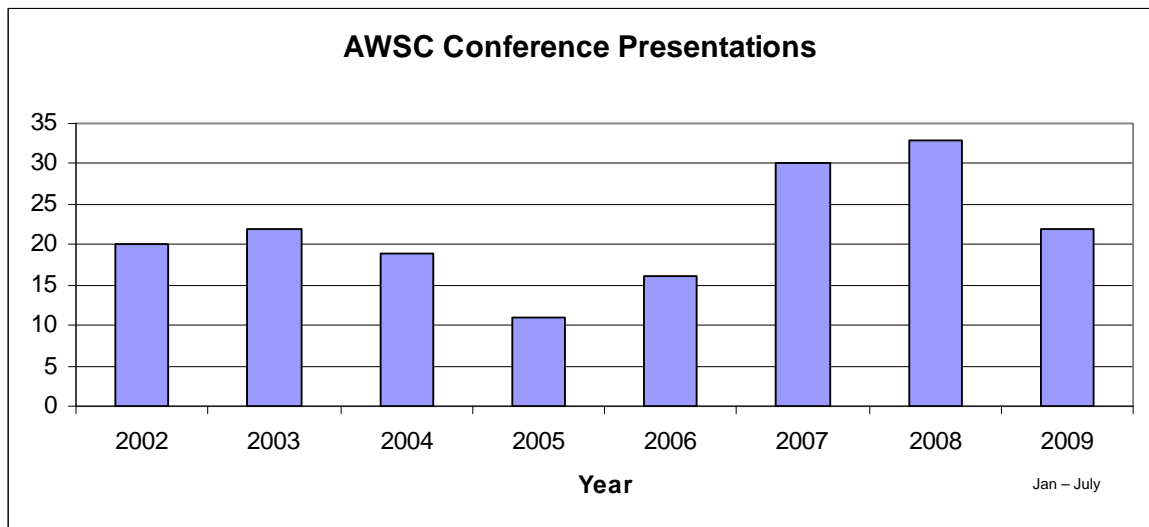
AWSC KPI's

Objective 1 To conduct rigorous, innovative, basic and applied research to improve animal welfare

- *Increase funding by 10% annually*



- *Increase invitations to present at conferences*



- *Increase the publication of papers in high quality journals*

Journal	Impact factor	2002	2003	2004	2005	2006	2007	2008	2009 (to Jun)	TOTAL
Jnl Endocrinology	5.042	1					1			2
Hormones & Behaviour	3.747				1		1	1		3
Neuroscience	3.563						1			1
Jnl Veterinary Behaviour	2.752						2	1	1	4
Jnl Neuroendocrinology	2.554	1						1		2
Jnl Stress	2.531	1								1
Domestic Animal Endocrinology	2.343				1					1
Reproduction, Fertility & Development	2.307	1								1
Jnl Animal Science	2.102	1								1
Jnl Theriogenology	2.022							1		1
Jnl Dairy Research	1.929			1						1
Applied Animal Behaviour Science	1.928	1	10	1	1	3	6	2	4	28
Jnl Comparative Psychology	1.825						1			1
Jnl Poultry Science	1.747							1		1
Jnl Interpersonal Violence	1.589							1		1
Research in Veterinary Science	1.504		1							1
Jnl Community Psychology	1.452		1							1
Jnl Aust Agricultural Research	1.407				1					1
Vet Record	1.243						1			1
Asia Pacific Jnl Clinical Nutrition	1.157			1						1
Aust Jnl Experimental Agriculture	0.988	1						4		5
NZ Jnl Agricultural Research	0.861							1		1
Aust Vet Jnl	0.837		3		1		1	1	3	9
Anthrozoos	0.710				1	1	2	1		5
Jnl Selection and Assessment	0.631						1			1
Asian-Australian Jnl Animal Science	0.627							1		1
Applied Animal Welfare Science	0.558			1	1		1	1	2	6
Veterinaria Italiana	0.474							1		1
Society & Animals	0.271				1					1
OIE Tech Series	-	1								1
Farm Policy Jnl	-						1			1
Jnl Animal & Veterinary Advances	-				1					1
TOTAL		8	15	4	9	4	19	18	10	87

- *Increase the impact factor of publications*
See above table
- *Increase the level of “repeat business”*
Not measured

Objective 2 To establish the Animal Welfare Science Centre as a leading international source of independent, authoritative animal welfare advice

- *Ensure Centre representation on education, research, production animals AAWS subcommittees*

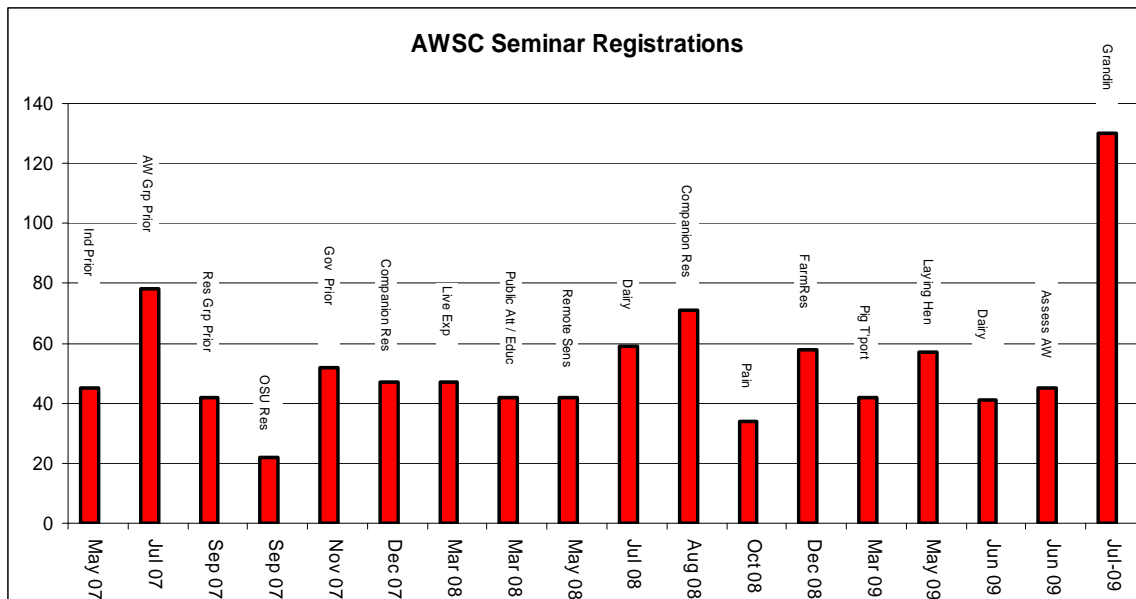
AAWS Production Animals Subcommittee	Andrew Fisher
AAWS RD&E Subcommittee	Paul Hemsworth
AAWS Education Subcommittee	Grahame Coleman
AAWS Animals in Research and Teaching Subcommittee	Paul Hemsworth Mike Rickard
AECL Hen Welfare Advisory Group	Paul Hemsworth
APL Specialist Group	Paul Hemsworth
Australian Poultry Veterinary Alliance’s Animal Welfare Subcommittee	John Barnett
DA Animal Welfare Reference Group Andrew Fisher	Paul Hemsworth
Poultry CRC Welfare Program Manager	John Barnett Paul Hemsworth
Responsible Pet Ownership Advisory Committee	Grahame Coleman
RSPCA Scientific Committee	John Barnett
Sheep Welfare Standards Writing Group	Andrew Fisher

- *Ensure Centre representation on AWAC and sub-committees*

Animal Welfare Advisory Committee	Paul Hemsworth Grahame Coleman (alt)
Animal Welfare Advisory Committee Working Group 1	Grahame Coleman

- *Publication of quarterly electronic newsletter commencing early 2008*
Yes, 6 issues published quarterly from Jan 2008
- *Establish bi-annual meetings with Minister’s advisor*
Not achieved

- *Establish research linkages throughout the value chain, from producer to consumer*
Linkages have been made with retailer. Research proposal under consideration
- *Measure publication of books and chapters*
Reported in annual reports
- *Measure seminar attendance*



Objective 3 To provide relevant, high quality education and training

- *Re-launch GAW as a "school certificate" at Monash University and/or as a Graduate Certificate at University of Melbourne*
Not achieved, still on agenda.
- *Increase number of post-graduate students*
Reported in annual reports

Objective 4 To constantly improve the capability of the Animal Welfare Science Centre

- *Sponsor communications with regard to animal welfare strategy between the Department of Primary Industries and the Department of Innovation, Industry and Regional Development*
Not achieved

- *Formulate succession plan in mid 2008, identify future leaders*
Not achieved, on agenda, recent personnel changes will stimulate
- *Undertake 5 year review in 2009*
Achieved
- *Monthly meetings of Executive*
Meetings held quarterly and on an as-needs basis.
- *Quarterly planning / protocol meetings for all staff*
Meetings held 2 times per year.
- *Conduct annual Centre R&D planning meeting*
Achieved
- *In collaboration with AAWS, work with CAWE and CSIRO, describe current animal welfare R&D capability in Australia, identify future capability requirements and develop a consolidated national plan to achieve this.*
Achieved, National RD&E framework and OIE developments

Past post-graduate students – where are they now?

Adele Arnold (PhD, Melbourne)

Post Doc research fellow, University of Melbourne; Post Doc research fellow, Animal Behaviour Welfare Unit, AgResearch NZ; Animal Welfare Officer, Dairy NZ

Naomi Botheras (PhD, Melbourne)

Animal Welfare extension specialist, The Ohio State University

Kate Breuer (PhD, Monash)

Scientist, University of Newcastle, UK; Scientific Officer, RSPCA, Victoria

Peter Cransberg (Masters, Melbourne)

Scientist, DPI Victoria; Poultry consultant

Fleur Dwyer (D.Psych, Monash)

Studying medicine at UQ

Lauren Edwards (PhD, Melbourne)

Post Doc research fellow, University of Melbourne

Joanna Engel (Masters, Ohio)

PhD student, University of Melbourne

Marcus Karlen (Masters, Melbourne)

PhD student, University of Melbourne

Keven Kerswell (PhD, Melbourne)

Casual research assistant, University of Melbourne

Amanda Kobelt (PhD, Melbourne)

Pest Control, DPI Vic

Mariko Lauber (PhD, Melbourne)

Animal Welfare Education Officer, DPI Vic and lecturer, University of Melbourne

Jacqui Ley (PhD, Monash)

Companion animal animal behaviour consulting and post doc research

Linda Marston (PhD, Monash)

Post Doc research fellow at Monash with Pauleen Bennett

Andrew McLean (PhD, Melbourne)

Consultant, horse behaviour

Naomi Pearson (Masters, Melbourne)

Bureau of Animal Welfare, DPI Vic

Bree Pierce (PhD, Monash)

Clinical trials manager with a pharmaceutical company

Sabine Roussel (PhD, Melbourne)

Lecturer, INA P-G, Paris, France

Rebecca Sargent (PhD, Melbourne)

Animal Welfare research scientist, Rivalea Australia

Ken Smith (Masters, Ohio)

Auditor of farm facilities in US for US certification organisation

Anne Turner (PhD, Monash)

Research fellow, Dept Physiology, Monash University

Neva Van de Kuyt (Masters, Melbourne)

Bureau of Animal Welfare, DPI Vic

AWSC Organisation Chart

