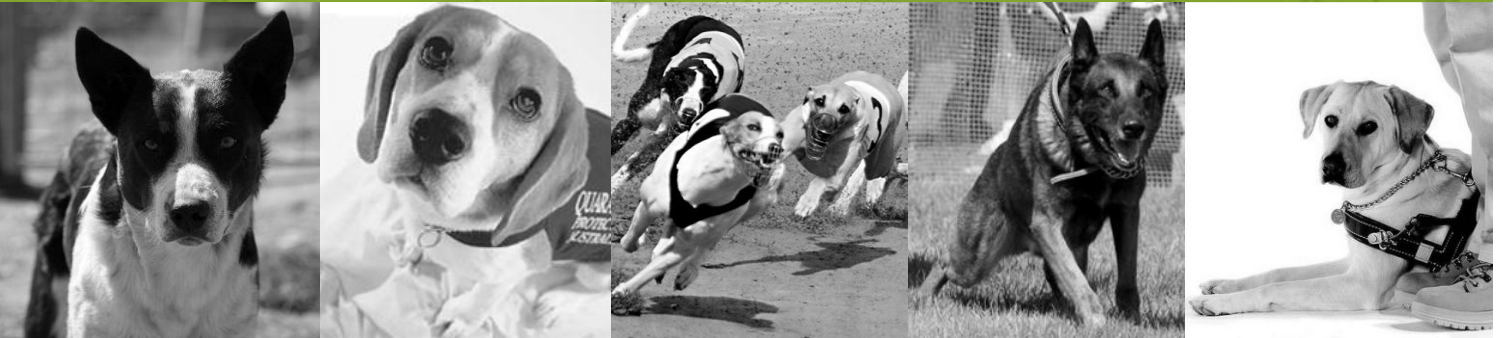


Australian Working Dog Industry Action Plan 2012



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AUSTRALIAN ANIMAL WELFARE STRATEGY

The Australian Working Dog Industry Action Plan 2012 was a project supported by funding from the Australian Government Department of Agriculture, Fisheries and Forestry under the Australian Animal Welfare Strategy.

The Australian Animal Welfare Strategy is a national partnership between governments, industries and the community to improve animal welfare for all Australian animals. For more information visit [this website](#).

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Definitions

A **working dog** is defined as a domestic dog kept for non-companion purposes, that works in a private industry, government, assistance or sporting context.

A **dog handler** is considered to be an individual at the first stage of their education. They may work a dog that a *dog trainer* has already prepared for work without direct involvement in the dog's training process.

A **dog trainer** is an individual who has achieved a higher level of understanding and competence through education. An individual is taught to be a dog trainer by being provided with a toolbox of skills that enables them to develop a training plan, to choose appropriate training tools, and to teach the dog.

A **coach educator** is an individual who plays a key role in mentoring and assessing the performance of a working dog trainer's ability to teach other dog trainers. Their aim being to improve the validity and reliability of teacher effectiveness in the industry.

Best practice refers to a system of processes, checks and testing that will deliver an outcome that has fewer problems and fewer unforeseen complications, and that combines the attributes of the most efficient and most effective ways of accomplishing a task based on proven and provable (evidence-based) methods.

Plan refers to this document.

Please note: Hyperlinks are used throughout this document to directly link the reader to relevant websites, references and documents and will *appear like this*. By clicking on a sub-heading in the Contents page you will be taken directly to that location in the document. In those instances where the full reference cited is only available by subscription, a website containing the article's abstract has been provided.

Section 1: Introduction

1.1 Australia's Working Dogs and AAWS

Australia's working dogs are valued to the point of being iconic but paradoxically the working dog industries are unsupported by cohesive research and development. Working dog welfare is intimately linked to working dog performance. This document explores mechanisms to benefit both working dogs and those who use them. For the purpose of this Australian Working Dog Industry Action Plan document, a 'working dog' is defined as a domestic dog kept for non-companion purposes that works in a private industry, government, assistance or sporting context.

The Australian Working Dog Industry sectors include the following groups:

- **Private Industry** – Farm; Hunting; Security/Guard; Detection
- **Government** – Australian Customs Service (ACS); Australian Quarantine Inspection Service (AQIS); Correctional Services; Fire Brigade; Australian Defence Force (ADF); Police, Royal Australian Engineers
- **Assistance/Service** – Hearing; Physical; Guide/Seeing Eye; Search and Rescue; Therapy
- **Sport** – Greyhound; Sled; Sheep Trial; Cattle Trial; Schutzhund

The Australian Animal Welfare Strategy (AAWS) was developed by the Australian Government with assistance from the National Consultative Committee on Animal Welfare, in consultation with state and territory governments, animal industry organisations, animal welfare groups and the general public. It was launched by the Minister for Agriculture Fisheries and Forestry in October 2005. The strategy is for the entire Australian community including animal owners, veterinarians, livestock producers, processors, transporters, animal welfare bodies, researchers, consumers and government agencies. The AAWS is intended to guide the development of new, nationally consistent policies and will enhance existing animal welfare arrangements in all Australian states and territories. The AAWS working groups connect the Strategy and stakeholder networks. Working dogs fall under the responsibility of the working group for *Animals used in Work, Sport, Recreation and on Display*.

The goals of the Australian Animal Welfare Strategy are to achieve:

- 1) An enhanced national approach and commitment to ensure high standards of animal welfare based on a concise outline of current processes;
- 2) Sustainable improvements in animal welfare based on national and international benchmarks, scientific evaluation and research, taking into account changes in whole of community standards; and
- 3) Effective communication, education and training across the whole community to promote an improved understanding of animal welfare.

In line with the first goal of the AAWS, the inaugural Australian Working Dog Survey, conducted in 2009, provided a national outline of current processes in Australia's working dog industry sectors. The results were presented in the *Australian Working Dog Survey Report* made available online by the Department of Agriculture, Fisheries and Forestry in 2010.

Based on the information received from industry respondents, four key recommendations were made in the Australian Working Dog Survey Report:

- Development of a national education and accreditation program for working dog trainers.
- Development of task-specific working dog breeding programs to reduce behavioural wastage.
- Recognition of the need for an umbrella research body to coordinate research and development; manage and fund priority research and facilitate translation of results into practical outcomes for industry development.
- Consultation with the veterinary profession to develop strategies for facilitating information-flow to working dog trainers nationally.

The 'Australian Working Dog Industry Action Plan' (the Plan) aims to address *Goals 2 and 3 of the AAWS* that intend to assist with achieving:

- 2) Sustainable improvements in animal welfare based on national and international benchmarks, scientific evaluation and research, taking into account changes in whole of community standards, and
- 3) Effective communication, education and training across the whole community to promote an improved understanding of animal welfare.

1.2 Industry Consultation

To further the development of the Recommendations from the *Australian Working Dog Survey Report*, industry feedback was sought using the Australian Working Dog Industry Consultation Survey 2012 (*Appendix 1*).

Method:

Approval for the survey was granted by the Deakin University Human Research Ethics Committee, approval number STEC-08-2012. Respondents to the survey were asked to rate and rank the relative importance of the Recommendations from the Australian Working Dog Survey Report in terms of their potential to improve animal welfare specifically in their sector of the Australian Working Dog Industry.

The survey was hosted online from 13 April 2012 for a period of eight weeks. Response options were reversed at regular intervals to control for any order effect. Industry stakeholders were invited to participate via direct email and web links offered through an extensive recruitment campaign comprising local government, *registered training organisations (RTOs)*, professional member groups and organisations, social media, online forums, working dog contacts identified through online search engines and respondents to the inaugural Australian Working Dog Survey. In addition to the Australian Working Dog Industry Consultation Survey, several letters and emails were received from stakeholders, contributing to the development of the Plan.

Industry Consultation Survey 2012 Respondents by Industry Sector

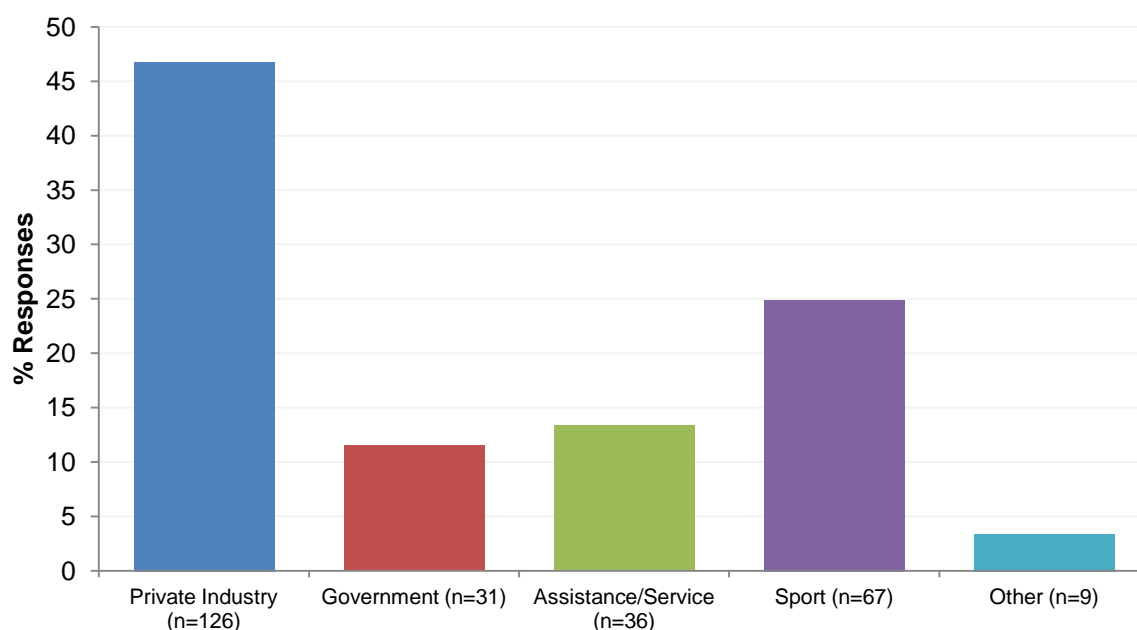


Figure 1: Industry consultation survey respondents (total n=269) by industry sector.

Summary findings:

A total of 269 respondents participated in the Australian Working Dog Industry Consultation Survey 2012 (see Figure 1 for a breakdown of respondents by industry sector). The Australian Working Dog Industry Consultation Survey 2012 found that stakeholders across the Australian Working Dog Industry sectors generally agreed on the importance of optimising the health, welfare and training knowledge assigned to working dogs (see Figure 2 below). This is not surprising, for when it comes to providing for the health, welfare and training of Australia's working dogs, the industry sectors have much in common.

Commonalities in the health and welfare needs of Australia's working dogs reflect the shared nutritional, environmental, health, behavioural and cognitive/neural functions of canines – similarities that are not affected by the functional role that the dog undertakes. The principles of learning and conditioning are the same across all animal species. Therefore, the approach to training working dogs should also be the same across working dog industry sectors.

Dog health care: 99.6% of respondents rated as important or very important.

Dog training techniques: 99.2% of respondents rated as important or very important.

Dog housing/facility management: 95.8% of respondents rated as important or very important.

Dog trainer/handler education: 94% of respondents rated as important or very important.

Sourcing/Breeding dogs: 92.8% of respondents rated as important or very important.

Figure 2: The percentage of respondent stakeholders (n=269) who rated the intervention aspects as important or very important to the welfare of dogs in their sector.

These findings can be considered from the perspective of the *Five Freedoms* - a framework that has been widely adopted globally as a reference point from which to evaluate the health and welfare of all animals under human control.

The Five Freedoms are:

1. **Freedom from hunger and thirst** - by ready access to fresh water and a diet to maintain full health and vigour.
2. **Freedom from discomfort** - by providing an appropriate environment including shelter and a comfortable resting area.
3. **Freedom from pain, injury or disease** - by prevention or rapid diagnosis and treatment.
4. **Freedom to express normal behaviour** - by providing sufficient space, proper facilities and company of the animal's own kind.
5. **Freedom from fear and distress** - by ensuring conditions and treatment which avoid mental suffering. In this context, mammalian species share more similarities than they do differences.

Thus, regardless of their breed or working role, all Australian working dogs share the same basic needs.

1.3 Community Perceptions and Expectations

The support of the Australian community for working dogs originates from the historical role of the iconic working dog in Australian agriculture. In considering the expectations of the Australian community in relation to animals, it is worth noting that, on a number of measures, Australians express increasing concern for animal welfare (*Franklin, 2007*). For example, in 1993, 42% of Australians agreed with the proposition that animals should have the same moral rights as human beings. By 2004, this figure had increased to 55%. The same study reports that 88% of Australians reported that they ascribe family membership to animals (*Franklin, 2007*). In 2010, 95% of surveyed Australians reported that the welfare of dogs was very important to them (*in preparation, Cobb, Lill and Bennett*). Growing awareness of the implications of animal use and management on welfare has led to rising public expectations and lower levels of tolerance for conditions perceived as adequate (*Sandøe and Christiansen, 2008*). Whilst a positive public perception extends to most of the working dog industry groups (see Figure 3 on the following page), concern has been publicly expressed about the welfare of Australia's working dogs. Multiple hits were found using online search engines using key words: 'Australia', 'working', 'racing', 'dog', 'welfare', 'drowning', 'abuse', 'animal rights'. The Australian Working Dog Industry can be pro-active in developing a pro-animal welfare stance that will serve to rebut claims of cruelty such as those described online.

	Perceived level of welfare (% of respondents)				
	Very low	Low	Neither low or high	High	Very high
Stray/Street dog	64	22	6	3	5
Feral/Wild dog	34	29	24	8	5
Racing Greyhound	20	36	23	14	7
Pig Hunting Dog	15	30	35	13	7
Guard (property protection) Dog	11	38	32	13	6
Pedigree Pure Breed Show Dog	6	15	28	31	20
Sled Racing Dog	3	12	32	38	15
Farm (stock herding) Dog	2	12	31	41	14
Average Pet Dog	1	4	44	42	9
Firearm/Explosives Detection Dog	2	8	18	44	28
Plant/Food Detection Dog	1	2	18	51	28
Police (tracking/apprehending) Dog	1	3	13	51	32
Drug Detection Dog	1	3	12	51	33
Assistance/Service Dog (for physically impaired)	1	3	11	51	34
Search and Rescue Dog	0	2	11	54	33
Guide/Seeing Eye Dog	1	2	9	44	44

Figure 3: Table of perceived (self-rated) level of welfare of different working dogs. Shading denotes the two highest response categories for each dog type. From: Cobb, M., Lill, A. Bennett, P. (currently in prep.) Attitudes and perceptions regarding dog welfare and the provision of enrichment in kennel facilities.

In the near future it is likely that the general community and industry itself will place an increasing emphasis on ensuring the competency of the animal trainers and handlers who manage the animals. In this light, meeting and exceeding community expectations for standards of animal care can be considered effective risk management for animal-based industries. As stated in

Loveridge (1998) we are living in an increasingly visible and public world, which is becoming less tolerant of animal care standards that differ from public expectations. This trend is also covered in a *recent online article* by Professor Clive Phillips. The Australian Working Dog Industry Action Plan provides an opportunity for Australia's working dog industry to be pro-active in developing an industry-wide approach towards a sustainable future and maximised welfare for the working dogs of Australia.

1.4 Professional Standards

A potential conflict of interest for all animal industry stakeholders is placing financial considerations ahead of the welfare of animals. Indeed, it has previously been concluded that the welfare of the individual working dog may compete with the needs of the program to produce and maintain a sufficient number of dogs capable of performing the tasks required (*Burghardt, 2003*). Many animal industries have developed quality assurance schemes and registration processes in order to ensure community expectations are met in light of this potential conflict of interest.

The prevalence and importance of 'quality assurance' for consumers is set to increase. General information about the development of standards is provided by the *International Organisation for Standardisation (ISO)*. Such programs already exist in the field of laboratory animal research (e.g. *Association for Assessment and Accreditation of Laboratory Animal Care International [AAALAC]*; *Good Laboratory Practice [GLP]*) and livestock production (e.g. *ProHand*: a livestock handler training program; *Australian Pork Industry Quality Assurance Program [APIQ]*: an on-farm quality assurance system based on following *Good Agricultural Practices [GAP]*). In Australia, egg, pork, chicken and turkey producers whose farms meet the RSPCA's standards can apply to join the *RSPCA Approved Farming Scheme*. A range of other schemes have been adopted, for example, *Animal Welfare Approved*, a product labelling system that certifies to the consumer that the producer's practices have been audited against a third-party's animal welfare standards.

The Australian Working Dog Industry Action Plan provides an opportunity to investigate the two layers of quality assurance processes required for working dogs – the first at the level of husbandry – notably, provision of suitable housing, nutrition and health care; and the second at the level of dog training. One of the Key Findings of the *Australian Working Dog Survey Report* was that correction and electric shock collars are most commonly used by working dog trainers who have not received any formal certified education in dog training.

This finding is of particular interest and concern, given that it contrasts so sharply with the training approaches embraced by marine mammal trainers e.g. *International Marine Mammals Trainers Association* and contemporary elephant trainers e.g. *Human Elephant Learning Program (HELP)*. The sophisticated level of training achieved by marine mammal and elephant trainers is on a par with that required for working dogs. The success of these groups clearly demonstrates that choosing an aversive approach to animal training is not required. Instead, these areas of animal training for work and entertainment purposes are based on behaviour modification through operant conditioning and do not involve the use of electric shock, fear, intimidation, choke or prong collar. Comparatively, the *United States Military Working Dog Program* does not include the use of electric shock collars. Indeed, their *Military Working Dog School* endorses the use of positive reward-based training, reflecting that "A dog does not understand the difference between right and wrong according to human standards. Desired response is communicated to the dog through reward. When the dog responds correctly, it is rewarded with verbal praise, physical

petting or, with food or play articles. Inflicting pain on a dog is detrimental to training and not allowed'.

Purely from a productivity perspective, research has shown that interactions between human handlers and their animals can limit the welfare and performance of the animals (*Hemsworth et al., 1994; Coleman et al., 2000, 2003*). This group has found that one of the strongest predictors of handler behaviour is the attitude of the individual handlers towards interacting with their animals. The *ProHand* program has demonstrated the ability of a training program to modify human attitudes that have a direct effect on animal fear, productivity and welfare (*Coleman et al., 2000, 2003; Hemsworth et al., 1994, 2002*). This program relies on changing established habits and altering well-established attitudes and beliefs. Improved animal handler job satisfaction, motivation and work performance have been other beneficial outcomes of ProHand. Not only does the animal function well from work performance and welfare perspectives, but the handler's job becomes more enjoyable as animals are easier to manage leading to increased productivity and consequent economic benefits (adapted from *Hemsworth, 2008*).

The success of cognitive-behavioural interventions in improving the key attitudes and behaviour of stock people in the livestock industry clearly demonstrates the potential benefit of adopting similar training programs in other animal industries, offering significant opportunities for industries to improve the welfare of their animals. To underestimate the role and impact of the dog trainer and handler on the dog has the potential to seriously jeopardise the welfare, performance and productivity of working dogs.

A Conundrum: Beliefs and Objective Measures

An important part of developing a national strategy toward professional standards is to consider the beliefs and attitudes of stakeholders. This is a critical step towards developing a sustainable industry model that relies on objective measures. Given that attitudes and their underlying beliefs have been established to be an important determinant of the actions of handlers towards their animals, it is worth briefly considering some popular beliefs relating to working dogs in Australia and whether they can be measured objectively.

A belief:

- An acceptance that a statement is true or that something exists in the absence of objective evidence.
- Something one accepts as true or real; a firmly held opinion or conviction.
- Our beliefs inform our attitudes and attitudes have been shown to predict a range of human behaviours, including our behaviour towards animals.
- Beliefs are the reasons we use to justify or explain our actions and behaviour.

An objective measure:

- An objective measurement is one that does not vary with observers or with time.

In the scientific literature, the concepts of 'intra-observer reliability' and 'inter-observer reliability' are used to assess whether the results that have been collected are a true reflection of what is reported to have occurred.

- **Intra-observer reliability:** assesses whether the results collected by the same person on different occasions are the same or different.
- **Inter-observer reliability:** assesses whether the results collected by different people on the same and/or different occasions are the same or different.

Belief 1: Good working dogs have high drive

The *Scientific Working Group on Dog and Orthogonal detector Guidelines* (SWGDOG) *Terminology Guideline* document defines drive as: a willingness, vigour, or enthusiasm to engage in certain behaviour, contexts, or situations. This Guideline also describes some of the problems caused by the use of this term by both the scientific and operational communities.

Questions for objective consideration:

- Can you define drive?
- Can you measure drive?
- Are the definitions and measures of drive used standardised within and between working dog programs?
- Are the results the same when the same person assesses a dog for drive on more than one occasion - or do they differ?
- Does the definition of drive vary between industry sectors e.g. stock working drive versus protection work drive versus greyhound drive?

Considerations: In discussing the attributes of a working dog, an individual person may believe that they have a good understanding of what drive means to them. However as drive cannot be objectively measured, it does not, in itself, provide a robust indicator of working dog performance and should not be used as a criterion on which to base the selection of working dogs.

Welfare impact: The physical and psychological effect of work on the dog must be considered. Only measures that can be used and compared between genetic and/or behavioural tests should be used to evaluate a dog's ability. When the assessment of a dog's suitability to perform a particular task is not based on an objective measure, our ability to measure the effect of the work on the dog will also be compromised.

Belief 2: Training outcomes are dependent on the dog's instinct (innate response)

Definition of instinct:

1. Possessed at birth; inborn.
2. Possessed as an essential characteristic; inherent.

Questions for objective consideration:

- Can instinct be measured?
- Are your measures of instinct the same as those used by other practitioners?
- Are the results the same when the same person assesses a dog on more than one occasion, or do they differ?
- Does the definition of instinct vary between industry sectors e.g. stock working instinct versus protection work instinct versus greyhound instinct?

Considerations: In discussing the attributes of a working dog, individuals may believe that they have a good understanding of what instinct means to them. Our current level of knowledge relating to the relative contribution of genetics, environment and learning to behaviour does not allow us to measure the concept of instinct. Therefore, as instinct cannot be measured, it does not provide a robust indicator of working dog performance and should not be used to select working dogs.

Welfare impact: When used in a positive sense, the term instinct does not accurately explain the underlying reason behind a dog showing behaviour that pleases a person. When used in a negative sense the term instinct may be used to blame a dog for showing behaviour that is undesirable to a person or that may be interpreted as under-performing. The reason for this is that a large number of variables are involved in determining a displayed behaviour, for example, health status of the dog, training methodology and skill of the trainer.

Belief 3: Breed is an important determinant of a dog's ability to perform a specific operational task

Questions for objective consideration:

- Do we know we have chosen the right dog breed for a specific task?
- Have large-scale studies been conducted that allow the performance of large numbers of dogs of each breed to be compared for performance on this task?
- Is a dog's physical and mental capability more important than its breed in determining its suitability to perform a specific task?

Considerations: The use of a particular breed of dog to perform a working role is historical, rather than based on a categorical assessment of the dog's behavioural capabilities. The role of breed may be important in determining a dog's suitability for selection to perform a specific task. However, the current absence of genotyping and performance data in working dogs means that it is unknown whether this is true or not.

Welfare impact: As indicated above, the physical and psychological effect of work on the dog must be considered. Only measures that can be used and compared between genetic and/or behavioural tests should be used to evaluate a dog's ability. When the assessment of a dog's suitability to perform a particular task is not based on an objective measure, our ability to measure the effect of the work on the dog will also be compromised.

Belief 4: Dogs find work rewarding

Questions for objective consideration:

- Do we know that when a dog is performing a task, that it is also finding it rewarding? For comparison, it is worth considering the human equivalent – despite the fact that many people attend work every day, not all of them also find it rewarding.

Considerations: Given that there are benefits for humans when dogs work for us, it is convenient for us to consider that the dog enjoys it. Whilst it is acknowledged that the dog *may* actually enjoy the work, caution should be exercised in how literally this belief is involved in a handler making decisions about a dog's work-load.

Welfare impact: There is a potential risk that a dog's willingness to work may result in it being over-worked. For example, in instances where a dog is unwell, it could be worked anyway, because they are perceived to 'enjoy it'.

Percentage accuracy is an objective measure of a dog's performance that can be compared between dogs and over time.

For example, a detector dog's accuracy can be expressed as a percentage:

$$\frac{\text{the number of times the dog correctly identified the odour}}{\text{the number of times the odour was presented to the dog}} \times 100$$

= % accuracy

Developing the industry

The definitions for terms used to describe working dogs must be agreed upon at an industry-wide level for transparency, consistency and reliability. Currently, much of the decision making relating to working dog selection is based on belief, rather than objective measures. It is not until the definitions used to describe working dogs are agreed upon at an industry-wide level that the decision making system based on beliefs can be robustly compared with objective measures. *SWGDOG terminology* highlights the potential opportunity for both researchers and working dog industry members to improve objectivity in this area.

Recent trends both overseas and in Australia suggest that Governments, industry bodies, the general public and end users will soon call for the incorporation of welfare audit documentation into a quality assurance (QA) program for the training, handling and management of animals used in working contexts. Thus, to be effective in the long term, the Australian Working Dog Industry will require the introduction of an appropriate training program designed to achieve consistency in the attitudes, behaviour and practices of working dog trainers and handlers. A key component of establishing the validity of such a QA program will be to develop an agreed set of terminology definitions based on objective descriptions that will remain reliable between individuals and sector applications.

It is also worth considering professional standards in terms of industry productivity and sustainability. In the *Australian Working Dog Survey Report*, Australia's most successful working dog training programs reported that up to 50% of dogs selected for training graduated and

became working dogs. Amongst others, the *Seeing Eye Dogs Australia*, *Royal Guide Dogs Tasmania* and *Guide Dogs Queensland* have indicated that the cost to breed, train and place a guide dog is around \$30,000. Until knowledge sharing and agreed terminology is adopted as standard practice, it is unlikely that the success rate of working dog programs will improve significantly. In terms of resources and time allocated, the economic burden of this scenario is self-evident.

Section 2: Expanding the Australian Working Dog Survey Report Recommendations

2.1 Development of a national education and accreditation program for working dog trainers

Industry consultation survey results:

- 99.2% of respondents rated dog training techniques as important or very important to the welfare of dogs in their sector.
- 94% of respondents rated dog trainer/handler education as important or very important to the welfare of dogs in their sector.
- 65.2% of respondents rated the recommendation for development of a national education and accreditation program for working dog trainers as important or very important to the welfare of dogs in their sector.
- This recommendation was ranked highest by respondents in relation to the other recommendations. 49% of respondents ranked this recommendation as the first or second recommendation most likely to improve welfare of dogs in their sector.

The predominant learning framework for Australia's working dog trainers is through the informal spontaneous development of skills, rather than a structured learning process. Such informal training, described as 'Dogmanship' (*McGreevy et al., 2012*), can be highly successful and may even parallel a number of formally recognised theoretical frameworks. These deal with the principles of animal learning such as applied animal behaviour science, genetics, animal welfare science, psychological learning theory and education service providers such as Coach Educators. In other circumstances, however, the outcomes of informal training may run counter to what has been evaluated on the basis of the evidence available from a number of sources as *best practice*. This mis-match has the potential to compromise the welfare and, by extension, the productivity of Australian working dogs. Under a spontaneous development framework, an individual's knowledge base develops through conversation, personal and shared experience. Essentially, therefore, a large proportion of Australia's working dog trainers, especially in a resource-deprived rural environment, are operating in a virtual professional development vacuum, relying largely on techniques that they themselves have found to be successful. There are a number of similarities in this regard between the Australian Working Dog Industry and the training development of other skilled worker groups e.g. nurses and tradesmen. Training programs for these other skilled professions originally involved only on-the-job training. This is no longer the case. Most professions now include components of both on-the-job training and formal education, with evidence of ongoing education being required to maintain registration with the professional body organisation. Structured learning programs offer a range of opportunities to skilled professions, such as formal recognition of expertise and quality assurance for the wider community.

Currently, a significant and abiding weakness of the Australian Working Dog Industry is that its knowledge base resides predominantly at the level of the individual dog trainer. It has previously been stated that "much of the training of greyhounds is based on knowledge handed down over time, and often this methodology is out of date, flawed or unacceptable in today's society" (*Beer, et al., 2008*).

Given the maturity of information technology and information management systems, it is incumbent upon the industry itself to consolidate disparate learning resources into a shared knowledge base and provide opportunities for its dissemination. It is time that the Australian Working Dog Industry sought external validation of existing professional expertise. Such a process offers the opportunity for the existing skill base to be formally recognised. The mechanism by which this goal can be achieved will be dealt with in greater detail in the following section titled '*The education of Australia's working dog trainers*'.

It is incumbent upon the Australian Working Dog Industry to advance the welfare of Australia's working dogs by expanding the current state where knowledge and skills are acquired informally to a situation where participants are able to draw upon the wider knowledge base available. The AAWS Strategy aims to engage the following stakeholder groups: animal owners, veterinarians, livestock producers, processors, transporters, animal welfare bodies, researchers, consumers and government agencies. Representatives of each of these groups should be included as collaborators in this venture to develop a national education and accreditation program for working dog trainers.

As there is no formal structure to facilitate the sharing of existing expertise across the working dog industries through knowledge sharing, the AAWS goal of achieving continuous quality improvement in animal welfare standards is currently thwarted. Therefore, for the industry at large to develop to its full potential, consolidation into a corporate knowledge base is required. This is not the first time this conclusion has been drawn. Indeed, over the last decade, a number of groups have formed around the world to assist with the development of clear communication between working dog industry stakeholders.

International trends and local developments

Since 1999, the *International Working Dog Breeding Association (IWDBA)* has held a bi-annual conference for working dog industry participants. The goal of this organisation is to support professional education and interaction regarding applied science, veterinary care and husbandry, and program management issues related to the selective breeding, rearing, and assessment of dogs involved in working occupations. In 2005, the IWDBA held its conference in Australia and it was well attended by both local and international working dog industry stakeholders. This reflects the high motivation for Australian Working Dog Industry participants to collaborate and access state-of-the-art information relating to structured improvements in the management of working dogs. The most recent IWDBA conference in was attended by 188 representatives from 19 countries. *The Penn Vet Working Dog Centre* has held conferences in 2010 and 2011 and the conference audio presentations are *available online*.

The *Scientific Working Group on Dog and Orthogonal Detector Guidelines (SWGDOG)* was developed in North America in 2004 to address the broadly expressed need to improve the performance and reliability of detector dog teams. SWGDOG has 55 members who include local, state, federal and international working dog agencies and its goal is to assist with the establishment of consensus-based *best practice*. SWGDOG has developed a number of Approved Guidelines e.g. The *SWGDOG Terminology Guideline* provides a list of agreed definitions for terms commonly used in the working dog industry. Readers of this Plan are referred to this document for definitions of terms that appear in italics (e.g. '*best practice*'). SWGDOG also acts as a focal point for researchers interested in this field. Its website currently invites practitioners to participate in a project collecting information for an independent assessment of puppy-raising foster programs for working dogs.

Locally, the *Australian Service Dog Association* is a membership organisation for dog handlers working for Australian government law enforcement agencies. In 2009, Queensland Police Service hosted the 'K9-09 Service Dogs Conference'. The conference theme was 'Developing

best dogs and best practice'. This conference was the first of its kind in Australia and featured presentations on operational dog squads in Victoria, the USA and the UK, genetics, breeding, puppy development and organisational risk. The event attracted approximately 140 delegates from service dog agencies and related industries across Australia and New Zealand, including police, military, fire and rescue, security, assistance and therapy sectors.

The education of Australia's working dog trainers

In addition to holding conferences/workshops/seminars as inter-sector collaboration and networking opportunities for working dog industry stakeholders, the industry at large would benefit from a nationally accredited program for working dog trainers.

The *Australian Skills Quality Authority (ASQA)* regulates courses and training providers to ensure that nationally approved quality standards are met. *Registered training organisations (RTOs)* are training providers registered with ASQA to deliver Vocational Education Training (VET). The providers of VET include technical and further education (TAFE) institutes, adult and community education providers and agricultural colleges, as well as private providers, community organisations, industry skill centres, and commercial and enterprise training providers.

A complete list of RTOs is available at the Australian *government TGA website* – the official National Register of information on Training Packages, Qualifications, Courses, Units of Competency and RTOs in Australia. There are currently *18 courses* registered with *ASQA* (or in some cases, a State Regulator) that include some component related to dog training. Some RTOs offer courses that include subjects relating to working dog training but no Australian RTO currently offers a certified course dedicated to educating working dog trainers under the nationally approved *Australian Quality Training Framework* standards set by ASQA. *Australian Government Skills Connect* is a new service designed to help link eligible Australian enterprises with a range of skills and workforce development programs and funding. It brings together funding from six different training and workforce development programs to better target industry and worker training. Therefore, whilst the regulatory structure to support the development of a nationally accredited working dog program exists, the curriculum has not yet been developed.

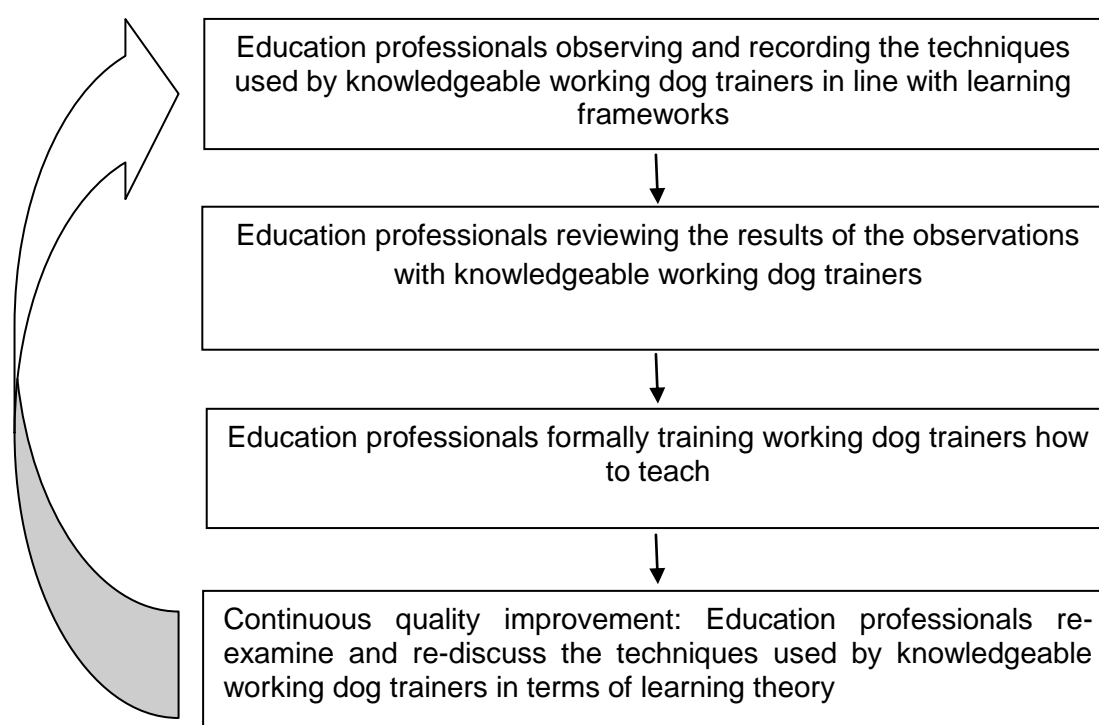


Figure 4: The stages for developing a formal working dog training curriculum

Using the *ASQA 'Get a Course Accredited' Guidelines*, a curriculum could be developed using the following five stages, each of which focuses on the long-term goal of continuous quality improvement:

Stage 1: Preliminary Research and Consultation

Stage 2: Course Development

Stage 3: Course Design and preparation of the course accreditation submission

Stage 4: Assessment by ASQA

Stage 5: Decision by ASQA

Stage 1: Preliminary Research and Consultation

This Plan proposes that the transformation from individual experiential/informal education to a formalised industry-training program can be achieved. The approach should involve developing a *best practice* working dog training curriculum that relies solely on evidence-based approaches to dog training. Part of this curriculum development will involve an assessment and evaluation of the belief-based decision making system referred to previously in *A Conundrum: Beliefs and Objective Measures*. Such a curriculum would endorse any, and all, training systems that align with basic principles of ethical training – an approach that has been described in the field of *animal behaviour consulting* as LIMA – Least Invasive, Minimally Aversive. An ethical, evidence-based training approach would not support the use of intimidation, fear or pain, choke collars, prong collars and e-collars. Further information on ethical, evidence-based dog training can be readily found online at the *Welfare in Dog Training* website.

Similar systems are being developed in equitation. For example, rather than stipulating single approach to modifying horse behaviour, the *International Society for Equitation Science (ISES)* encourages all horse trainers to self-evaluate their training systems against a checklist of basic principles (see Figure 5 on the next page).

1. Use signals that the horse can distinguish.

Apply signals that are clearly distinguishable from each other.

2. Train and build responses one at a time.

Break down each response into its basic building blocks and then put them together to build more complicated responses.

3. Train only one response per signal. Each signal should only have one outcome.

Reward only one response for each separate signal, although signals for the same response can be associated with each other. An example of this is seen with the use of seat signals to cue a horse to slow down, if associated first with rein tension cues.

4. Form habitual responses using consistency and repetition.

Establish default responses. An example of this is seen when a horse is trained to perform a transition within a defined number of footfalls.

5. Train persistence of responses.

Reward horses for maintaining behaviour until another signal is given. The horse should not be subjected to nagging.

6. Eliminate fear during training.

Ensure that all characteristics of the environment during training (including humans) are not associated with fear. An example of using fear to motivate is chasing horses.

7. Check for relaxation.

Ensure that the horse is relaxed and not physically forced to offer a response. It is important that techniques and equipment are not used to mask any undesirable behaviour.

Figure 5: International Society for Equitation Science checklist of basic principles for ethical training.

Stage 2: Course development

In order to be credible, the curriculum developed to facilitate knowledge transfer within the Australian Working Dog Industry must not be haphazard or anecdotal; it must be based on results that are objectively and critically reviewed before acceptance. Therefore, curriculum development should include consultation with a variety of different professional representatives, skill and knowledge bases. These should include but not be restricted to: educators, animal behaviour, production and welfare scientists, animal welfare advocates, ethicists, veterinarians, industry stakeholders, regulators, lay people and representatives from the different working dog sectors. The outcome of these collaborations would be the development of a common approach that is unanimously endorsed by all of the professional representatives and the government regulator.

Stage 3: Course Design and preparation of the course accreditation submission is the final step in the process prior to the curriculum being submitted for **Assessment by ASQA (Stage 4)** and **Decision by ASQA (Stage 5)**. Once this process has been completed, the course will be eligible to be offered by registered training organisations.

Industry Educators

Current practice is generally that working dog trainers teach other people how to train working dogs. However, a central message of this Plan is that educating a working dog trainer requires a different skill-set to that required to train a working dog. Recognising this dichotomy, the *equestrian industry* has developed this concept into a role referred to as Coach Educators.

Individuals in this position play a key role in mentoring and assessing the performance of a teacher to improve the validity and reliability of educator effectiveness in the equine industry. Therefore, industry development is required to ensure that skilled professionals who are equipped with the skills and knowledge required to teach another person how to train a dog become the educators of working dog trainers. Many professional industries utilise a program of continuous education, via conference/seminar/workshop attendances to ensure individuals are eligible to retain ongoing accreditation and registration.

The definition of a working dog trainer should not be limited to the training scope of the individual. Rather, the Australian Working Dog Industry should aim to develop trainers equipped with the skill-set to train dogs to perform any given task. This is already established in an overseas model developed by *Frontex*, a European Union (EU) agency, that has developed such a standardised dog handler and trainer program which has been adopted by the governments of 35 EU countries. The agency engaged with the international working dog sectors at the level of common needs for understanding how to teach a dog. The position was taken that a dog for narcotics detection (for example) "doesn't care" if it works for customs or for border protection, or for police or for any other body; the dog will still search for drugs and it will do it in the same way for customs, for border protection and so on.

Under this program, an individual's career begins as a dog handler and may make the transition to a dog trainer as their skills develop. This curriculum is used to develop the core competencies, skills and knowledge for training a dog handler. Dog handling and dog training are the core competences of the curriculum. Under the Frontex program, it is considered that building a positive relationship with the dog leads to high-level working dog performance and to long-term success of the working dog-handler team. A central outcome of such a teaching program would be the production of a dog trainer who is able to train a dog to do whatever the specific industry operational requirements may be. This is achieved by ensuring dog trainers understand the core principles of training and the skills to teach a dog to perform any given task. In this construct, dog training is considered to be a creative job, in which the individual is required to deal with training challenges and develop them into planned outcomes. The Frontex approach returns us to the commonality of the needs of the working dog industry – not only at the level of the Five Freedoms – but also at the level of the ability of working dog trainers to be able to train a dog to perform the required task. This goal will be achieved by developing a national curriculum with relevant animal behaviour and psychological principles related to the practical goal of modifying animal behaviour. Through this process, the tools used by working dog trainers will change from one context to another. The tool-kit will include reinforcers such as a whistle, voice, touch, and food items. When this approach is adopted, the use of force, anger and intimidation become unnecessary.

These authors argue that the way forward for the Australian Working Dog Industry is to expand the knowledge base from informal training through collaboration to develop a training program for working dog trainers that equips them with a skill-set based around the principles of training

described above. The desirability of a training program provided by RTOs delivering courses registered with *ASQA* is well recognised. A key component of this regulatory framework is the opportunity for existing expertise to be recognised through the modality of *Recognition of Prior Learning*.

2.2 Recognition of the need for an umbrella research body to coordinate research and development; manage and fund priority research and facilitate translation of results into practical outcomes for industry.

This recommendation from The Australian Working Dog Survey Report led to two options being posed to stakeholders as part of the Industry Consultation Survey.

Industry consultation survey results:

- 49.5% of respondents rated the recommendation for an umbrella research body to coordinate research and development, manage and fund priority research and facilitate translation of results into practical outcomes for industry development as important or very important to the welfare of dogs in their sector.
- 54% of respondents rated the importance of developing a peak industry body to facilitate communication with working dog stakeholders as important or very important to the welfare of dogs in their sector.

Due to the high level of cross-over, this section will discuss these two elements from the Industry Consultation Survey as one, by considering the benefits offered by an umbrella body to the Australian Working Dog Industry.

Sustainable quality assurance through continuous improvement

The Australian Working Dog Industry sectors are segregated both geographically (rural versus regional versus metropolitan) and economically (government and body corporate organisations such as Customs and Guide Dogs versus individual dog operators). This diversity accounts for an abiding lack of cohesion in its approach to topics of interest common to all stakeholders.

Consequently, a number of steps will be required to enable the industry to position itself to achieve sustainable quality assurance through continuous improvement. The first step will be to expand on the preliminary information collected for AAWS on working dog sourcing, training, assessment, housing and health of working dogs presented in the *Australian Working Dog Survey Report*. This process will address the question “What is common practice?” Once this knowledge is available, common practice can then be assessed in terms of good practice. Only then can comprehensive guidelines for *best practice* be developed.

We note that the establishment of an umbrella body would allow these steps to be coordinated. The areas of expertise required in an umbrella research body include: selection, breeding and rearing, housing, health care and husbandry, training of dogs and handlers, and valid assessments of working life endpoints. Participants in the AAWS process to-date have included animal behaviour, production and welfare scientists, animal welfare advocates, educators, ethicists, veterinarians, industry stakeholders, regulators, lay people and others. An umbrella body for the Australian Working Dog Industry should have a similar membership composition. The involvement of individuals and groups with diverse interests, having aligned, complementary or opposing views, is considered to be a most important part of this process (Mellor and Bayvel, 2008). Ongoing assessment of training and assessment, dog sourcing and selection,

identification and registration, housing and husbandry and dog demographic data will create benchmarks for available welfare indicators and permit future evaluation of changes over time. Information about what is common practice will assist with the development of a national strategy with priorities that reflect current issues and may also facilitate further international collaboration.

The internet has also provided a conduit for distributing access to research data and furthering research collaboration. It has also unleashed learning from the previous constraints of time and location that historically, has acted as an obstacle to learning by those in remote locations. An additional consideration is that much of the research literature can only be accessed by subscriptions to online journals and as such, this information is not available to the general public. One of the key advantages of an umbrella body would be to facilitate the transfer of relevant summaries of information that is currently only accessible to researchers to the wider Australian Working Dog Industry community. Additional learning opportunities will soon be available for those in remote locations by the rollout of the *National Broadband Network*. This technology will facilitate the use of e-learning modules and online video development tools for long distance learning.

The success of previous collaborations between Guide Dogs/Customs and research partners at The University of Melbourne highlights the pivotal role of industry-research collaboration in ensuring progress occurs. However, perhaps because there has been no nationally co-ordinated effort to build on this early success, the development of additional collaborations has been ad hoc. The most recent research-industry collaboration to have developed is between the University of Sydney, the *Working Kelpie Council of Australia*, *Meat & Livestock Australia* and the *Rural Industries Research and Development Corporation*. *This project* plans to investigate the genetic, behavioural and health attributes of Australian farm dogs.

A national database that stores objective data about common practices relating to working dogs in Australia is a key step in this process. Financial and in kind support from a number of sources e.g. institutions, governments and external funding sources will be required for the initiative of an umbrella body to succeed.

What does research offer to the Australian Working Dog Industry?

To better understand how research can contribute to the welfare of Australia's working dogs and productivity of the Australian Working Dog Industry, it is useful to revisit some of the areas of expertise and animal welfare importance to review the current state of research in those areas. This section provides an overview of some of the issues facing the Australian Working Dog Industry that could be addressed by an umbrella research body.

Training and assessment

Investigations of the association between training and assessment are emerging. *Meyer and Ladewig (2008)* assessed the effect of the duration of training, frequency and length of individual sessions and concluded that the optimal combination may vary with breed and training context. In a study of Belgian military working dogs, it was concluded that dog handler teams should train more regularly and adopt training systems that rely on the use of positive training methods, an increased training frequency, and improved education of the trainers in learning theory (*Haverbeke et al., 2008*). A survey of dog owners by *Hiby et al. (2004)* found that punishment by owners was associated with an increased incidence of problematic behaviours. Similarly, *Haverbeke et al. (2008)* found that the use of aversive training techniques was associated with lower performance scores in military dogs. As such, problematic behaviours that are caused by, or result in, a state of anxiety may be associated with compromised welfare.

The term behavioural wastage (*McGreevy and McLean, 2007*) has been used to describe the loss of animals from an industry for reasons related to training or instinct. There is a clear need

for the collection of baseline data on working dog performance outcomes to assist with calculating risk factors for behavioural wastage. At the same time, the development of technologies that measure interactions between trainers and their animals, such as those currently being used in equitation science to measure rein tension between horse and rider (*McGreevy, 2007*), is particularly interesting and encouraging. These may serve to overcome the current problems presented in *Section 1.4* that are associated with the widespread use of subjective terms (such as drive and willingness and instinct) in working dog assessment and training reports (*Murphy, 1998*).

The exposure of dogs to multiple personnel is of interest since it can have both positive and negative welfare outcomes (*Lefebvre et al., 2007; Haverbeke et al., 2008; Horvath et al. 2008*). A change in trainer may be a positive opportunity to cross-check progress and address training deficits. However, a negative outcome may be the increased chance of inconsistency or introduction of negative effects of severance of the human-animal bond (*O'Brien et al., 2008*). With the ongoing collection of meaningful data in mind, we can see considerable merit in standardised measures of human-dog interactions. In this context, it is worth considering how widely and effectively learning theory is applied in working dog training. As discussed in *Section 2.1*, a trainer with a sound theoretical education and ability to practice the principles of reinforcement may be of more benefit than an informally trained specialist who has worked with only one breed or even one select behavioural type within a breed. To this end, further investigation into the training and assessment methodology used throughout the various working dog sectors is merited.

Dogs: sourcing and selection

Please refer to *Section 2.3*.

Identification and registration of working dogs

The numbers of working dogs identified under the existing local government registration schemes could give an indication of the size of each sub-sector but such datasets may be flawed by several factors. Chiefly, across Australia, there are disparate requirements to identify and register working dogs. For example, microchipping of all dogs is mandatory in New South Wales and in Victoria, so dogs must be microchipped before they can be registered with the local council, which is mandatory. However, microchipping is not mandatory in the Northern Territory, Western Australia and most parts of Queensland. With a focus on registration, rather than identification, Australian state legislation again differs from state to state in the ways that it defines and regulates the registration of working dogs. Legislation in Victoria, South Australia, Queensland and Tasmania mandates that working dogs are required to be registered with the local council, whilst in the Northern Territory, and some parts of New South Wales, it is not required. The exemption for working dogs under the *NSW Companion Animals Act* applies when:

- The working dog resides on land defined and rates as farmland under the *Local Government Act 1993*, or
- The working dog is kept in the western Division of NSW, being not within a local government area.

In some local council areas (for example, Canberra, ACT and Logan City, QLD), no fee is charged for the registration of racing greyhounds and assistance dogs. In South Australia, the *Dog and Cat Management Act 1995* requires all dogs over the age of three months to be registered with local councils, and entitled councils to determine their own dog registration fee structure. However, the Act requires that guide, hearing and disability dogs be registered free of charge and there is a recommendation to local councils that a 75% rebate of the maximum registration fee is applied to working farm dogs and racing greyhounds. In addition, there is

specific legislation in South Australia covering accredited guide, hearing and disability dogs, all of which must be approved and accredited by the Dog and Cat Management Board.

A robust, uniform system for identifying individual dogs could help to track working dogs through the industry of origin and beyond. It is possible that a consistent program Australia-wide comprising waived fees, compulsory microchipping schemes and strong incentives for registration of all working and racing dogs would need to be implemented before the scale and economic value of the various industries can be accurately estimated and subsequently monitored for trends with confidence. In addition, the information recorded by most animal registries does not currently include any details about the dog's work or accreditation with any working dog group. It appears that existing local government programs could promote requisite working dog registration to facilitate working dog identification and accreditation. This could permit improved monitoring of the movement of dogs through different working dog programs. It would also allow dogs trained to a specific standard to receive national recognition of this accreditation through their permanent identification.

Husbandry: housing, handling, health care and transport

The types of shelter provided to working dogs are almost as varied as the contexts in which dogs work. Shelter can vary with time of day and the location of work. As opportunists, dogs may make the most of whatever comfort is available but some types of housing may be inadequate. Farm dogs may spend significant periods of time on the back of vehicles. When vehicles are moving, the risks of being dislodged can carry additional hazards but while in a working context (e.g., on their home property) working farm dogs in Australia are exempt from any requirement to be secured on the back of vehicles or provided with any shelter protection or a secure footing substrate. In addition, the legal requirements associated with dogs on moving vehicles on roads differ between states and territories (*RSPCA Australia*), adding further confusion to the issue. The legislation relevant to working dogs is state specific (refer *Appendix 2*). Although Codes of Practice for minimum levels of care relating to working dogs do exist (e.g. *Victorian Code of Practice for the Operation of Greyhound Establishments*), they are state-specific and in no case cover the welfare of all working dog industry sectors. In some Australian states and territories, neither working nor companion dogs are covered by Codes of Practice.

Whenever housing is considered, the associated needs for social and environmental enrichment deserve particular attention (*Hubrecht, 1993; Loveridge, 1998; Taylor and Mills, 2007; Timmins et al., 2007*). Some of Australia's working dog populations are housed within environments that are consistent with the design of many kennel facilities around the world, favouring ease of maintaining hygiene and housing maximum numbers. It has been established that such facilities do not meet the behavioural needs of domestic dogs (*Hubrecht, 1993*). This can result in dogs experiencing behavioural and physiological stress in response to being housed in a kennel facility (*Hennessy et al., 1997; Beerda et al., 1999a; Beerda et al., 1999b; Rooney et al., 2007*). Housing dogs individually fails to meet the dog's species-specific need for social contact. Environmental and social enrichment, such as access to toys and group housing, have been shown to reduce the stress responses of dogs housed in kennel facilities (*Hubrecht, 1993; Coppinger and Zuccotti, 1999; Wells and Hepper, 2000; Wells, 2004; Lefebvre et al., 2009*). Many working dogs in Australia are privately owned and are consequently housed on private properties and out of the public eye. At this stage, we can only speculate as to the wide range of housing conditions such dogs may experience. Liaisons developed through a centrally co-ordinated umbrella research body could address this shortfall.

The extent to which the welfare of working dogs compares with that of the wider companion dog population merits close scrutiny. Until conclusive data are available, the health and welfare of the different working dog sectors are not comparable. This should be noted in the context that farm

dogs or racing greyhounds appear to be perceived and reported as being more dispensable (*Russell, 2007; Cobb et al*, in preparation). However, given that 75% of Australian dogs are in single dog households and that reported levels of daily exercise are low (*Kobelt et al., 2003*), it would be wrong to assume that companion dogs have a better level of welfare. The results of the *Australian Working Dog Survey* reported that working dogs receive regular veterinary checks. However, a study conducted in Australia in 2001 (*Buckley, 2002*) found that more than two-thirds of the farmers surveyed would not spend more than AUD\$500 to save an injured working dog's life. Most farmers report they would need to employ an extra 1-3 people to complete the same work without the assistance of their working dog (*Buckley, 2002; Virgona*, unpublished). In general, veterinary expenses for working dogs are tax deductible under Australian taxation law but insurance premiums for working dogs are higher than for companion dogs. A survey conducted in 2008 by *Virgona* to establish the current status of welfare among dogs working on sheep farms in western Victoria found that 28% of surveyed farmers had lost their previous working dog due to a lethal accident in the course of their work.

There is a clear need for further research to better understand the acute and chronic effects of handling, transport, housing and environment as sources of distress, and the relation of these to the welfare and performance of working dogs. A range of factors such as odour presentation to pups *in utero*, early neurological stimulation, suitably enriched environment and early training/learning programs have been shown to affect the performance of working dogs. In light of the importance of these early influences on performance, an objective evaluation of puppy raising-type rearing programs may be indicated. Whilst it is common practice, recruiting members of the general public to rear potential working dogs rather than retaining them in a deprived kennel environment, it is not necessarily *best practice*. This, like many other working dog industry practices, requires objective assessment prior to being considered to be *best practice*. *Dr. Cynthia Otto of the Penn Vet Working Dog Centre* is currently conducting a research study of puppy-raising foster programs for working dogs. It would also be useful to investigate interactions between stress and performance in working dogs and it is encouraging that *research is currently underway* in Australia to investigate whether manipulation of housing environment (including opportunities for social and environmental enrichment) might in turn improve the welfare, performance and efficiency of working dog programs.

Dog demographics: Retirement and end-points

Data may be used to calculate the relative working longevity and wastage rates in working dog industries. The destination of dogs leaving each sub-sector is also of considerable interest. Those with inappropriate behaviour for one type of work may be transferred to a more appropriate working context. For example, the army may acquire a general-purpose police dog for guard patrol purposes; or a potential guide dog for the visually impaired assessed as too scent-distracted and excitable may be transferred to train in quarantine detection work.

Working dogs may be retired and kept within the same environment or transferred to a new environment as a pet. Nevertheless, it is acknowledged that some retired working dogs are considered unsuitable as pets and may consequently be euthanased. Methods of destruction are of concern from an animal welfare, public awareness (*Russell, 2007*) and industry risk management perspective. Greyhounds Victoria (the peak body for greyhound racing in the state of Victoria) has adopted the requirement of a veterinary euthanasia certificate for greyhounds as suggested by *Burghardt (2003)*. However, private sub-sectors such as farm and property protection guard dogs currently lack the capacity for such regulation or enforcement and exit data for dogs no longer able to work effectively in these sub-sectors are not documented. The reasons given for dogs leaving work should inform any strategy that seeks to prioritise the use of resources to make dog use more efficient. The *Australian Working Dog Survey Report* found that behaviour was the common reason why dogs in training did not go on to become a working dog.

Critical indicators of success in dog training and dog use include the proportion of trainee dogs reaching a working standard and longevity within the working role. Trends in these metrics could be calculated to monitor the effectiveness of long-term strategies designed to enhance productivity and welfare. Further investigation of this information would also help to grade the relative welfare impact of various training, health and management issues.

2.3 Development of task-specific working dog breeding programs to reduce behavioural wastage

Results from industry consultation survey:

- 67.1% of respondents rated the recommendation for development of task-specific working dog breeding programs to reduce behavioural wastage (the loss of animals from an industry for reasons related to training or an innate response) as important or very important to the welfare of dogs in their sector.

The organisation and philosophy of working dog programs vary greatly. Some groups source dogs from sophisticated breeding programs developed in conjunction with behavioural and quantitative genetics researchers (e.g. *Customs*, *Guide Dogs*) through to individual volunteer handlers who own and train dogs they may have bred or purchased.

The first guide dog sponsored by the Royal Guide Dogs Association of Australia (RGDAA) completed its training in 1952 and the organisation began a selective breeding program to produce its own dogs in 1964. Less than ten years later, RGDAA sought assistance from researchers at the University of Melbourne to review the breeding and rearing programs. Since this time, such collaborations have been few and far between - the Guide Dog-Melbourne University project occurring in the 1970's and the Customs-Melbourne University project occurring in the 1990's (*Champness, 1996*). The long-term benefits of these collaborations are clear: *Customs* report that the genetic material is in high demand from domestic and international working dog programs and *Guide Dogs Victoria* report that frozen semen is shared with other Guide Dog programs internationally. Many industry members, both individuals and groups, run their own breeding programs and there is enormous potential for industry benefit and development through sharing of knowledge, expertise and even genetic material.

Sourcing, breeding and selection of dogs – a research perspective

Working dog programs that have their own breeding program may be much more efficient (*Scott and Fuller, 1965*). Most research has been done in assessing the suitability of dogs for specific tasks (for a review of methods for assessing canine temperament, see *Taylor and Mills, 2006*). The subjectivity and consistency of so-called temperament tests in dogs have previously been criticised (*Beaudet et al., 1994*). For example, *Murphy (1995)* and *Fuchs et al. (2005)* emphasised that subjective assessment criteria increased the variability of results. Another problem is that response to assessors can be much less repeatable than response to environmental stimuli. *Netto and Planta (1997)* showed that responses might be context-specific rather than generalised, with dogs often responding with aggression to one stimulus but not others. *Taylor and Mills (2006)* outlined ways to design and conduct tests to standardise the reliability, validity and feasibility of temperament assessments.

Various external sources (e.g. shelters and donation of public pets) may be useful sources of working dogs that have behavioural traits unsuitable for companion homes (*McGreevy, 2007*), but some dogs offered for adoption from these sources may have learned to be fearful or evasive

(*Marston and Bennett, 2003*) and so may be more problematic to train than dogs recruited as pups. Similarly, reliably assessing the basic behaviour of dogs housed in shelters remains an ongoing challenge (*Taylor and Mills, 2006; Mornement et al., 2010*) and further research in this area is required.

Dogs show tremendous morphological variation between breeds and this is frequently accompanied by differences in behaviour, particularly in their reactivity (*Bradshaw et al., 1996*). Breed has also been found to influence several behavioural traits. For example, *Svartberg (2002)* found German shepherd dogs to be more bold than Belgian terriers, and *Guy et al. (2001)* found smaller breeds of dogs to be involved in more aggressive incidents than larger breeds. In addition, *Ennik et al. (2006)* found that German shepherds were less successful than Labrador retrievers or Golden retrievers as guide dogs. *Goodwin et al. (1997)* also found that the purpose for which dogs were bred significantly influenced their behaviour, possibly indicating the need for greater emphasis to be placed on task-specific breeding programs. As genetic technologies advance, the capacity to track the relatedness of dogs and for breeding predominantly from dogs with quantifiable behavioural traits and known parentage increase.

One of the greatest challenges facing working dog programs worldwide is to develop tests that can be conducted on young dogs to accurately predict the dog's ability to perform a specific task as an adult. From both the dog's (welfare) and the working program's perspective (economic), it is important to determine as early as possible which dogs are unlikely to succeed. Therefore, emphasis is also being placed on tools which may allow accurate early identification and dismissal of unsuitable dogs. Research groups have developed genetic and behavioural screening tests that may serve as measures of suitable performance or lack thereof. Behavioural screening tests for working dogs must minimally meet three quality requirements: standardisation, reliability, and validity of selection procedures. These assessments represent a standard that allows the ongoing collection of information to assess how consistent the results are, and whether similar information can be collected from other groups and then compared in a meaningful way between working dog groups. This skill-set is offered to the Australian Working Dog Industry by collaboration with research groups including applied animal behaviour scientists and quantitative geneticists.

In general terms, the available results indicate that working dog breeding programs should not breed from dogs showing behavioural traits associated with fear as this has been shown to be associated with under-performance in working dogs. Some degree of adult fearfulness can be predicted from behaviours displayed at 3 months of age.

Despite the fact that behavioural traits in dogs have been shown by a number of research groups to demonstrate only low to moderate degrees of heritability, highly successful partnerships have been formed between behavioural geneticists and working dog organisations e.g. Guide Dogs and Customs as *described earlier*. This indicates that whilst there is still a large body of work required to determine the nature of the testing processes required, selecting working dogs based on desired traits is an approach worth pursuing. In addition to being able to control the genetic background of the dog, working dog breeding programs also provide the opportunity for standardising the early learning experience and environment e.g. widely socialising pups from 5-6 weeks of age.

Working dog breeding programs also provide the opportunity to collect and store a large database of information on the dogs involved. The benefit of combining this information with data collected on the working performance of dogs originating from the breeding colony provides the opportunity for data to be collected from cradle to grave. Without the predictive value of using screening tests to assess inheritable traits cannot be fully assessed.

The primary goal of all working dog programs is to produce the required number of dogs that excel at performing a specific task with the longest working life possible. Working dog breeding programs aim to produce a higher proportion of dogs that excel on a specific task compared to dogs that can be sourced through other avenues. Comparison of outcomes even within one working dog program must be interpreted conservatively and, in some cases, with caution if differences between trainers, handlers and assessors are not quantified. Historically, the intuitive (subjective) observations of highly experienced individuals have been used to select both operational dogs and breeding stock. This approach has been addressed in a UK study (*Rooney et al. 2007*) in which subjective assessments by experienced working dog trainers were compared with an objective test developed by an applied animal behaviour scientist to assess whether there was agreement between the subjective and objective systems. The test used by the scientist provided more detailed information compared to the more traditional subjective methods, supporting the argument that quantitative measures of performance are superior to qualitative assessments. As discussed in *Section 1.4*, this study supports the conclusion that without the input of specialist consultants such as applied animal behaviour scientists and behavioural geneticists, subjective measures of working dog performance will compromise the progress of the Australian Working Dog Industry. It is proposed that the way forward is to combine existing working dog breeder and trainer expertise with that available from the research community to draw on the strengths that both have to offer; building a sustainable future for Australia's Working Dog Industry with improved canine welfare outcomes. External review of existing working dog breeding programs is required to ensure continuous quality improvement is maintained and that the standards maintained are in line with industry *best practice*. The development of such a strategy could be overseen by the Australian Working Dog Industry umbrella research group.

2.4 Consultation with the veterinary profession to develop strategies for facilitating information-flow to working dog trainers nationally

Results from industry consultation survey:

- 58.4% of respondents rated the recommendation for consultation with the veterinary profession to develop strategies for facilitating information-flow to working dog trainers nationally as important or very important the welfare of dogs in their sector.

This recommendation arose from the finding in the *Australian Working Dog Survey Report* that veterinary examination of working dogs occurred either annually or as required. This result highlighted the potential opportunity for utilising this point of contact with veterinarians as a conduit for the dissemination of up to date information relating to working dogs in metropolitan, regional and rural areas.

Australian State and Territory governments have the constitutional authority for the animal health system within their boundaries. These responsibilities require the maintenance of close links with livestock producers, private veterinarians, and others associated with livestock and livestock industries. Structures vary between States/Territories but the common theme is centrally based policy personnel with district veterinary officers (DVO's) located in and responsible for particular regions. In the context of this Plan, it is considered that the merit of this recommendation may lie in facilitating information flow to agricultural working dog groups. DVO's provide advice to livestock producers about the health and welfare of grazing animals. A key component of this advice relates to the health (body condition) of livestock. A body condition scoring system (1-5) is commonly used to make this assessment and most livestock producers would be familiar with its application. DVO's may well be able to extend the application of this body condition scoring system from livestock animals to working dogs by providing information sheets to farmers during their property visits. An example of a *body condition scoring sheet for dogs* is provided.

Other opportunities for the working dog industry may be to liaise with *the Australian Veterinary Association (AVA)*. The AVA currently runs *Pets and People Education Program (PetPep)*. Based on this existing framework for public education, the AVA may be in a position to assist with facilitating information-flow to working dog trainers nationally. Components of the AVA program include addressing issues relating to the welfare of animals. The existing *PetPep* program could be modified to provide a module specific for rural communities that considers the needs of working dogs.

In order to meet the extra-curricular requirements of the veterinary qualification, students are required to undertake work experience on farms. A web search found that some farmers already capitalise upon this liaison with veterinary faculties as a public relations exercise by promoting their involvement with veterinary student work experience. This raises another opportunity for information-flow between the veterinary profession and the working dog industry. For example, the veterinary students could receive prior training on conducting an informal audit of animal wellbeing as part of their assessment. This approach would also have the potential to raise the topic of animal welfare in discussions with the farmer. The RSPCA has indicated that they would consider including this concept as part of the voluntary accreditation with *RSPCA Approved Farming Scheme* (described earlier in *Section 1.4*).

Conclusions

The working dog is an undisputed icon of Australian rural life and working dogs have made a significant contribution to Australia's economy. In this Plan the preliminary findings of the *Australian Working Dog Survey Report* have been extended to develop an Action Plan that can be used to advance the canine welfare and productivity measures of the Australian Working Dog Industry.

The aims of the Australian Working Dog Industry should be to promote the value and sustainability of the industry and to assist caretakers to deliver the best working dog welfare and productivity outcomes possible. In order to achieve this, the industry should extend the benchmarking commenced by the AAWS Working Dog Survey Report within and between industry sectors and across international working dog programs.

The Australian Working Dog Industry should support the development of a national strategy to optimise the wellbeing of all working dogs. In so doing, the goal of enhancing its position as world leaders in working dog breeding programs, selection processes, training methodology and performance outcomes can be achieved. High standards of animal welfare underpin both industry productivity and sustainability. This Plan highlights the key role of an educational framework that focuses on developing a positive bond between dog-trainer and dog-handler partnerships.

What differs between working dog sectors is the task that the dogs are trained to perform. In this sense, the working dog industry sectors have much in common. In order to provide a broad level of support for all stakeholders, administration and communication systems should be used to unite both practitioners and researchers within the industry. This should be adopted in a manner that best meets the needs of members of the wider working dog community – rural, regional and metropolitan. Such an approach will best facilitate the flow of information between all interested parties.

Government and corporate funding bodies should be approached to ensure that the resources are available to assist the industry at large to adopt best practice principles. Sectoral groups should unite to lobby government and engage with corporate partners to assist with raising the industry profile, and in so doing, open up additional revenue streams to ensure the needs of industry stakeholders are met. This approach would ensure that research capabilities are developed and evidence-based best practice is utilised in the development of coach educators, dog trainers and dog handlers.

It is recognised that not all members of the working dog industry will be motivated to change their current practices solely to improve animal welfare standards. However, it would be cognisant for the industry at large to recognise that market expectations are moving toward higher standards of animal care and greater transparency of processes.

Industry-wide adoption of an ethos of continuous quality improvement, voluntary welfare accreditation and certified training qualifications will result in a degree of difference occurring between service providers – both within and between industry sectors. Market forces will influence the adoption of best practice by this industry.

The Australian Working Dog Industry should acknowledge the need to increase the understanding of factors affecting working dog welfare and in this Plan it is recommended that a multi-disciplinary research program is pursued to deliver the best welfare and productivity outcomes from cradle to grave.

The following goals have been identified for The Australian Working Dog:

Goal 1: *To engage all industry stakeholders in a collaborative partnership, ensuring the optimised performance, productivity and sustainable development of the Australian Working Dog Industry.*

Goal 2: *To promote an evidence-based best practice industry environment with an ethos of continuous quality improvement.*

Goal 3: *To facilitate open communication and knowledge sharing between all working dog stakeholders on a national scale.*

The Strategies and Targets described for the Australian Working Dog Industry to realise these goals are summarised in the Australian Working Dog Industry Action Plan that follows.

Australian Working Dog Industry Action Plan 2013-15

Purpose

To engage and unite the Australian Working Dog Industry to advance the welfare and productivity of Australia's iconic working dogs.

Goals

1. To engage all industry stakeholders in a collaborative partnership, ensuring the optimised performance, productivity and sustainable development of the Australian Working Dog Industry.

Targets

1.1 Formalise the identity of the Australian Working Dog Industry (AWDI)

1.2 Determine the economic value of Australia's working dogs

1.3 Seek expressions of interest for developing a virtual umbrella research body

1.4 Engage ongoing financial support for industry wide initiatives (e.g. website, umbrella research body)

2. To promote an evidence-based best practice industry environment with an ethos of continuous quality improvement.

2.1 Establish and define world-leading evidence-based best practice working dog breeding, rearing and selection programs

2.2 Establish and define world-leading evidence-based best practice working dog husbandry and housing guidelines

2.3 Establish and define world-leading evidence-based best practice working dog trainer education

2.4 Establish and define world-leading evidence-based best practice working dog handler education

2.5 Establish and define world-leading evidence-based best practice working dog coach educators

2.6 Establish and define world-leading evidence based best practice working dog training programs

2.7 Stakeholder groups to provide leadership and promote membership compliance with minimum standards and legislation

2.8 Stakeholder groups to promote member attendance at professional development conferences

3. To facilitate open communication and knowledge sharing between all working dog stakeholders on a national scale.

3.1 Develop a national curriculum for working dog trainers, handlers and coach educators

3.2 Resource and develop e-technology to facilitate knowledge sharing

3.3 Annual Working Dog Welfare and Performance Science conference to promote liaison within and between industry sectors

Australian Working Dog Industry Action Plan 2013-15

Targets

Strategies

1.1 Formalise the identity of the Australian Working Dog Industry (AWDI)	1.3 Seek expressions of interest for developing a virtual umbrella research body	1.1.1 Seek financial support from AAWS to investigate options for funding partnerships to facilitate AWDI development (Government; Industry bodies; Corporate) 2013	1.1.3 Seek financial support from AAWS to research the history and process of formation of similar industry bodies 2012	1.3.1 Seek financial support from AAWS to develop a focus group with industry stakeholders for discussion of umbrella research body 2012-2013	1.4.1 Investigate options for funding partnerships (Government; Industry groups; Corporate) - ongoing 2013-15
1.2 Determine the economic value of Australia's working dogs	1.4 Engage ongoing financial support for industry wide initiatives (e.g. website, research centre development)	1.1.2 Develop AWDI website/newsfeed/newsletter facilitating the involvement of remotely located stakeholders 2013 – 2014	1.2.1 Preliminary results available from RIRDC project 'Valuable behavioural phenotypes in Australian farm dogs' 2013	1.3.2 Nominations received from parties interested in forming a voluntary organisation representing the AWDI 2013	
2.1 Establish and define world-leading evidence-based best practice working dog breeding, rearing and selection programs	2.5 Establish and define world-leading evidence-based best practice working dog coach educators	2.1.1 AAWS working group to liaise with existing working dog breeding and selection program stakeholders to seek nominations for a special interest group to develop a Code of Practice for working dog breeding programs 2015	2.2.2 Develop self-assessment quality assurance health and welfare programs in conjunction with RSPCA Approved Farming Scheme and Australian University veterinary faculties 2013	2.4.1 AAWS working group to commence Stage 1 of the ASQA 'Get a Course Accredited' Guidelines for working dog handler education 2013-2014	2.8.1 AAWS working group to assist stakeholder groups to establish Terms of Reference for their organisation in line with exceeding minimum standards outlined in legislation and Codes of Practice 2015
2.2 Establish and define world-leading evidence-based best practice working dog husbandry and housing guidelines	2.6 Establish and define world-leading evidence based best practice working dog training programs	2.1.2 Special Interest Group (working dog breeding programs) to explore opportunities for global promotion of task-specific working dog breeding and selection programs to expand the export market for genetic material 2015	2.3.1 AAWS working group to investigate support offered by Australian Government Skills Connect to assist the working dog industry to formulate a strategy for competency-based progression 2013	2.5.1 AAWS working group to commence Stage 1 of the ASQA 'Get a Course Accredited' Guidelines for working dog coach educators 2013-2014	2.9.1 AWDI website to collect and store demographic data from conference delegates to track AWDI professional development by sector – collection on-site at conferences and professional seminars 2013
2.3 Establish and define world-leading evidence-based best practice working dog trainer education	2.7 Stakeholder groups to provide leadership and promote membership compliance with minimum standards and legislation	2.1.3 AAWS working group to liaise with existing working dog program stakeholders to seek nominations for a special interest group to review and assess puppy raising programs 2013-2014	2.3.2 AAWS working group to commence Stage 1 of the ASQA 'Get a Course Accredited' Guidelines for working dog trainer education 2013-2014	2.6.1 AAWS working group to commence Stage 1 of the ASQA 'Get a Course Accredited' Guidelines for evidence-based best practice working dog training; equipment and techniques 2013-2014	2.9.2 Allocate continuing education points for conference/seminar/workshop attendances to accrue credits for ongoing accreditation and registration ongoing 2014
2.4 Establish and define world-leading evidence-based best practice working dog handler education	2.8 Stakeholder groups to promote member attendance at professional development conferences	2.2.1 AAWS working group to form a consultancy group to review working dog husbandry and housing guidelines 2014	2.3.3 AAWS working group to approach RTO's for expressions of interest to develop Stages 2 and 3 of the ASQA 'Get a Course Accredited Guidelines' for a nationally accredited working dog trainers curriculum 2014-2015	2.7.1 Collect data on existing puppy raising programs – structure, content, success rates. AAWS working group to liaise with existing puppy raising programs to facilitate standardised collection of program performance 2014	
3.1 Develop a national curriculum for working dog trainers, handlers and coach educators	3.3 Annual Working Dog Welfare and Performance Science conference to promote liaison within and between industry sectors	3.1.1 Offer curriculum for working dog trainers, handlers and Coach Educators accredited with Australian Skills and Quality Assurance (ASQA) and delivered by registered training organizations 2015	3.1.4 AWDI website to include plain English summaries of relevant working dog research projects and results 2012 – 2015	3.1.7 AWDI website to provide online data collection of training aides used and advice on best practice equipment 2013	3.3.1 AAWS working group to seek seed funding to facilitate planning of inaugural Australian Working Dog Industry Conference 2013
3.2 Resource and develop e-technology to facilitate knowledge sharing		3.1.2 AWDI website to include regular updates on RIRDC project 'Valuable behavioural phenotypes in Australian farm dogs' project 'Valuable behavioural phenotypes in Australian farm dogs' 2012-2015	3.1.5 AWDI website to provide online self-assessment and self-audit information e.g. body condition score, housing and health-care regime 2014	3.2.1 AAWS working group to assist stakeholder groups to develop professional relationships with Australian Veterinary Association, Australian University veterinary faculties, RSPCA, quantitative geneticists and other potential collaborators 2013-2015	
		3.1.3 AWDI website to include links to State legislation, Codes of Practice and ongoing AAWS working dog research references 2012	3.1.6 Live online anonymous database for ongoing collection of information relating to working dog training programs 2014	3.2.2 AAWS working group to seek financial and in-kind support from professional groups 2013	

Appendices

Appendix 1

Australian Working Dog Action Plan – Industry Consultation Survey 2012.



Australian Working Dog Action Plan - Industry Consultation Survey

*** 1. Which sector of the working dog industry best describes the area you participate in:**

- Private Industry (farm, hunting, security/guard, detection)
- Government (Australian Customs & Border Protection Service, Australian Defence Forces, Australian Quarantine Inspection Service, Correctional Services, Police, Fire Brigade, Royal Australian Engineers)
- Assistance/Service (hearing, physical, guide/seeing eye, search and rescue, therapy, alert)
- Sport (Greyhound, Sheep trial, Cattle trial, Sled, Schutzhund)
- If other, please specify

*** 2. How do you rate the importance of the following areas to the welfare of dogs in your sector of the Australian working dog industry?**

	1 - Extremely Important	2 - Important	3 - Neutral - neither Important or Unimportant	4 - Unimportant	5 - Extremely Unimportant
Dog sourcing/breeding	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dog housing/facility management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dog health care	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dog training techniques	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dog trainer/handler education	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

*** 3. Please rank the following from least to most important to improve the welfare of dogs within your sector of the Australian working dog industry.**

The item you rank 5 is the area you believe has the lowest potential to improve the welfare of dogs in your area through change. The lowest rank you apply (ie. that you rank 1) indicates that this item has the highest capacity to result in improved welfare of working dogs in your area.

Rank the following items using numbers from 1 to 5.

Dog sourcing/breeding _____

Dog housing/facility management _____

Dog health care _____

Dog training techniques _____

Dog trainer/handler education _____

* 4. How do you rate the importance of the following recommendations from the [Australian Working Dog Survey Report](#) to the welfare of dogs in your sector of the Australian working dog industry?

	1 - Extremely Important	2 - Important	3 - Neutral - neither Important or Unimportant	4 - Unimportant	5 - Extremely Unimportant
Development of a national education and accreditation program for working dog trainers.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Development of task-specific working dog breeding programs to reduce behavioural wastage (the loss of animals from an industry for reasons related to training or an innate response).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Consultation with the veterinary profession to develop strategies for facilitating information-flow to working dog trainers nationally.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The need for an umbrella research body to coordinate research and development; manage and fund priority research and facilitate translation of results into practical outcomes for industry development.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

- * 5. Please rank the following recommendations from the [Australian Working Dog Survey Report](#) from least to most important to improve the welfare of dogs within your sector of the Australian working dog industry.

The item you rank 4 is the area you believe has the lowest potential to improve the welfare of dogs in your area through change. The highest rank you apply (ie. that you rank 1) indicates that this item has the highest capacity to result in improved welfare of working dogs in your area.

Rank the following items using numbers from 1 to 4.

Development of a national education and accreditation program for working dog trainers. _____

Development of task-specific working dog breeding programs to reduce behavioural wastage (the loss of animals from an industry for reasons related to training or an innate response). _____

Consultation with the veterinary profession to develop strategies for facilitating information-flow to working dog trainers nationally. _____

The need for an umbrella research body to coordinate research and development;

manage and fund priority research and facilitate translation of results into practical outcomes for industry development. _____

- * 6. How do you rate the importance of developing a peak industry body to facilitate communication with working dog stakeholders?

- 1 - Extremely Important
- 2 - Important
- 3 - Neutral - neither Important or Unimportant
- 4 - Unimportant
- 5 - Extremely Unimportant

Appendix 2

The welfare of working dogs is regulated by State government legislation.

Name of Act	Jurisdiction
<i>Prevention of Cruelty to Animals Act 1979</i> http://www.austlii.edu.au/au/legis/nsw/consol_act/poctaa1979360/	NSW
<i>Prevention of Cruelty to Animals Act 1985</i> http://www.legislation.sa.gov.au/LZ/C/A/ANIMAL%20WELFARE%20ACT%201985/2000.01.31_(1994.12.01)/1985.106.PDF	SA
<i>Prevention of Cruelty to Animals Act 1986</i> http://www.austlii.edu.au/au/legis/vic/consol_act/poctaa1986360/	VIC
<i>Animal Welfare Act 1992</i> http://www.legislation.act.gov.au/a/1992-45/default.asp	ACT
<i>Animal Welfare Act 1993</i> http://www.austlii.edu.au/au/legis/tas/consol_act/awa1993128/	TAS
<i>Animal Care and Protection Act 2001</i> http://www.legislation.qld.gov.au/LEGISLTN/CURRENT/A/AnimalCaPrA01.pdf	QLD
<i>Animal Welfare Act 2002</i> http://www.austlii.edu.au/au/legis/wa/consol_act/awa2002128/	WA
<i>Animal Welfare Act 2007</i> http://www.austlii.edu.au/au/legis/nt/consol_act/awa128/notes.html	NT