

ANIMAL CARE AND MANAGEMENT INDUSTRY SECTOR

IRC Skills Forecast and Proposed Schedule of Work

2018–2021

Prepared on behalf of the Animal Care and Management Industry Reference Committee for the Australian Industry Skills Committee (AISC)

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Purpose

This *IRC Skills Forecast* represents the latest industry intelligence and resulting schedule of work of the Animal Care and Management Industry Reference Committee (IRC). It was developed through research of national and industry data sources and ongoing input from IRC members and key stakeholders. The report is designed to provide industry intelligence to support the Australian Industry Skills Committee's (AISC) four-year rolling National Schedule of training product development and review work.

This industry intelligence covers the following sections:

Sector Overview – examining the depth and breadth of the industry and identifying the macro environment that currently challenges and/or provides opportunities for the industry

Employment – reviewing the employment projections by the Department of Employment and outlining the current workforce profile and supply for the industry

Skills Outlook – identifying the key priority skills for the industry and how they can benefit from improvement or development of national skill standards

Training Product Review Work Plan – establishing the scope and timeframe of proposed training package development in line with industry priority skills

The information within this *IRC Skills Forecast* is based on data obtained from various sources, with a key source being publicly available information, including that published by the Australian Bureau of Statistics. We are aware of the limitations of this data and, as such, this represents a starting point for feedback on industry structures and issue content. We welcome comments for inclusion to ensure the most up-to-date data and industry viewpoints are presented.

A. ADMINISTRATIVE INFORMATION

Name of Applicable Industry Reference Committee (IRC)	Animal Care and Management Industry Reference Committee
Name of Applicable Skills Service Organisation (SSO)	Skills Impact Ltd

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Executive Summary

This report provides an overview of workforce development and skills needs for the Australian animal care and management industry sector. The report was commissioned to support the Australian Industry Skills Committee (AISC) in developing the four-year rolling National Schedule of training product development and review work. The report is structured, as per the AISC template, in four main sections as follows: sector overview, employment, skills outlook, and training product review plan. Methods of analysis include research of published national and industry data sources and input from Industry Reference Committee (IRC) members and key stakeholders.

The report draws attention to the fact that rising global demand for Australian animal products with embedded animal welfare and on-farm biosecurity characteristics provides this industry with the potential for growth and new business opportunities. Further, Australia has the most sustainable zoos, aquariums, wildlife parks and sanctuaries, with a significant role as a preferred tourist attraction. The opportunities for the animal care and management industry are also shaped by a number of current government policies that support industry participation in animal disease outbreaks and combat of invasive species. Beyond that, domestic population growth and rising disposable income leads to a further growth in Australian households owning pets and livestock (Australia already has one of the highest rates of pet ownership in the world) and demand for veterinary and associated value-added services.

Further, the report describes the industry workforce. Consistent with many other industries, horse breeding and hunting sectors are ageing – retirement ages are being reached in higher numbers. This workforce trend creates significant challenges for employers – particularly in respect to their ability to attract people to the industry and train them.

Importantly, the report shows that employers will increasingly seek higher level and value-added skills to support higher targets in relation to a safe, collaborative and customer-focused culture, innovation, and automation/digitisation of some work activities in animal care workplaces and jobs.

Government bodies and businesses respond to challenges and opportunities with the following:

- a greater focus on biosecurity involving stringent disease surveillance for suspect notifiable diseases, workplace health and safety and infection control measures, and application of technology for real-time surveillance of pest invasion
- diagnostics and management of wildlife, livestock farms and pets
- increased value-added services for animals that complement veterinary services through increased levels of training in physiotherapy, acupuncture, rehabilitation and others
- a greater focus on improving efficiency, revenue streams and customer retention/loyalty in the pet industry and zoos, wildlife parks, sanctuaries and aquariums.

The workforce needs to improve the job-specific skills to support these higher efficiency standards, innovations and customer services.

Summary of Key Points in Each Section

Sector Overview

- The animal care and management industry can be described as having five sectors: veterinary services, animal breeding services, pet and companion animal services, captive wildlife operations, and hunting and trapping.
- The industry includes 3,145 veterinary facilities, a large number of registered animal breeders, 4,000 pet grooming businesses, many other specialist businesses providing pet care services, up to 100 wildlife operations including zoos, wildlife parks and aquariums, 587 hunting and trapping business operators, and 300,000 recreational hunters.
- The veterinary sector provides direct employment to more than 16,857 people, with 12,746 registered veterinarians working for government agencies, laboratories and universities, or providing specialised services as private practitioners or in other organisations.
- The wildlife operations sector employs up to 3,000 people.
- The majority of livestock breeding enterprises and hunting and trapping business operators are small-scale non-employing operations.
- The industry is represented by about 38 peak organisations at a national level, including industry sub-sector associations, animal health and welfare associations, and professional associations.
- Key regulations for the industry include or are related to the *Biosecurity Act 2015* and the *Environment Protection and Biodiversity Conservation (EPBC) Act 1999*, state-based animal welfare legislations, veterinary services regulations, pet and companion animal regulations, captive wildlife regulations, hunting and trapping regulations and live animal export legislation.
- The key regulated occupation is veterinarians, who must register with the state or territory veterinary registration board. The registration becomes their licence to practice as a veterinarian.¹
- Key macro forces that currently challenge and provide opportunities for the industry sectors include:
 - national surveillance and diagnostic programs of the Australian Government and the state governments to address Australia's broad range of biosecurity issues, including activities to investigate the presence or prevalence of pest or diseases in animal populations
 - outbreaks of Q fever and Hendra virus and related challenges for the veterinary, horse and meat-related industries to manage risks related to disease identification and infestation
 - recurrent bushfires and flood events in urban and rural areas that require immediate rescue efforts of state-based veterinary emergency management agencies, RSPCA and animal rescue organisations
 - availability of new technologies, advanced medical procedures (ultrasounds, laparoscopy, MRI, microfracture detection) and newly developed pharmaceuticals in the veterinary sector
 - technology advancements, including remote sensors, drones, new generation satellite imagery technologies, wearable and mobile technologies, and real-time apps, which allow for effective surveillance of pest invasion, diagnostics and management of wildlife, animal tracking and monitoring in livestock farming,² pet management, and fire detection, among

¹ Regulated occupations have legal (or industry) requirements or restrictions to perform the work. Regulated occupations require a license from, or registration by, a professional association or occupational licensing authority.

² Fitzgerald, D., 2017, 'Northern Territory cattle station adopts drone to muster cattle, check fires', *ABC News*, <<http://www.abc.net.au/news/2017-01-12/northern-territory-drone-muster-birrindudu-station/8177946>>

many other applications.

Employment

- No employment growth is anticipated for the veterinary and hunting sectors in the coming years. However, the Australian Veterinary Association has a Workforce Study that anticipates oversupply due to the number of graduates.
- The veterinary sector shows a younger workforce profile when compared to many other industry sectors.
- A significant number of the workforce occupies roles specific to the industry, including veterinary nurses and veterinarians, animal attendants and trainers, farriers, equine dental service providers, pet groomers and livestock farmers and farm workers. A significant workforce is also employed to undertake more general roles such as clerical and administrative work. The sector also employs people for a range of other jobs, such as life scientists and sales assistants.

Skills Outlook

Priority skills in the animal care and management sector over the next four years, 2018–2021, are summarised in the following table:

PRIORITY SKILL	DRIVERS	TRAINING PACKAGE SOLUTION ³
Current Projects		
Industry-Specific Skills		
Work Safely Around Animals (Infection Control)	Veterinarians, veterinary nurses, farmers, livestock handlers and abattoir workers are most at risk of contracting diseases, which are carried by livestock, domestic animals and wild animals. Recent outbreaks of Q fever and Hendra virus have put industry workers at risk.	Review and improvement of five units at AQF levels 2, 3 and 4 in work health and safety around animals. Development of two to five new units or skill sets at AQF levels 2, 3 and 4.
Skills Update in Farrier's Qualification	The Master Farriers' Association have indicated that job roles are not aligned with the current industry training package qualifications in farriery.	Review and improvement of 12 units at AQF level 3 in farriery. Development of at least five new units at AQF level 3.

³ A full list of relevant qualifications and units of competencies is provided in the IRC Training Product Review Plan 2018–2021 at the end of this report.

PRIORITY SKILL	DRIVERS	TRAINING PACKAGE SOLUTION ³
Proposed Schedule of Work 2018–2021		
<p>Animal Care Skill Sets</p>	<p>Animal welfare is of high priority to the general public. Improving how animals are treated in captivity can improve the life of the animal, improve breeding programs and ensure animals' safety. There are also financial and personal costs to be calculated.</p> <p>Recently, 16 polo horses died while being transported via ship to Melbourne. The cause of death is still unknown.</p> <p>Animal conditioning can assist animal keepers in ensuring the highest levels of animal welfare. The animal will feel secure in their surroundings and with the keepers engaged to care for them.</p> <p>Animal first aid will assist both keepers and pet owners to deliver immediate care to animals until they can be treated and cared for by a veterinarian.</p> <p>Horse branding is a standard procedure for permanent identification marking of horses, while microchipping is the more humane method. Freeze or fire branding are two practices that can occur, but because these cause pain to the animal and carry the chance of infection, they must be undertaken with the highest possible standards.</p>	<p>Development of skill sets to be used to enhance current qualifications or as entry into qualifications.</p> <p>Skill set focus :</p> <ul style="list-style-type: none"> • Animal Conditioning • Animal First Aid • Horse Branding • Horse Transport • Horse Identification • Rural and Remote Animal Health worker • Animal Microchipping. • Equine Vet Nursing

<p>Full Review of Animal Technology Qualifications</p>	<p>Feedback has been received from the Australian and New Zealand Laboratory Animal Association (ANZLAA), the peak body for the Animal Technology industry, that the current units of competency are not fit for purpose.</p> <p>The content of the units is not suitable for quality training; and the units are not ethically suitable, as they require too many animals to be euthanised during the undertaking of the units.</p> <p>Full review of the qualifications is needed to ensure that quality training does not impose unethical practice.</p>	<ul style="list-style-type: none"> • Review the units contained in 2 Animal Technology qualifications • Development of units for 2 new skill sets: <ul style="list-style-type: none"> ○ skill set for working on an ethics committee ○ skill set for researchers undertaking surgery • Development of unit/s for surgical nursing of research animals • Embed/improve containment and exclusion in relevant units.
<p>Full Review of Pet Styling and Grooming Qualifications</p>	<p>Concern has been expressed through industry feedback about the level of inconsistency in pet grooming training. As there is no legislative requirement for a pet groomer to undertake any form of training, many are choosing to undertake lower AQF level skills or forgo training altogether.</p> <p>To improve the industry skill level, higher and more consistent standards should be developed to ensure the care of animals.</p>	<ul style="list-style-type: none"> • Removal of the Certificate III in Pet Grooming, with the skills embedded into the Certificate IV in Pet Styling. Certificate IV in Pet Styling would then be the entry level for the industry • Development of skill set/s for higher level skills to build on qualification; e.g. skills in breed-specific/competition grooming • New units for basic skills in clipping and scissoring prior to using them on live animals • Full review of all relevant units.
<p>Equine Dental Research Project</p>	<p>Prior to any Training Package development being undertaken regarding equine dental, research needs to be undertaken to determine the parameters that an equine dental service provider's scope of practice is limited to.</p>	<p>Research report clearly defining:</p> <ul style="list-style-type: none"> • The Acts of veterinary science in each state and territory • Limits of the scope of practice for equine dental service providers • International standards that equine dental is practiced

		<ul style="list-style-type: none"> The demand for equine dental service providers to deliver services at a higher AQF alignment than the current certificate 4 levels.
Skills in Using Animals for Therapeutic Interactions for Humans	<p>Animals are currently used in an array of therapeutic areas for people living with different conditions. These include people living with:</p> <ul style="list-style-type: none"> PTSD autism dementia drug addiction diabetes epilepsy. <p>Animals can be used to alert a person to a coming attack, assist in reducing the severity of an attack or be used as a resolution tool.</p>	<p>Development of qualification in using animals in therapeutic situations, and skills to train the animal to assist in the therapy.</p>
Higher Level AQF Skills for Captive Animals	<p>Currently the highest level of vocational education and training in captive animals is Certificate IV. There is a skill gap between the Certificate IV and the Bachelor Degree.</p> <p>As breeding programs nationally (and internationally) are looking to ensure that fewer species of animals become extinct, greater skills are needed in animal conditioning so that stress levels of animals are in the range that is conducive to optimal breeding.</p>	<p>Development of Diploma of Captive Animals and relevant units.</p>

B. SECTOR OVERVIEW

Sector Description

Australia's animal health system includes all organisations, government agencies, commercial companies, universities and individuals that are involved in animal health and the livestock production chain.⁴ To provide a structure, this report considers the animal care and management industry sector as integrating all businesses that operate in the following sub-sectors:

- **veterinary services**, including equine, cattle and other livestock veterinary practices, as well as companion animal veterinary practices
- **animal breeding services**, including livestock breeding, horse breeding, companion animal breeding and conservation breeding
- **pet and companion animal services**, including training, boarding and grooming of pets and companion animals
- **animal technology services** essential for laboratory animal facility management, specialist breeding services, animal husbandry and technical procedures
- **captive wildlife operations**, including zoos, wildlife parks, aquariums, animal circuses and other mobile animal displays
- **hunting and trapping**, including hunting and trapping businesses and recreational hunters
- **wildlife care and rehabilitation**.

These sectors are derived through the sectors defined by ANZSIC codes. A number of different services are not clearly defined by these codes, such as equine dental services and farrier services. This means ABS does not collect specific data on areas outside of the ANZSIC definitions. Based on ABS statistics, this sector included 3,145 veterinary facilities in 2015.⁵ The veterinary sector provides direct employment to more than 16,857 people.⁶ Estimates also show there are 12,746 registered veterinarians in Australia, working for government agencies, laboratories and universities, or providing specialised services as private practitioners or in other organisations.⁷

The Australian livestock breeding community is large, comprising 44 cattle breed societies and a substantial number of registered cattle breeders;⁸ around 600 registered sheep breeders producing 22 different sheep breeds;⁹ other livestock breeding enterprises; and 3,483 horse breeders producing Thoroughbred horses and other horse breeds for racing and a variety of other activities.¹⁰

The sector also includes about 4,000 pet grooming businesses¹¹ and many other specialist businesses providing pet care services; up to 100 wildlife operations, which include zoos, wildlife parks and aquariums¹² and employ up to 3,000 people;¹³ 587 hunting and trapping business operators, the

⁴ Animal Health Australia, 2016, 'Animal Health in Australia 2015', Canberra, Australia, <<https://www.animalhealthaustralia.com.au/our-publications/animal-health-in-australia-report>>

⁵ ABS, 2016, 'Counts of Australian businesses, including entries and exits, June 2011 to 2015', Cat No 8165.0

⁶ ABS, 2011, '2011 Census of Population and Housing'

⁷ Animal Health Australia, 2016, 'Animal Health in Australia 2015', Canberra, Australia, <<https://www.animalhealthaustralia.com.au/our-publications/animal-health-in-australia-report>>

⁸ Australian Registered Cattle Breeders' Association, 2012, 'Australian Beef Cattle Registrations', <<http://arcba.une.edu.au/ARCBA2012RegistrationReportRev.pdf>>

⁹ Australian Stud Sheep Breeders Association Limited, 2015, 'Australian Flock Register Volume 107 – 2015', <http://www.assba.com.au/edit/Flock_Books/2015%20ASSBA%20Flock%20Book.pdf?5-10-2015%202:35:53%20PM>

¹⁰ ABS, 2016, 'Counts of Australian businesses, including entries and exits, June 2011 to 2015', Cat No 8165.0

¹¹ Pets Australia, 2017, 'So You Want To Be A Pet or Dog Groomer?!' <<http://petsaustralia.org/pet-jobs-and-pet-businesses/so-you-want-to-be-a-pet-or-dog-groomer>>

¹² ABS, 2016, 'Counts of Australian businesses, including entries and exits, June 2011 to 2015', Cat No 8165.0

¹³ ABS, 2011, '2011 Census of Population and Housing'

majority of which are small-scale non-employed operations;¹⁴ and around 300,000 recreational hunters.¹⁵

Based on industry analysis estimates, the animal care and management sector contribution to the Australian economy includes:

- industry value added (IVA) of the veterinary sector, which increased by 2.5 per cent to \$1.7 billion between 2013–14 and 2014–15; and a total sales turnover, which increased by 1.8 per cent to \$2.5 billion during the same period¹⁶
- total sales turnover of the zoological sector, which totaled \$788 million in 2015¹⁷ (this also includes botanical gardens operations)
- companion animal services, which contribute \$8.0 billion annually to the Australian economy.¹⁸ This value includes the trade in companion animals, pet food, accessories, veterinary services and a range of other pet care services
- recreational hunting, which contributes \$1 billion annually to the Australian economy.¹⁹

The livestock breeding sector generates additional value-added income for the Australian economy through the trade in livestock animals and horses.

Relevant Training Package Qualifications

The animal care and management sector is covered by the *ACM10 Animal Care and Management Training Package*. ACM10 is comprised of 19 qualifications, 6 skill sets, 158 native units of competency and 68 imported units. This training package has been superseded by ACM Training Package, except for the qualifications and units related to Veterinary Nursing. The ACM Training Package comprises 20 qualifications, 8 skill sets and 189 native units of competency.

ACM10 QUALIFICATIONS

Qualification Level: Certificate IV

Certificate IV in Veterinary Nursing

Qualification Level: Diploma

Diploma of Veterinary Nursing (Surgical)

Diploma of Veterinary Nursing (Dental)

Diploma of Veterinary Nursing (Emergency and Critical Care)

Diploma of Veterinary Nursing (General Practice)

¹⁴ ABS, 2016, 'Counts of Australian businesses, including entries and exits, June 2011 to 2015', Cat No 8165.0

¹⁵ Finch N., Murray P., Hoy J., and Baxter G., 2014, 'Expenditure and motivation of Australian recreational hunters', *Wildlife Research*, 41(1) 76–83

¹⁶ Professionals Australia, 2015, 'Informers: Veterinary Services', <http://www.professionalsaustralia.org.au/wp-content/uploads/2015/08/VET_INFORMER_v1.pdf>

¹⁷ IBISWorld, 2015, 'Zoological and Botanical Gardens in Australia'

¹⁸ Animal Health Alliance, 2013, 'Pet Ownership in Australia', <<http://animalmedicinesaustralia.org.au/wp-content/uploads/2014/08/Pet-Ownership-in-Australia-2013-Summary-ONLINE-VER.pdf>>

¹⁹ Finch N., Murray P., Hoy J., and Baxter G., 2014, 'Expenditure and motivation of Australian recreational hunters', *Wildlife Research*, 41(1) 76–83

ACM QUALIFICATIONS

Qualification Level: Certificate I

Certificate I in Animal Studies

Qualification Level: Certificate II

Certificate II in Animal Studies

Certificate II in Horse Care

Qualification Level: Certificate III

Certificate III in Companion Animal Services

Certificate III in Captive Animals

Certificate III in Pet Grooming

Certificate III in Animal Technology

Certificate III in Farriery

Certificate III in Performance Horse

Certificate III in Animal Studies

Certificate III in Horse Breeding

Qualification Level: Certificate IV

Certificate IV in Companion Animal Services

Certificate IV in Pet Styling

Certificate IV in Captive Animals

Certificate IV in Equine Dentistry

Certificate IV in Horse Breeding

Certificate IV in Animal Control and Regulation

Qualification Level: Diploma

Diploma of Horse Stud Management

Diploma of Animal Technology

Diploma of Performance Horse Management

Sector Analysis

Sub-Sector Description and Analysis of Businesses Involved

SUB-SECTOR NAME	VETERINARY SERVICES
SCOPE OF WORK	<p>Businesses in this sector include:</p> <ul style="list-style-type: none"> • Private veterinary services provided in rural and urban communities, including a range of services to treat companion animals, farm animals and horses. Examples of species-specific services include cattle vets, sheep vets, pig vets, poultry vets, equine vets and equine dental veterinarians. Urban areas mostly involve the treatment of companion animals, and there is an increase in specialist services, emergency and critical care and adjuvant services such as hydrotherapy/physiotherapy. • Australian Government-run veterinary services, which undertake disease surveillance, providing an important reserve for the state and territory governments in the event of a major emergency animal disease (EAD) outbreak.
COMPANIES	<p>The Australian Government is the largest employer of veterinarians, employing 618 registered veterinarians.²⁰ In addition, in 2016, there were 3,179 practices operating in the veterinary services sector in Australia, 33 per cent of which were non-employing.²¹ A small number of medium-size businesses (employing between 20 and 200 people) operate through networks of veterinary practices established in different geographical locations. A few businesses are vertically integrated, operating into the specialty pet-care retailer sector.</p> <p>Major companies:</p> <ul style="list-style-type: none"> • Greencross Limited • National Veterinary Care • Best Friends Stores Pty Ltd • RSPCA Australia • Vetfriends Animal Hospitals • Vetwest Animal Hospitals • Healthscope Ltd • IDEXX Laboratories Pty Ltd (subsidiary of US-based IDEXX Laboratories Inc).
LOCATION	<p>Veterinary practices are generally located in capital cities to service pet owners, and country areas where there is a concentration of livestock farming, horses and/or dog racing activity. The largest number of private veterinary practices are in New South Wales, Victoria and Queensland.</p>

²⁰ Animal Health Australia, 2016, Animal Health in Australia 2015, Canberra, Australia, <<https://www.animalhealthaustralia.com.au/our-publications/animal-health-in-australia-report>>

²¹ ABS, 2017, 'Counts of Australian Businesses, including Entries and Exits, Jun 2012 to Jun 2016', <<http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/8165.0Jun%202012%20to%20Jun%202016?OpenDocument>>

AUTOMATION AND DIGITISATION

The veterinary sector uses different advanced technologies and processes to undertake routine laboratory and clinical support procedures for veterinary radiology, anaesthesia, surgery, pathology, clinical pathology, nutrition and veterinary therapeutics.

In some rural locations, vets provide service via online technology and fly-in-fly-out services.

The sector also involves operation of various animal health surveillance databases maintained by the Australian Veterinary Practitioner Surveillance Network (AVPSN), the National Significant Disease Investigation Program (NSDIP) and the National Transmissible Spongiform Encephalopathies Surveillance Program (NTSESP).

SUB-SECTOR NAME

ANIMAL BREEDING SERVICES

SCOPE OF WORK

The sector comprises businesses involved in animal breeding and genetics, including gene testing, artificial insemination and semen sales. Breeding services are provided in the following sectors:

- livestock breeding, which includes organisations engaged in the artificial insemination of cattle and other livestock for the productivity, sustainability and profitability of livestock enterprises
- horse breeding/farming, which includes businesses engaged in producing Thoroughbred horses and other horse breeds for racing and a variety of sport, leisure or recreation activities. Businesses also undertake horse farming and agistment operations. Thoroughbred horses are sold to trainers for the horse racing sector, while other breeds are sold to the public for recreational and other purposes
- pet breeding, which includes pet breeding establishments
- conservation breeding, which is a central element of zoos through the role these play in biodiversity conservation.

COMPANIES

In 2012, there were 44 cattle breed societies (covering beef and dairy) in Australia representing all registered cattle breeders.²² Similarly, approximately 600 sheep breeders were registered with the Australian Stud Sheep Breeders Association in 2015.²³

In addition, there were 3,459 horse farming enterprises in Australia in 2016, the majority of which were small-scale non-employing operators.²⁴ Only a small number of enterprises employ people to support horse farming operations.

Major horse breeding enterprises:²⁵

- Darley Australia Pty Ltd (foreign ownership) (VIC)

²² Australian Registered Cattle Breeders' Association, 2012, 'Australian Beef Cattle Registrations', <<http://arcba.une.edu.au/ARCBA2012RegistrationReportRev.pdf>>

²³ Australian Stud Sheep Breeders Association Limited, 2015, 'Australian Flock Register Volume 107 – 2015', <http://www.assba.com.au/edit/Flock_Books/2015%20ASSBA%20Flock%20Book.pdf?5-10-2015%202:35:53%20PM>

²⁴ ABS, 2017, 'Counts of Australian Businesses, including Entries and Exits, Jun 2012 to Jun 2016'

²⁵ Enterprises are listed according to market share or significance in the sector.

- Arrowfield Group (NSW)
- Coolmore Australia (subsidiary of Irish-based company) (NSW)
- Vinery Stud (NSW)
- Chatswood (VIC)
- Glenlogan Park (NSW)
- Oaklands (NSW)
- Lyndhurst (NSW)
- Raheen (QLD)
- Willowbend (NSW).

The sector also integrates a substantial number of pet breeding establishments, which can be smaller scale breeders and large commercial breeders.

Breeding programs are also undertaken by most Australian zoos and wildlife parks for the conservation of endangered animals.

GEOGRAPHIC LOCATION

Livestock breeding enterprises are mainly located in regions with higher concentration of livestock farming activity, predominantly in Queensland, New South Wales, Victoria, Western Australia and South Australia.

Although horse farming activity exists in all the states, New South Wales has the largest number of horse farming enterprises. Many of these enterprises are in the Upper Hunter region, known for the best breeding stocks, particularly thoroughbred stallions. Victoria and Queensland also have large numbers of horse farming operations.

Pet breeding establishments are concentrated in the urban areas of large cities across Australia.

AUTOMATION AND DIGITISATION

No automation and digitisation of note.

SUB-SECTOR NAME	PET AND COMPANION ANIMAL SERVICES
SCOPE OF WORK	The sector comprises businesses engaged in providing various services to pet owners, including clipping and grooming, boarding and minding, pet insurance, training and behaviour therapy, transport and walking services. The sector also includes animal shelter establishments that take in and care for lost, injured, stray, unwanted or un-owned animals.
COMPANIES	<p>It is estimated that there are around 4,000 pet grooming businesses in Australia,²⁶ and many other small-scale and larger-size businesses such as training establishments and boarding establishments providing specialist pet care services. Pet insurance services are provided by large general insurance companies.</p> <p>Shelters are most commonly owned and managed by animal welfare organisations such as the RSPCA, Cat Protection Society, The Lost Dogs' Home, Lort Smith Animal Hospital, and Animal Aid Victoria</p>
GEOGRAPHIC LOCATION	Pet care businesses are generally located in capital cities and urban areas, being often present in specialised stores such as pet shops and superstores, large shopping centres, or veterinary centres. Pet boarding establishments are located particularly within reach of major airports.
AUTOMATION AND DIGITISATION	No automation and digitisation of note.

SUB-SECTOR NAME	ANIMAL TECHNOLOGY
SCOPE OF WORK	Animal technology is a specialist profession responsible for the care and welfare of laboratory animals. Animal technology helps develop treatments for diseases and new methods of diagnosis, and carries out scientific research. Universities and scientific institutions employ many animal technicians with the qualification of Diploma in Animal Technology. These staff support biomedical, agricultural, veterinary, environmental and other animal-based scientific research and teaching/training. Their services and expertise are essential for laboratory animal facility management, and provision of specialist laboratory animal breeding services, animal husbandry, and specialist animal technical procedures. Many are also employed as laboratory technicians and research assistants, as their animal technical skills and knowledge are widely valued.

²⁶ Pets Australia, 2017, 'So You Want To Be A Pet or Dog Groomer?!', <<http://petsaustralia.org/pet-jobs-and-pet-businesses/so-you-want-to-be-a-pet-or-dog-groomer>>

ORGANISATIONS	Medical research facilities are some of the largest employers of animal technicians across Australia. Employers also include universities, CSIRO, hospitals and TAFEs. The Australia and New Zealand Laboratory Animal Association represents the industry.
GEOGRAPHIC LOCATION	Nationally, the animal technology sector encompasses positions such as laboratory animal carer and laboratory animal researcher. The range of locations varies across states.
AUTOMATION AND DIGITISATION	No automation and digitisation of note.

UB-SECTOR NAME CAPTIVE WILDLIFE OPERATIONS

SCOPE OF WORK This sector comprises businesses and organisations that operate:

- zoos, wildlife parks and sanctuaries
- aquariums

animal circuses and other mobile animal displays.

ORGANISATIONS There were 107 certified public and private zoos, aquariums, wildlife parks and sanctuaries in Australia in 2009.²⁷ These include:

- small private and local government-owned wildlife parks, zoos and aquariums
- wildlife parks, sanctuaries, and zoos owned by the National Trust and co-operatives
- large zoos and aquariums owned by public companies
- state government-owned zoos and wildlife parks.

Main organisations:

- Merlin Entertainments (Australia) Pty Ltd (subsidiary of UK-based Merlin Entertainments Group), managing Sydney Aquarium, Wild Life Sydney Zoo, Manly Sea Life Sanctuary and Hamilton Island Wildlife Park
- The Zoological Parks Board of New South Wales (NSW Government authority), managing Taronga Zoo in Sydney and the Western Plains Zoo in Dubbo (New South Wales)
- Zoos Victoria, operating Melbourne Zoo, Healesville Sanctuary and Werribee Open Range Zoo.

GEOGRAPHIC LOCATION Each state and territory in Australia has government departments responsible for national park and conservation reserves. Also, in each state there is one major public zoo and botanic garden.

²⁷ Zoo and Aquarium Association, 2009, 'Report on the Economic and Social Contribution of the Zoological Industry in Australia', <<http://www.zooaquarium.org.au/index.php/press-releases/reference-materials>>

AUTOMATION AND DIGITISATION

Digital technology is heavily used in the sector, including tracking systems for animals, state-wide databases of flora and fauna, computerised maps and mapping, communication systems, and local area networks (LANS) to cover all offices in a state. Computerised asset management systems are also used across the national reserves and conservation parks sector.

Zoo operators use national and international breeding computerised classification for tracking of animals; and microchip implants for all endangered species in their collection as a means of individual identification. In addition, computerised ticketing systems allow for the collection of information on visitor origins. Scientific research on endangered vegetation usually involves the use of satellite and global positioning technology (GPS).

SUB-SECTOR NAME HUNTING AND TRAPPING**SCOPE OF WORK**

This sector comprises businesses mainly engaged in hunting, trapping or taking animals, birds or reptiles in the wild for commercial, population control or pest control purposes.

Hunting is restricted to species that can be legally hunted in Australia and includes feral and game animals. Animals classified as feral or pest animals can be hunted at any time. Those animals classified as game animals are managed as a resource in regulated seasons, and bag limits apply.

Hunters are also involved in providing assistance to farmers by undertaking wildlife management activities.

ORGANISATIONS

In 2016 there were 567 hunting and trapping businesses in Australia. Of these, 84 per cent were non-employing companies and 26 per cent employed fewer than 20 people.²⁸ In addition, there are around 300,000 active hunters involved in recreational hunting.²⁹

GEOGRAPHICAL LOCATION

Hunting and trapping operations in Queensland (240 practices) and New South Wales (175 practices) account for 72 per cent of all hunting and trapping operations. Western Australia, Victoria and South Australia have each up to 50 hunting and trapping operations.³⁰

AUTOMATION AND DIGITISATION No automation and digitisation of note.

Relevant Stakeholders

²⁸ ABS, 2017, 'Counts of Australian Businesses, including Entries and Exits, Jun 2012 to Jun 2016',

<<http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/8165.0Jun%202012%20to%20Jun%202016?OpenDocument>>

²⁹ Finch N., Murray P., Hoy J., and Baxter G., 2014, 'Expenditure and motivation of Australian recreational hunters', *Wildlife Research*, 41(1) 76–83

³⁰ ABS, 2017, 'Counts of Australian Businesses, including Entries and Exits, Jun 2012 to Jun 2016',

<<http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/8165.0Jun%202012%20to%20Jun%202016?OpenDocument>>

The animal care and management industry sector is represented by 46 peak organisations at a national level (Table 1). These organisations include industry sub-sector associations and a small number of other animal health and welfare associations and professional associations. The list does not include state-based industry associations and individual breed societies/associations for each cattle and sheep breed.

Table 1: Peak industry sector organisations

CATEGORIES	GEOGRAPHICAL REPRESENTATION
REGULATORY BODIES	
Australasian Veterinary Boards Council	NATIONAL
INDUSTRY SUB-SECTOR ASSOCIATIONS	
VETERINARY SERVICES	
Australian Veterinary Association	NATIONAL
Veterinary Nurses Council of Australia (VNCA)	NATIONAL
ANIMAL TECHNOLOGY	
Animal Ethics Committees	NATIONAL
Australian and New Zealand Laboratory Animal Association (ANZLAA)	NATIONAL
National Animal Technology Educators Forum (NATEF)	NATIONAL
ANIMAL BREEDING	
Australian Association of Pet Dog Breeders (AAPDB)	NATIONAL
Australian Association of Stud Merino Breeders	NATIONAL
Australian Pig Breeders Association	NATIONAL
Australian Registered Cattle Breeders' Association	NATIONAL
Australian Standardbred Breeders' Association (ASBA)	NATIONAL
Cat Fanciers' Association	NATIONAL
The Australian Stud Sheep Breeders Association Ltd	NATIONAL
Thoroughbred Breeders Australia (TBA)	NATIONAL
PET AND COMPANION ANIMAL SERVICES	
Association of Pet Boarding and Grooming	NATIONAL

Australian Cat Federation Inc (ACF)	NATIONAL
Australian National Cats Incorporated	NATIONAL
Australian National Kennel Council	NATIONAL
Pet Food Industry Association of Australia	NATIONAL
Pet Industry Association of Australia (PIAA)	NATIONAL
Pets Australia	NATIONAL
The Association of Pet Dog Trainers	NATIONAL

CAPTIVE WILDLIFE OPERATIONS

Circus Federation of Australia	NATIONAL
Marine Estate Management Authority	NATIONAL
National Parks	NATIONAL
National Parks Australia Council (NPAC)	NATIONAL
National Parks Conservation Associations	NATIONAL
Parks and Leisure Australia	NATIONAL
Parks Australia	NATIONAL
State and Territory National Parks Association	NATIONAL
Zoo and Aquarium Association	NATIONAL

HUNTING AND TRAPPING

Sporting Shooters' Association of Australia	NATIONAL
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OTHER ANIMAL HEALTH AND WELFARE ASSOCIATIONS

Animal Health Australia	NATIONAL
Animal Medicines Australia	NATIONAL
Animal Welfare Association	NATIONAL
Animal Welfare League Australia	NATIONAL
Australasian Association of Equine Dentistry	NATIONAL
Equine Dental Association of Australia	NATIONAL

PROFESSIONAL ASSOCIATIONS

Australasian Animal Studies Association	NATIONAL
Australian Veterinary Association	NATIONAL
Royal Society for the Prevention of Cruelty to Animals (RSPCA)	NATIONAL
The Environment Institute of Australia and New Zealand	NATIONAL
Vertebrate Pest Management Association Australia	NATIONAL
Veterinary Practitioners Registration Boards	NATIONAL
International Association of Equine Dentistry (Australian Chapter)	NATIONAL
World Wide Association of Equine Dentistry	NATIONAL
Victorian Master Farriers Association	VICTORIA
Master Farriers Association of NSW	NEW SOUTH WALES
Professionals Australia	NATIONAL
EMPLOYEE ASSOCIATIONS	
Community and Public Sector Union	NATIONAL

Industry and Occupational Regulations and Standards

Industry regulations and standards

The Australian animal care and management industry sector operates under the following legislations, regulations and standards.

Animal welfare legislations

Each state and territory government is responsible for its own legislation regarding animal welfare, wildlife protection, and vertebrate pests. The Australian Government has no legislative responsibility for animal welfare and vertebrate pests. At the Commonwealth level, the sector has to comply with the *Biosecurity Act 2015* and the *Environment Protection and Biodiversity Conservation (EPBC) Act 1999* (Cwlth).

State and territory government animal welfare legislations includes:

- *Animal Welfare Act 1992* (ACT)
- *Prevention of Cruelty to Animals Act 1979* (NSW)
- *Animal Welfare Act* (NT)
- *Animal Care and Protection Act 2001* (QLD)
- *Animal Welfare Act 1985* (SA)
- *Animal Welfare Act 1993* (TAS)
- *Prevention of Cruelty to Animals Act 1986* (Vic)
- *Animal Welfare Act 2002* (WA).

Veterinary services regulations

State governments oversee the maintenance of veterinary standards through registration boards and veterinary services legislation. Local governments also coordinate regulations relating to the management of companion animals, including registration, limiting the number of cats and dogs per household, compulsory sterilisation and microchipping. Legislation such as the *Stock Medicines Act*, the *Stock Foods Act*, the *Poisons Act*, and various other food and drug Acts control the use of poisons and specify maximum residue limits for agricultural and veterinary chemicals in human food.

Animal technology regulations

- *Gene Technology Act 2000* (Cwlth)
- *AS/NZS 2243.3:2002 Safety in laboratories – Microbiological aspects and containment facilities*
- *Australian code of practice for the care and use of animals for scientific purposes*
- *Guidelines to promote the wellbeing of animals used for scientific purposes*
- *Quarantine Act 1908* (Cwlth) and *Regulation 2000*
- *The 3Rs: National Centre for the Replacement Refinement and Reduction of Animals in Research (NC3Rs)*
- *Physical Containment Level 2 – Animal Facility*
- *Code of practice for hazardous substances*
- *Biological hazards in Australian workplaces.*

Pet and companion animal regulations

Breeders of purebred and cross-bred dogs and cats are required to comply with the standards in the animal welfare codes of practice available in their jurisdictions, i.e. the *Animal Welfare Code of Practice – Breeding Dogs and Cats (the Breeding Code)* in NSW, or the *Code of Practice for the Operation of Breeding and Rearing Businesses* (2014) in Victoria. Breach of a standard in the codes can result in a penalty infringement notice or prosecution under the animal welfare legislations and related regulations.

Similarly, all training, boarding and shelter establishments are required to comply with relevant codes of practice available in states and territories.

Various licensing systems for dog and cat breeders exist in Victoria and the Australian Capital Territory. In Victoria, breeding establishments are required to register with their local council if the establishment has three or more fertile female dogs and if the establishment sells dogs. In the ACT, the *Domestic Animals Act 2000* requires a person who owns a cat over three months or a dog over six months that is not desexed to have a permit. This applies regardless of whether the person intends for the animal to breed. The *Domestic Animals (Breeding) Legislation Amendment Act 2015* establishes a licensing scheme for breeders. Options for regulating breeders are being considered in New South Wales, being supported by the NSW Government, the RSPCA and the Pet Industry Association of Australia.³¹

A working group on companion animals has been established under the *Australian Animal Welfare Strategy* to develop national standards and guidelines for dogs and cats as a priority task. The

³¹ NSW Young Lawyers Animal Law Committee, 2015, 'Companion Animal Breeding Practices in NSW', <<https://www.lawsociety.com.au/cs/groups/public/documents/internetyounglawyers/1036875.pdf>>

standards and guidelines for dogs and cats will provide pet owners clear information about their responsibilities with regard to the health and wellbeing of their pets.

Captive wildlife regulations

At the Commonwealth level, the sector has to comply with the *Biosecurity Act 2015* and the *Environment Protection and Biodiversity Conservation Amendment (Wildlife Protection) Act 2001*.

The Australian Government regulates the import and export of plants and animals (alive, dead, or parts) through the Department of Agriculture and Water Resources (DAWR). DAWR are responsible for biosecurity and the regulation of international movements (exports and imports) of wildlife and wildlife products.

Each state and territory has its own legislation, responsibilities and standards for the professional exhibition and maintenance of native animals in zoos. Permits for the keeping of native and exotic species in zoos and aquaria are issued by the relevant authorities in each state or territory.

Hunting and trapping regulations

The Vertebrate Pests Committee (VPC) is an Australasian committee whose role is to provide coordinated policy and planning solutions to pest animal issues. The VPC is also responsible for implementing the Australian Pest Animal Strategy (APAS) and operates in accordance with the Terms of Reference defined by the Natural Resources Management Standing Committee (NRMSC) and reports to it through the National Biosecurity Committee (NBC).

Hunting in Australia is regulated separately by each state and territory government. This has led to a variety of different regulations and laws, as well as different fees, charges and licence requirements. For instance, game and feral animal hunting in New South Wales is subject to regulations set out in the *Game and Feral Animal Control Act 2002* and the *Game and Feral Animal Control Regulation 2012*. The NSW Department of Primary Industries is responsible for enforcement of and compliance with these regulations.

The legislation relating to wildlife in Queensland includes the *Nature Conservation Act 1992* and related regulations. The Department of Environment and Heritage Protection (EHP) and the Department of National Parks, Sport and Racing (NPSR) oversee the regulations and issue licenses for hunting of native animals.

Live animal export legislation

The *Australian Meat and Live-stock Industry Act 1997* and the *Export Control Act 1982* are the two Acts that cover live animal export, and they are administered by Department of Agriculture and Water Resources (DAWR).

Regulated Occupations in the Industry

Regulated occupations have legal (or industry) requirements or restrictions to perform the work. Regulated occupations require a license from, or registration by, a professional association or occupational licensing authority.

The industry involves different professional accreditation structures overseen by industry bodies. For example, registration with the state or territory Veterinary Registration Board is mandatory and becomes the license to practice as a veterinarian. In addition, a national Accreditation Program for Australian Veterinarians integrates private veterinary practitioners into the national animal health system. The program accredits non-government veterinarians who can use their skills and knowledge effectively to contribute to government and industry animal disease control programs, and export inspection and certification.

Challenges and Opportunities in the Sector

The Australian animal care and management sector operates in a dynamic environment shaped by market factors, technology developments, and a range of policy frameworks at state, national and international levels. Challenges and industry opportunities for growth are discussed below. In summary, the outlook for the Australian animal care and management sector is strong, highlighted by an increased demand in animal health and welfare services and a high quality of Australian animal products abroad.

Government Policies

The animal care and management industry sector has the opportunity and challenge to continue its working relationship with the Australian Government and state governments to strengthen legislations and policies that cover animal welfare and oversee the maintenance of the industry standards.

An opportunity for industry–government dialogue in 2016–17 has been the Australian Government's decentralisation plan for the Australian Pesticides and Veterinary Medicines Authority (APVMA) to benefit regional Australia.³²

The Australian Government's Australian Veterinary Reserve (AVR) provides ongoing opportunities for the veterinary sector through government-funded participation of private practitioners in the AVR, which is drawn on in the event of a major animal disease outbreak.

Governments have a shared responsibility to develop national surveillance and diagnostic programs to address Australia's broad range of biosecurity, including activities to investigate the presence or prevalence of pest or diseases in an animal population and its environment. A new state framework to manage biosecurity issues is the Western Australian Biosecurity Strategy, which helps protect Western Australian growers from incursions of pests and diseases that could negatively impact production and access to markets, and covers the period of 2016–2025.³³ In Northern Territory, the industry called on the new government in 2016 to boost resources for the state's biosecurity veterinary services due to concerns about the ability to manage a disease emergency with the current veterinary staffing levels.³⁴

The zoological sector, and in particular publicly owned and operated zoos, takes new opportunities to build new attractions and develop infrastructure as the result of extensive forms and levels of government assistance measures provided to the sector.

On a case-by-case basis, state governments develop policies and allocate funds in the effort to combat invasive species that cost farmers billions of dollars in livestock losses, disease transmission and controls, providing opportunities to the hunting sector and pest animal controllers. A recent example is the Victorian Government, which allocated \$11 million in baiting, hunting and trapping programs in the 2016–2017 Budget. Similarly, the Western Australia Government announced a wild dog action plan over the next five years for cell fencing grants, doggers, restoration and extension of the existing state barrier fence.³⁵ The Australian Government is also supporting farmers and the community to tackle established pest animals through a recent funding program to support the

³² The Canberra Times, 2016, 'Two in three Australian Pesticides and Veterinary Medicines Authority staff "could quit" due to Armidale "farce"', July 17, 2016, <<http://www.professionalsaustralia.org.au/blog/wo-three-australian-pesticides-veterinary-medicines-authority-staff-quit-due-armidale-farce>>

Professionals Australia, 2016, 'Joyce undermines Australian Government Veterinary Service', media release 28 October 2016, <<http://www.professionalsaustralia.org.au/blog/joyce-undermines-australian-government-veterinary-service>>

³³ Department of Agriculture and Food, Western Australian Government, 2016, 'Western Australian biosecurity supported with new strategy', <<https://www.agric.wa.gov.au/newsletters/agmemo-rangelands/rangelands-agmemo-december-2016-issue-4?page=0%2C6>>

³⁴ Australian Veterinary Association, 2016, 'More government vets needed in the NT', <<http://www.ava.com.au/node/83333>>

³⁵ Prendergast, J., 2016, 'Wild dog fencing key to bringing more sheep back to Western Australia, industry says', ABC News, <http://www.abc.net.au/news/2016-11-15/wild-dog-funding-will-boost-sheep-flock-wa/8026018?WT.mc_id=newsmail>

development and/or improvement of innovative and forward-thinking control tools and technologies from 2016–17 to 2018–19.³⁶

Market

Australia has one of the highest rates of pet ownership in the world.³⁷ Population growth and rising disposable income are expected to drive a further growth in Australian households owning a pet, which will require a range of veterinary services over the next decade. Other care services such as farriery, equine dental services and grooming will also be required. Alternative therapies, including specialisations such as animal rehabilitation, physiotherapy and acupuncture, have increasingly become popular with animal owners.

Availability of more expensive treatments and application of advanced treatments for broken bones and serious illnesses is also expected to lift the demand for industry services (including pet insurance and pet welfare) as the life expectancy of animals is growing.

Trends such as growing popularity of urban apartment living and the shift from housing affordability towards renting may limit the potential growth in pet numbers, as many of these places prohibit pets.

While there are market opportunities for the industry participants to sustain revenue growth, these will be required to continuously promote value-added services.

The rural/farm animal market segment and its paying capability for veterinary services provide greater challenges for the veterinary sector. A cost-effective veterinary intervention at farm level is dependent on number of sales and prices for livestock or yearlings sold by breeders. A growth in international trade, which is currently driven by the rising demand for Australian animal products abroad, may stimulate the demand for veterinary services in the rural areas.

A different major issue affecting veterinarians in rural areas is farmers' attitudes towards veterinary services. There is a reluctance among farmers to use vets, due to the lack of awareness about what vets could do for herds' health and productivity.³⁸ In this context, veterinarians in rural areas have the opportunity to actively sell their services and educate farmers in efficient herd management to improve the health and productivity of production animals by limiting devastating diseases.³⁹

Q fever and Hendra virus are notifiable conditions that challenge the veterinary and horse-related industries and other businesses working with animals to manage risks related to disease identification and infestation.⁴⁰ Q fever is one of the most common diseases that humans contract from animals. About half of Australian cases of Q fever occur in Queensland, with around 9 people affected each year per 100,000 people.⁴¹ Prevention of the virus requires stringent biosecurity, workplace health and safety and infection control measures.

Recurrent bushfires and flood events in urban and rural areas involve immediate rescue efforts of

³⁶ Department of Agriculture and Water Resources, 2016, 'Control tools and technologies for established pest animals and weeds competitive grants programme', <<http://www.agriculture.gov.au/pests-diseases-weeds/pest-animals-and-weeds/wp-comp-grants-programme>>

³⁷ Animal Health Alliance, 2013, 'Pet Ownership in Australia', <<http://animalmedicinesaustralia.org.au/wp-content/uploads/2014/08/Pet-Ownership-in-Australia-2013-Summary-ONLINE-VER.pdf>>

³⁸ The Australian Veterinary Association Ltd, 2013, 'Australian veterinary workforce review report', <https://www.ava.com.au/sites/default/files/AVA_website/pdfs/AVA%20workforce%20review%20report%202013.pdf>

³⁹ Professionals Australia, 2015, 'Informers: Veterinary Services', <http://www.professionalsaustralia.org.au/wp-content/uploads/2015/08/VET_INFORMER_v1.pdf>

⁴⁰ Condon, M., and Herbert, B., 2017, 'Hendra virus case in Casino not typical, raising concern for nation's vets', *ABC News*, <http://www.abc.net.au/news/2017-01-09/hendra-case-in-casino-raises-concerns-for-nations-vets/8166132?WT.mc_id=newsmail&WT.tsrc=Newsmail>

Fitzgerald, B., 2017, 'Victorian farmer group calls on Federal Government to subsidise Q Fever vaccine', *ABC News*, <http://www.abc.net.au/news/2017-01-17/vff-calls-for-federal-government-to-subsidise-q-fever-vaccine/8187706?WT.mc_id=newsmail&WT.tsrc=Newsmail>

⁴¹ Queensland Government, 2016, 'Q fever', <<https://www.business.qld.gov.au/industry/agriculture/species/diseases-disorders/animals/q-fever>>

state-based veterinary emergency management agencies, RSPCA and animal rescue organisations to provide emergency care for affected animals. Many farm and native animals often require longer-term treatment and rehabilitation.⁴²

Research, Innovation and Applied Technology

It is crucial that research and development is used in the industry to build knowledge and understanding of challenges, to secure future success of the animal care and management sector.

Veterinarians use new technologies, advanced medical procedures (ultrasounds, laparoscopy, MRI, microfracture detection) and newly developed pharmaceuticals in their practices. Demand has also created specialisation in the sector, such as animal oncology, cardiology and dentistry, in addition to many specialist animal surgeons, and a range of complementary services, such as physiotherapy, acupuncture and rehabilitation for animals.

Biotechnological and molecular approaches for diagnosis, prevention and control of infectious diseases of animals are making significant inroads into the industry, creating new opportunities. Similarly, fast adoption of 3D printing in the industry for rapid-prototyping of bones enables vets and surgeons to have a solid grasp of a patient's internal bone or muscle structure before going in to operate.

GPS and sensor-based technologies, including remote sensors, drones, new generation satellite imagery technologies, wearable and mobile technologies and apps, grow in popularity for a broad range of applications, including real-time surveillance of pest invasion,⁴³ diagnostics and management of wildlife, and animal tracking and monitoring in livestock farming,⁴⁴ amongst many other applications.

Further, new technologies include transportation and lifting systems, and robots that will help to improve the chances for horses recovering from limb fractures and other traumatic injuries; and new veterinary vaccines and treatments.

⁴² Logan, T., 2017, 'Stranded livestock rescued from WA floodwaters with dinghy and jet ski', *ABC News*, <http://www.abc.net.au/news/2017-02-15/stranded-livestock-rescued-from-wa-floodwaters-with-dinghy/8270260?WT.mc_id=newsmail&WT.tsrc=Newsmail>

⁴³ Prendergast, J., 2016, 'Wild dog fencing key to bringing more sheep back to Western Australia, industry says', *ABC News*, <http://www.abc.net.au/news/2016-11-15/wild-dog-fencing-will-boost-sheep-flock-wa/8026018?WT.mc_id=newsmail>

Pancia, A., 2016, 'Drones high on the wish list for farmers this Christmas', *ABC News*, <<http://www.abc.net.au/news/2016-12-09/drones-on-the-wish-list-for-farmers/8083030>>

⁴⁴ Fitzgerald, D., 2017, 'Northern Territory cattle station adopts drone to muster cattle, check fires', *ABC News*, <<http://www.abc.net.au/news/2017-01-12/northern-territory-drone-muster-birrindudu-station/8177946>>

C. EMPLOYMENT

Employment Update

Total employment

It is difficult to establish total employment for the animal care and management industry due to the following reasons:

- Not all animal care and management sectors are well defined by the ANZSIC classification – as veterinary services is, for example. Also, most animal care and management occupations serve a wide range of industries. So, a full employment analysis via the ABS Census counts is not possible for this industry sector.
- Some main occupations within the animal care and management area, such as farrier, horse breeder or stable hand, are grouped in 4-digit ANZSCO codes with other occupations that are not necessarily designed for or happening only within this industry. As standard output of ABS Census for occupation data is limited at the 1-, 2-, 3- or 4-digit level of the ANZSCO classification, it makes the 6-digit level data assigned to individual occupations difficult to source.
- Other occupations such as equine dental providers, animal control officers, outdoor activity assistants, pet shop workers or animal shelter workers are not defined by ANZSCO. When such occupation information is collected in the Census, it may be coded to 'not further defined (ndf)' codes in the next highest level, which is sufficiently broad to include all possibilities suggested by the available information.

There are three major occupation groups representing animal care and management that are well defined by national classification. These are as follows, and are used in the next analysis to describe the major employment figures for this industry:

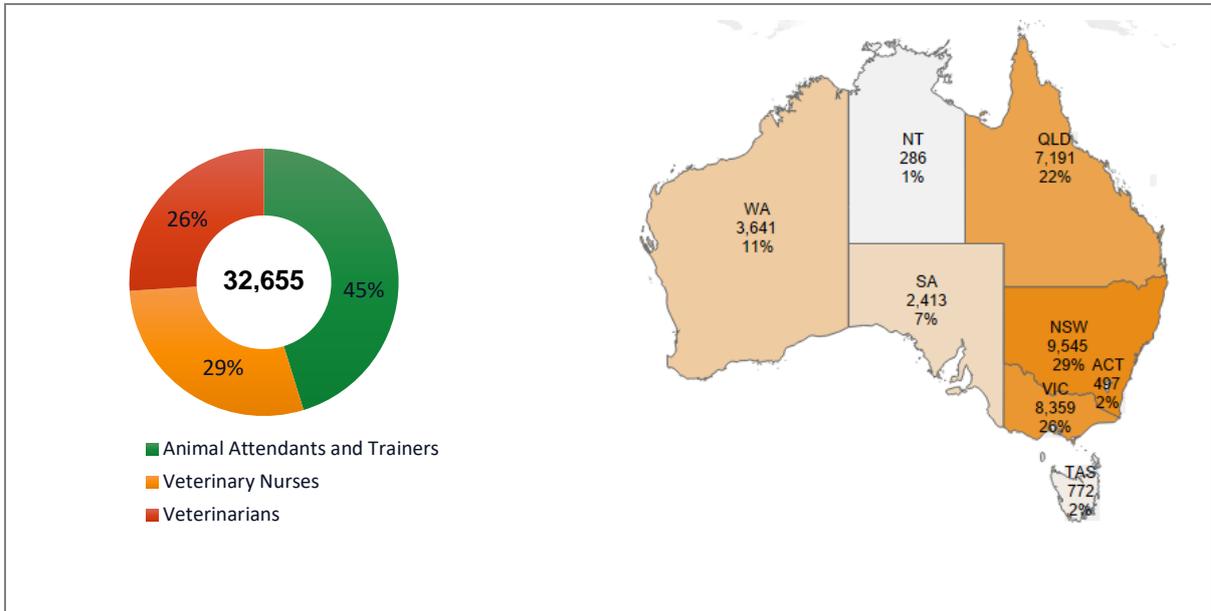
- animal attendants and trainers, such as dog trainer or handler, horse trainer, pet groomer and zookeeper
- veterinary nurses
- veterinarians.

In 2016, there were 32,655 people employed in occupations that include animal attendants and trainers, veterinary nurses and veterinarians. About 53% of these people were employed full-time.⁴⁵

Animal attendants and trainers represented almost half (45%) of the employment represented by these three main occupations. The demand for animal care and management service was higher in New South Wales, Victoria and Queensland, providing jobs for 77% of all people employed in these occupation.

⁴⁵ All employment data in this report is sourced from the ABS Census datasets via the TableBuilderPro product. National Census dataset system adjusts counts by a small number to maintain confidentiality of information. As a result, small inconsistencies can be noticed in this report between total industry employment and the sum of individual values of the data tables from Attachments.

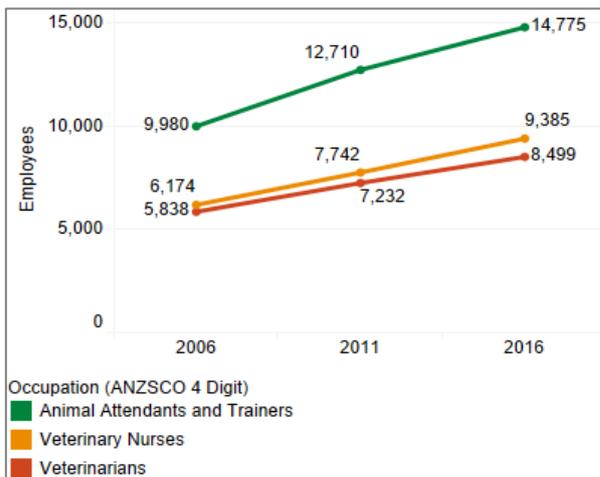
Employment by main animal care and management occupations and states and territories, 2016



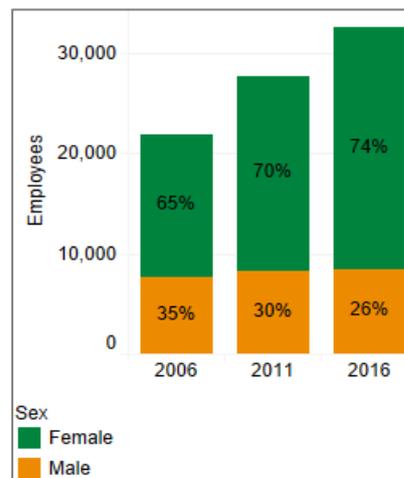
Changes in employment, 2006 to 2016

For all three occupations, the employment increased significantly and almost at the same rate from 2006 to 2016. Specifically, the number of animal attendants and trainers increased by 48%, from 9,980 employees in 2006 to 14,775 employees in 2016. The number of veterinary nurses and veterinarians increased by 52% and 46% respectively over the same period of time.

Trends for occupational employment, 2006–2016



Occupational employment by gender, 2006–2016



Gender Composition of the Workforce

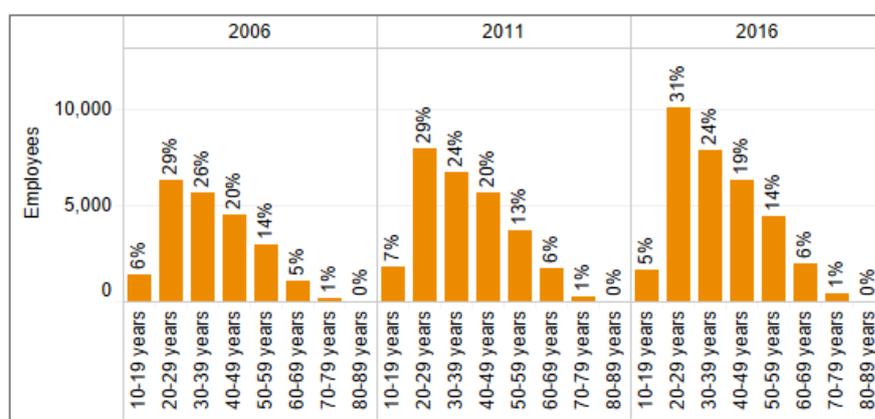
Animal care and management professions have long been dominated by women. In 2016, 74% of all employment contracts for these occupations was occupied by women. When compared with the year 2006, this represents a 9% growth in women's participation.

An analysis of the three main occupations indicates that veterinary nurses had the highest level of women represented (97%) in 2016, while veterinarians had the lowest (55%).

Age Levels of the Workforce

The overall age distribution across animal care and management's main occupations experienced minor changes from 2006 to 2016. A slight decline (2%) was recorded for the proportion of people in the age groups 10 to 19 and 30 to 39, and a small growth (1%) for the proportion of those in the older age group, 60 to 69.

Occupational employment by age level, 2006–2016



Employment Outlook

The Department of Employment provides employment projections for the Australian industry sectors covered by the ANZSIC classification. In ANZSIC, most sectors of the animal care and management industry are hidden under classes such as 'other services' or integrated in larger groups. The Department's projections are thus available only for the veterinary and hunting sectors. According to the estimates, no employment growth is anticipated in veterinary and hunting sectors over the next five years (Table 2).

Table 2: Department of Employment Industry Projections – Five Years to November 2020⁴⁶

INDUSTRY SECTOR	EMPLOYMENT LEVEL		EMPLOYMENT PROJECTIONS	
	Nov 2015	Nov 2020	Growth	
	('000)	('000)	('000)	(%)

⁴⁶ ABS, 2011, '2011 Census of Population and Housing'

Veterinary Services	24.5	24.6	0.1	0.4
Animal Breeding	-	-	-	-
Pet and Companion Animal Services	-	-	-	-
Captive Wild Animal Operations	-	-	-	-
Hunting and Trapping	0.3	0.3	0.0	0.0
Total	24.8	24.9	0.1	0.0

SKILLS OUTLOOK

Anticipating future skills needs in the animal care and management sector is crucial to prepare for and meet the new demands of increasing pet ownership and changes in technology in Australia. Leading indicators of the current and future skills needs in the sector include:

- trends and/or estimates of workforce supply, skill shortages, employment growth or growing occupations
- future changes in workplace and job design, which are driven by innovation at the business and/or industry level as a result of economic, technological, social and environmental factors, as well as introduction of new policies and legislations.

This section identifies the priority skills needs in animal care and management over the years of 2017–2020 through an analysis of new and estimated future demands placed upon the industry. The section focuses on the skill needs that can benefit from improvement or development of national skill standards, as opposed to market adjustment mechanisms designed to balance the supply and demand for a skilled workforce.

The industry expects that the priority skill projects identified in this section will be undertaken over 2018 and 2019 so that the skills can be developed and available before 2021. Refer to the IRC Training Product Review Plan 2018–2021 for the proposed schedule of priority skill projects and units to be checked for currency and possibly reviewed as part of the four-year cycle.

. A project involving the review of qualifications for veterinary nursing was submitted to the AISC in 2017 and is currently waiting for endorsement. Two projects (the review of the farrier qualification and development of infection control units) will be submitted to the AISC for endorsement in June 2018. Refer to the Current IRC Projects section for the list of units that are currently developed and reviewed from the *ACM Animal Care and Management Training Package*.

Training Activity

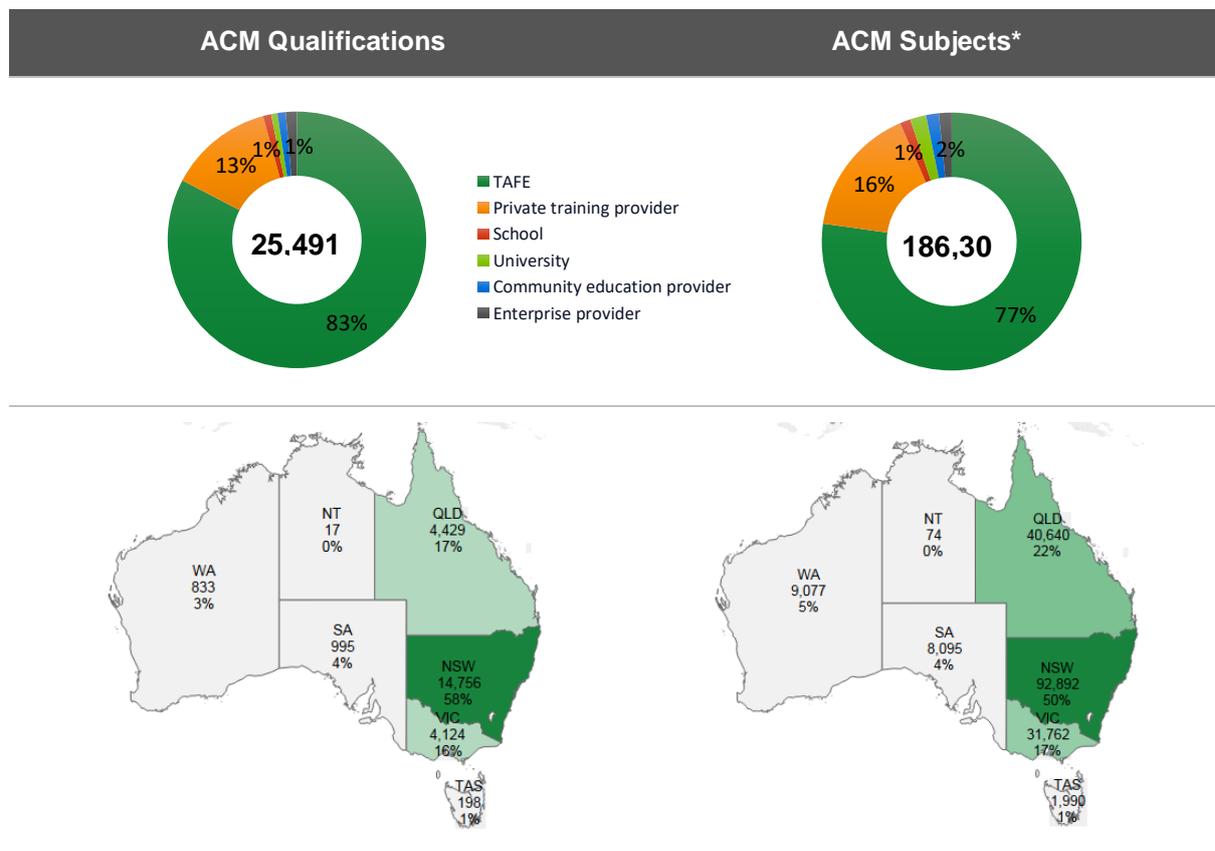
Number of training providers

Currently, there are 168 registered training organisations with ACM10 training components in scope, servicing the animal care and management industry sector.⁴⁷

Number of student enrolments

In 2016, there were 25,491 student enrolments in ACM qualifications and 186,301 student enrolments in ACM units of competency. Most students were attracted by TAFE organisations in New South Wales.⁴⁸

Student enrolments, 2016

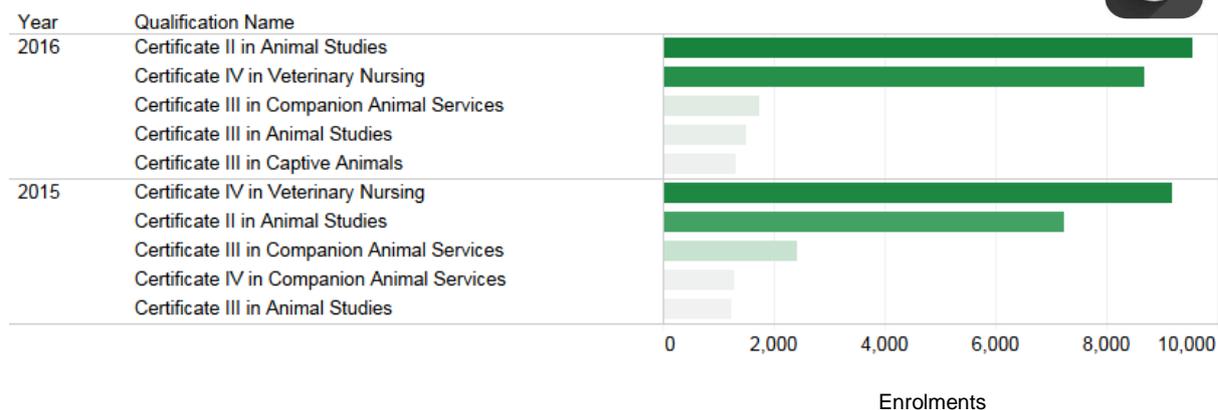


* Units of competency prefixed ACM and RUV.

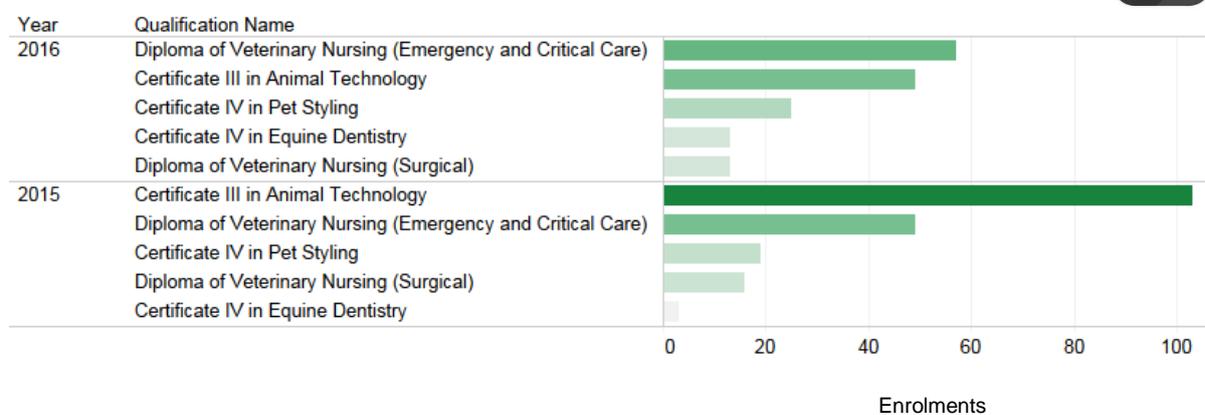
⁴⁷ training.gov.au

⁴⁸ All training data in this report is sourced from VOCSTATS.

Top five most popular qualifications



Least popular qualifications



Qualifications with no enrolments



Year	Qualification Name
2016	Diploma of Veterinary Nursing (Dental)

Qualification enrolments

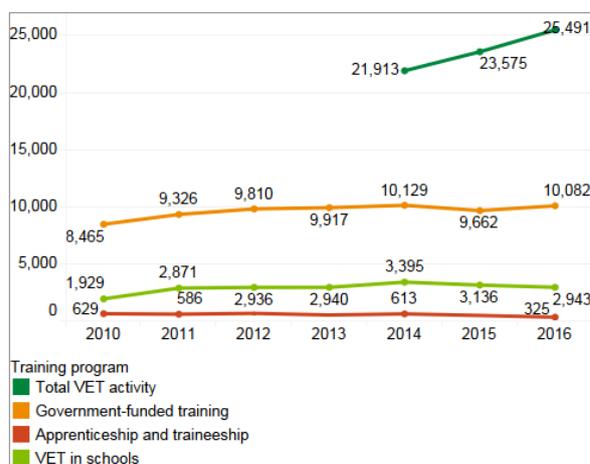
Total VET enrolments in ACM qualifications grew by 16% (or 3,578 enrolments) to 25,491 between 2010 and 2016. This includes enrolments from all types of providers and combines government-funded, apprentices, VET in schools and fee-for-service training from private and other training providers.

Apprenticeships and traineeships for animal care trade and non-trade occupations have been traditionally low. Commencements dropped by 48% from 629 in 2010 to 325 in 2016.

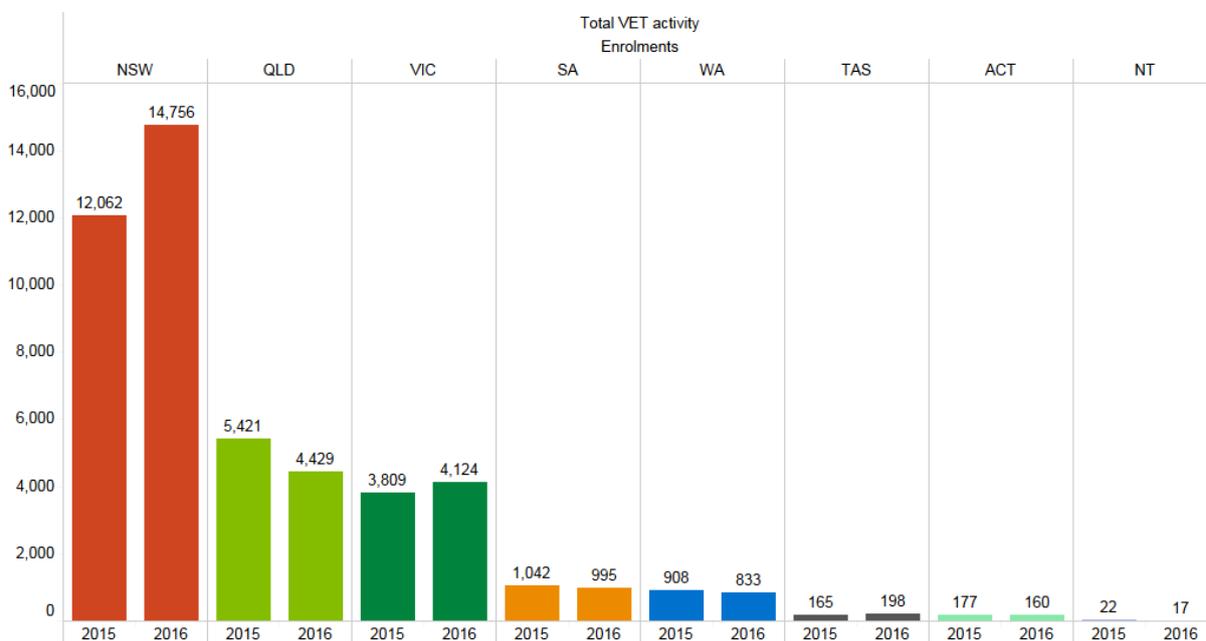
Government-funded enrolments for ACM qualifications increased gradually from a low of 8,465 in 2010 to a high of 10,129 in 2014. Overall, there was a 20% increase in enrolments over 2010–2014. This growth was followed by a fall of 5% (or 467 enrolments) in 2015, which recovered in 2016.

VET in schools activity regarding ACM qualifications delivered to school students expanded by 76% from 1,929 enrolments in 2010 to 3,395 in 2014; and contracted by 13% between 2014 and 2016. The VET in schools figures include only enrolments through TAFE and state schools operating as registered training organisations (RTOs).

Trends in enrolments for ACM qualifications, 2010–2016



State-level comparison for total VET enrolments in ACM qualifications, 2015–2016*



* State/territory of training organisation. Uncategorized data for state/territories (reported as 'Not known') is not included.

Subject enrolments

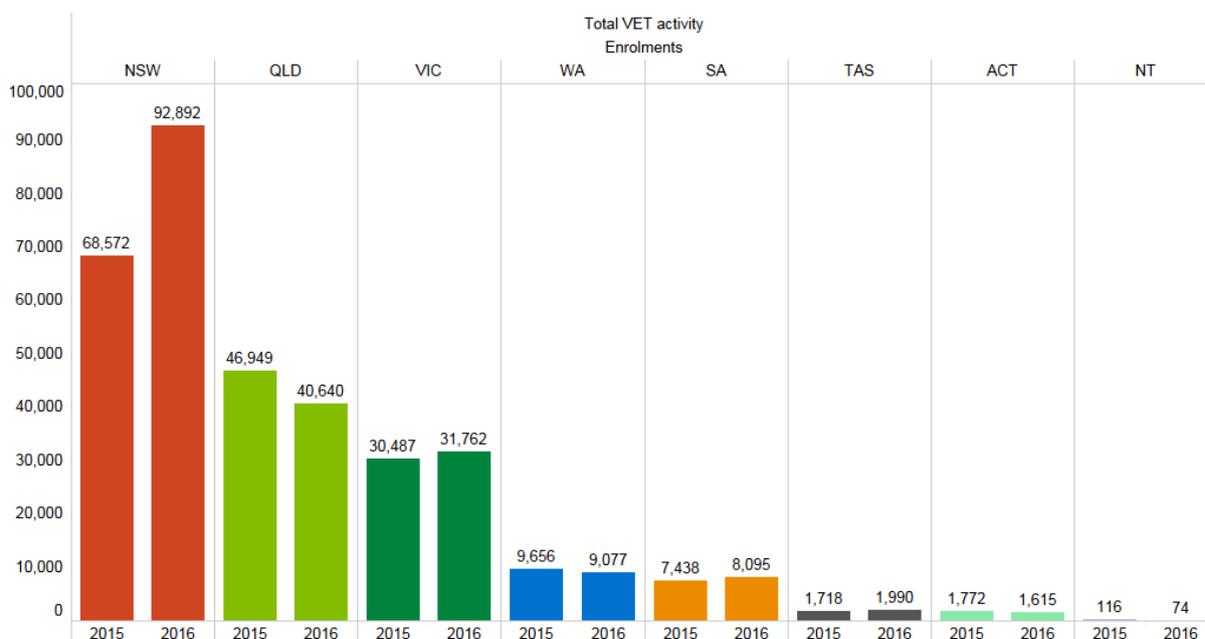
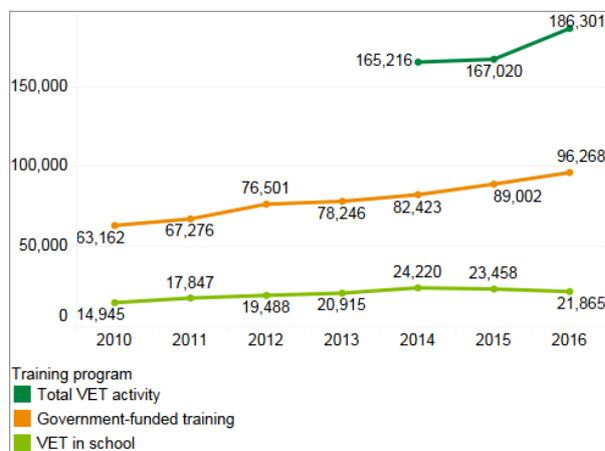
Total VET enrolments for ACM subjects increased by 13% (or 21,085 enrolments) from 2014 to 2016.

Government-funded enrolments expanded gradually between 2010 and 2016, reaching a high of 96,268 in 2016. There was a 52% growth over this time period.

VET in schools activity regarding ACM subjects delivered to school students also increased by 62% (or 9,275 enrolments) from 2010 to 2014. This was followed by a slight decline of 10%, reaching 21,865 enrolments in 2016.

State-level comparison for total VET enrolments in ACM units of competency, 2015–2016*

Trends in enrolments for ACM units of competency, 2010–2016

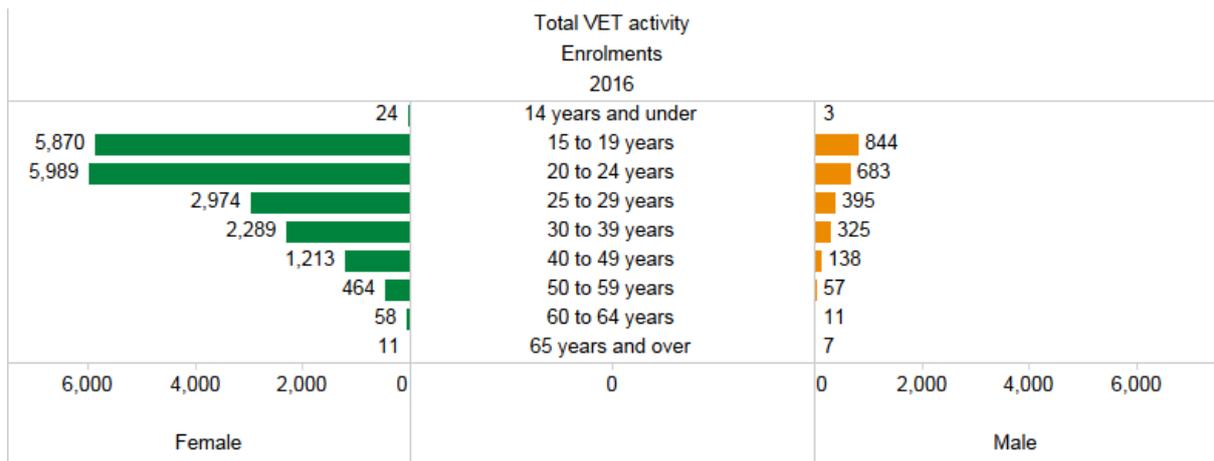


* State/territory of training organisation. Uncategorised data for state/territories (reported as 'Not known') is not included.

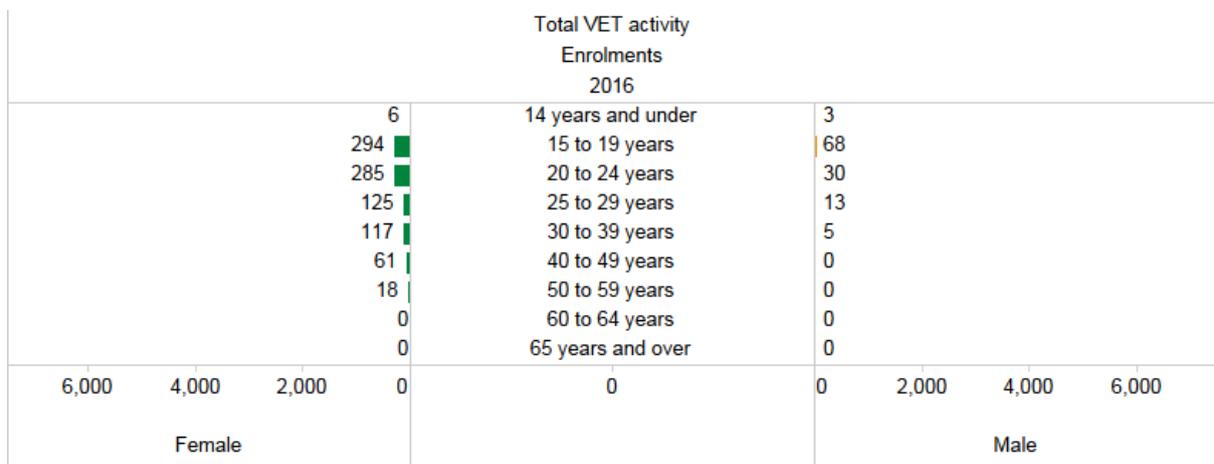
Student profile

Total student cohort enrolled in ACM qualifications was represented by 88% female and 12% male in 2016. The highest proportion of students were in the age groups 15 to 19 and 20 to 24 years. There was a small representation of Indigenous students (1,025). Over half of students lived in major cities and over a quarter in inner regional Australia. A small proportion of students resided overseas.

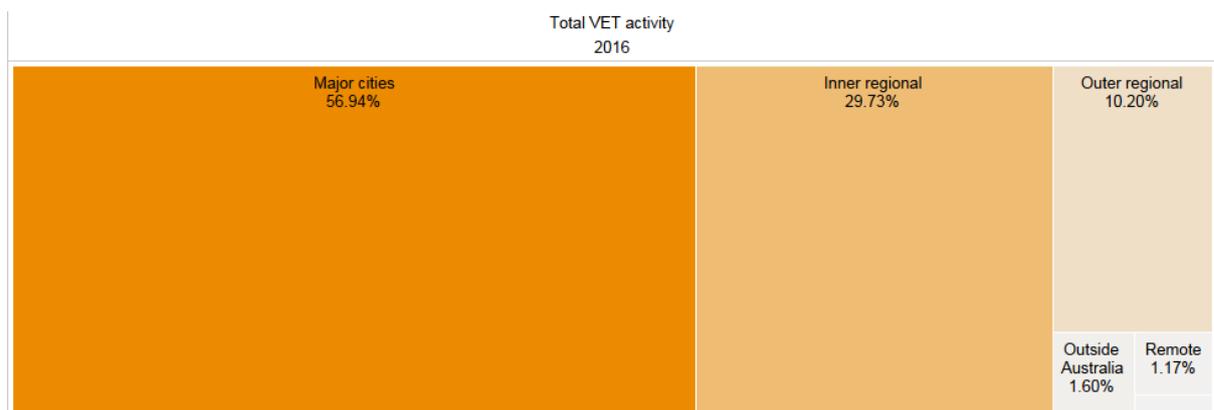
Student personal characteristics: GENDER AND AGE*



Student personal characteristics: INDIGENOUS STATUS*



Student personal characteristics: REMOTENESS*



* Uncategorised data (reported as 'Not known') is not included.

Industry Priority for Generic Skills

Industry Reference Committees were consulted on ranking the generic skills priorities for the industry from a list provided by the Department of Education and Training. The table below outlines the advice received.

Rank	Generic Skill
1	Language, Literacy and Numeracy (LLN) skills
	Foundation skills of literacy and numeracy.
2	Other generic skills
	Ethical animal use Animal awareness and behaviour Emotional intelligence of animals
3	Learning agility/Information literacy/Intellectual autonomy and self-management skills
	Ability to identify a need for information. Ability to identify, locate, evaluate, and effectively use and cite the information. Ability to discriminate and filter information for importance. Ability to do more with less. Ability to quickly develop a working knowledge of new systems to fulfil the expectations of a job. Ability to work without direct leadership and independently.
4	Customer service/Marketing skills
	Ability to interact with another human being, whether helping them find, choose or buy something. Ability to supply customers' wants and needs both via face to face interactions or digital technology. Ability to manage online sales and marketing. Ability to understand and manage digital products.
5	Managerial / Leadership skills
	Ability to effectively communicate with all functional areas in the organisation Ability to represent and develop tasks and work processes for desired outcomes Ability to oversee processes, guide initiatives and steer employees toward achievement of goals

Rank	Generic Skill
6	Communication/Collaboration including virtual collaboration/Social intelligence skills
	<p>Ability to understand and apply the principles of creating more value for customers with fewer resources (lean manufacturing) and collaborative skills.</p> <p>Ability to critically assess and develop content that uses new media forms and leverage these media for persuasive communications.</p> <p>Ability to connect with others deeply and directly, to sense and stimulate reactions and desired interactions.</p>
7	Technology use and application skills
	<p>Ability to create and/or use of technical means understand their interrelation with life, society, and the environment.</p> <p>Ability to understand and apply scientific or industrial processes, inventions, methods, etc.</p> <p>Ability to deal with increasing mechanisation and automation and computerisation.</p> <p>Ability to do work from mobile devices rather than from paper.</p>
8	Financial skills
	<p>Ability to understand and apply core financial literacy concepts and metrics, streamlining processes such as budgeting, forecasting, and reporting, and stepping up compliance.</p> <p>Ability to manage costs and resources, and drive efficiency.</p>
9	Entrepreneurial skills
	<p>Ability to take any idea, whether it be a product and service, and turn that concept into reality and not only bring it to market but make it a viable product and/or service.</p> <p>Ability to focus on the very next step to get closer to the ultimate goal.</p> <p>Ability to weather the ups and downs of any business.</p> <p>Ability to sell ideas, products or services to customers, investors or employees etc.</p>
10	Science, Technology, Engineering and Maths (STEM) skills
	Sciences, mathematics and scientific literacy.
11	Design mindset/Thinking critically/System thinking/Solving problems skills
	<p>Ability to adapt products to rapidly shifting consumer tastes and trends.</p> <p>Ability to determine the deeper meaning or significance of what is being expressed via technology.</p> <p>Ability to understand how things that are regarded as systems influence one another within a complete entity, or larger system.</p> <p>Ability to think holistically.</p>

Rank	Generic Skill
12	<p>Data analysis skills</p> <p>Ability to translate vast amounts of data into abstract concepts and understand data-based reasoning.</p> <p>Ability to use data effectively to improve programs, processes and business outcomes.</p> <p>Ability to work with large amounts of data: facts, figures, number crunching, analysing results.</p>
13	<p>Environmental and sustainability skills</p> <p>Ability to focus on problem-solving and the development of applied solutions to environmental issues and resource pressures at local, national and international levels.</p>

Industry-Specific Priority Skills

The 2018–2021 outlook for skills needs and priorities in the animal care and management sector is shaped by a range of development trends and factors, as outlined below.

Priority Skill 1	Skill Description
Skills in Animal Welfare	<p>Development of skill sets that can be used standalone training or added to the elective banks of relevant qualifications.</p> <p>Relevant Occupations</p> <ul style="list-style-type: none"> • Wildlife keepers • Animal (including wildlife) carers • Animal care attendants • Stud/stable hands • Animal welfare workers • Veterinary Nurses <p>Drivers</p> <p>Animal welfare is of high priority to the general public. Improving how animals are treated in captivity can improve the life of the animal, improve breeding programs and ensure animals' safety. There are also financial and personal costs to be calculated.</p> <p>Recently, 16 polo horses died while being transported via ship to Melbourne. The cause of death is still unknown.</p> <p>Animal conditioning can assist animal keepers in ensuring the highest levels of animal welfare. The animal will feel secure in their surroundings and with the keepers engaged to care for them.</p>

Animal first aid will assist both keepers and pet owners to deliver immediate care to animals until they can be treated and cared for by a veterinarian.

Horse branding is a standard procedure for permanent identification marking of horses, while microchipping is the more humane method. Freeze or fire branding are two practices that can occur, but because these cause pain to the animal and carry the chance of infection, they must be undertaken with the highest possible standards.

Rural and remote animal health workers ensure outcomes from veterinary visits are maximised. Skills will be delivered in a manner that is culturally respectful and that empowers community members.

Animal microchipping is important as this requires implanting of the microchip into the animal. If incorrectly done this could kill the animal.

In many remote communities, a veterinarian may only attend at varying intervals, so animal health care workers that live in the community can assist animal health by preparing the community for vet visits, undertaking regular animal censuses and delivering basic treatments.

Speciality skills are needed in the Diploma of Veterinary Nursing for nurses to specialise in Equine Nursing. Areas to be covered are manual handling of foals, foal neonatal gastric tube feeding, TPN – Total Parenteral Nutrition, placentitis, coordinate equine theatre routines, assist with equine imaging and diagnostics and carry out post-operative and critical care equine nursing routines.

Training Package Solutions

Development of skill sets to be used to enhance current qualifications or as entry into qualifications.

Skill set focus :

- Animal Conditioning
- Animal First Aid
- Horse Branding
- Horse Transport
- Horse Identification
- Rural and Remote Animal Health Worker
- Animal Microchipping
- Equine Veterinary Nursing

Impact

- Animal welfare improvement
- Career progression
- Skill diversification

Risks of not proceeding

Risks of not proceeding

The risks of not proceeding are risks to animal welfare. This can not only

heighten the risk of death or permanent disability to the animal, but can also damage the social license of the industry the animal lives/works in.

Skill Priority 2	Skill Description
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Research Project for the skills needed in Equine Dental	Research report to assist the Animal Care and Management IRC determine the need for further qualifications to be developed for Equine Dentistry.
--	--

Relevant Occupations

Equine dental service providers

Drivers

Prior to any Training Package development being undertaken regarding equine dental, research needs to be undertaken to determine the parameters that a Equine Dental Service Provider's scope of practice is limited to.

Training Package Solutions

Report clearly defining:

- The Acts of Veterinary Science in each State and Territory
 - Limits of the scope of practice for Equine Dental Service Providers
 - International Standards that Equine Dental is practiced
 - The demand for Equine Dental Service providers to deliver services at a higher AQF alignment than the current certificate 4 levels.
-

Impact

- The report will assist the Industry Reference Committee to determine if there is need to a qualification(s) to be developed at higher AQF for Equine Dental Service Providers above the current Certificate 4 in Equine Dentistry
-

Risks of not proceeding

Continuing uncertainty about the scope of practice for Equine Dental Service Providers

Skill Priority 3	Skill Description
-------------------------	--------------------------

Skills in Animal Technology	Full review of the qualifications related to Animal Technology
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Occupations affected	Relevant occupations
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- Animal technician
-

- Laboratory animal technician
- Technician officer
- Field technician
- Animal facility manager
- Animal house manager
- Supervising animal technician

Drivers

Feedback has been received from the Australian and New Zealand Laboratory Animal Association (ANZLAA), the peak body for the Animal Technology industry, that the current units of competency are not fit for purpose.

The content of the units is not suitable for quality training; and the units are not ethically suitable, as they require too many animals to be euthanised during the undertaking of the units.

Full review of the qualifications is needed to ensure that quality training does not impose unethical practice.

Training Package Solutions

- Review the units contained in 2 Animal Technology qualifications
- Development of units for 2 new skill sets:
 - Working on an ethics committee
 - Researchers undertaking surgery
- Development of unit/s for surgical nursing
- Embed/improve containment and exclusion in relevant units

Impact

Learners will be entering the workforce with industry-appropriate skills.

- RTOs will reduce costs, with less animal wastage and improved ethical animal welfare practices.

Risks of not proceeding

The risk of not proceeding will be a detrimental effect on the quality of workers that will be entering the industry; and RTOs will be forced to undertake the training in an unethical manner.

Skill Priority 4

Skill description

Skills in Pet Grooming and Styling

Full review of pet styling and grooming qualifications to ensure best practice standards for the industry.

Relevant Occupations

-
- Pet groomer
 - Pet stylist
-

Drivers

Industry feedback is there is too much inconsistency in the pet grooming training. Due to there being no legislative requirement for a pet groomer to undertake any form of training, many are choosing to undertake lower AQF level skills or forgo training altogether.

To improve the industry, higher and more consistent standards should be developed to ensure the care of animals.

Training Package Solutions

- Removal of the Certificate III in Pet Grooming, with the skills embedded into the Certificate IV in Pet Styling. Certificate IV in Pet Styling would then be the entry level for the industry
 - Development of skill set/s for higher level skills to build on qualification; e.g. skills in breed-specific/competition grooming
 - New units for basic skills in clipping and scissoring prior to using them on live animals
 - Full review of all relevant units
-

Impact on Stakeholders

- Improved skills
 - Greater respect for skills in marketplace
 - Possible higher remuneration when skills are deemed worthy.
-

Risks of not proceeding

The public perception of the industry will remain as 'unskilled' even though it is a highly skilled occupation.

Skill Priority 5

Skills Description

Skills in using animals for therapeutic interactions for humans

Skills to be developed to ensure that when animals are used in therapeutic treatments that animals is used ethically with the highest standards of animal welfare.

Relevant Occupations

- Animal trainers
 - Counsellors
 - Therapists
-

Drivers

Animals are currently used in an array of therapeutic areas for people living with different conditions. These include people living with:

- PTSD
- autism
- dementia
- drug addiction
- diabetes
- epilepsy.

Animals can be used to alert a person to a coming attack, assist in reducing the severity of an attack or be used as a resolution tool.

Training Package Solutions

Development of qualification in using animals in therapeutic situations, and the skills to train the animal to assist in the therapy.

Impact

Greater career mobility.

Risks of not proceeding

Animals are currently being used for therapeutic interactions with humans. As there is no qualifications / units of competency in the National Training Packages the rights and welfare of the animals may not be at the highest possible standard.

Skill Priority 6

Skill Description

Skills for Captives
Animals

Development of skills for workers with captive animals in animal conditioning so that stress levels of animals are in the range that is conducive to optimal breeding

Relevant Occupations

- Animal keeper
 - Wildlife carer/keeper
 - Wildlife manager
 - Zookeeper
-

Drivers

Currently the highest level of vocational education and training in captive animals is Certificate IV. There is a skill gap between the Certificate IV and the Bachelor.

As breeding programs nationally (and internationally) are looking to ensure that fewer species of animals become extinct, greater skills are needed in

animal conditioning so that stress levels of animals are in the range that is conducive to optimal breeding.

Training Package Solutions

Development of higher AQF qualifications and skill sets for Captive Animals.

Impact

- Improved skills for the workplace
 - Greater career flexibility and career path
-

Risks of not proceeding

Stagnant career development.

D. IRC SIGNOFF

This IRC Skills Forecast and Proposed Schedule of Work was agreed as the result of a properly constituted Rural and Related Industry Reference Committee decision.

Signed for and on behalf of the **Animal Care and Management Industry Reference Committee** by its appointed Chair.



(Signature of Chair)

Dr. Laurie Milner

(Print Name of Chair)

27 April 2018

(Date)

ATTACHMENT A

IRC Training Product Review Plan 2018-2021 for the Animal Care and Management Industry Sector

Relevant training package: ACM10 Animal Care and Management

Contact details: Skills Impact Ltd, 559A Queensberry Street, North Melbourne VIC 3051

Date submitted to Department of Education and Training: 28 April, 2018

2018–2019

Skill Priority 1 **Animal Welfare Skill Sets**

Animal welfare is of high priority to the general public. Improving how animals are treated in captivity can improve the life of the animal, improve breeding programs and ensure animals' safety. There are also financial and personal costs to be calculated.

Recently, 16 polo horses died while being transported via ship to Melbourne. The cause of death is still unknown.

Animal conditioning can assist animal keepers in ensuring the highest levels of animal welfare. The animal will feel secure in their surroundings and with the keepers engaged to care for them.

Animal first aid will assist both keepers and pet owners to deliver immediate care to animals until they can be treated and cared for by a veterinarian.

Horse branding is a standard procedure for permanent identification marking of horses, while microchipping is the more humane method. Freeze or fire branding are two practices that can occur, but because these cause pain to the animal and carry the chance of infection, they must be undertaken with the highest possible standards.

Rural and remote animal health workers ensure outcomes from veterinary visits are maximised. Skills will be delivered in a manner that is culturally respectful and that empowers community members.

Animal microchipping is important as this requires implanting of the microchip into the animal. If incorrectly done this could kill the animal.

Skill Priority 2 **Equine Dental Research Project**

Prior to any Training Package development being undertaken regarding equine dental, research needs to be undertaken to determine the parameters that a Equine Dental Service Provider's scope of practice is limited to.

Skill Priority 3 **Full Review of Animal Technology Qualifications**

Feedback has been received from the Australian and New Zealand Laboratory Animal Association (ANZLAA), the peak body for the Animal Technology industry, that the current units of competency are not fit for purpose.

The content of the units is not suitable for quality training; and the units are not ethically suitable, as they require too many animals to be euthanised during the undertaking of the units.

Full review of the qualifications is needed to ensure that quality training does not impose unethical practice.

Skill Priority 4 **Full Review of Pet Styling and Grooming Qualifications**

Industry feedback is there is too much inconsistency in the pet grooming training. Due to there being no legislative requirement for a pet groomer to undertake any form of training, many are choosing to undertake lower AQF level skills or forgo training altogether.

To improve the industry, higher and more consistent standards should be developed to ensure the care of animals.

2019–2020

Skill Priority 5 **Skills in Using Animals for Therapeutic Interactions for Humans**

Animals are currently used in an array of therapeutic areas for people living with different conditions. These include people living with:

- PTSD
- autism
- dementia
- drug addiction
- diabetes
- epilepsy.

Animals can be used to alert a person to a coming attack, assist in reducing the severity of an attack or be used as a resolution tool.

Skill Priority 6 **Higher Level AQF Skills for Captive Animals**

Currently the highest level of vocational education and training in captive animals is Certificate IV. There is a skill gap between the Certificate IV and the Bachelor.

As breeding programs nationally (and internationally) are looking to ensure that fewer species of animals become extinct, greater skills are needed in animal conditioning so that stress levels of animals are in the range that is conducive to optimal breeding.

ATTACHMENT B

Current IRC Projects for the Animal Care and Management Industry Sector

YEAR	PROJECT	QUALIFICATION CODE AND NAME	UNIT OF COMPETENCY CODE AND NAME
2018	Farriery	ACM30517 Certificate III in Farriery	<p>ACMFAR301 Handle equines safely during farriery services</p> <p>ACMFAR302 Work effectively as a farrier</p> <p>ACMFAR303 Perform routine day-to-day farriery activities</p> <p>ACMFAR304 Respond to emergencies and apply first aid</p> <p>ACMFAR305 Perform welding tasks using a forge</p> <p>ACMFAR306 Maintain, repair and manufacture hand tools used in farriery</p> <p>ACMFAR307 Make standard shoes for a range of equines</p> <p>ACMFAR308 Determine foot care and shoeing plans for equines</p> <p>ACMFAR309 Select and fit shoes for normal healthy equines</p> <p>ACMFAR310 Fit shoes to alleviate moderate faults and defects in equines</p> <p>ACMFAR311 Fit shoes to alleviate severe faults and defects in equines</p> <p>ACMFAR312 Use farriery techniques to meet special needs of equines</p>
2018	Working Safely Around Animals (Infection Control)	N/A	<p>ACMWHS201 Participate in workplace health and safety processes</p> <p>ACMWHS301 Contribute to workplace health and safety processes</p> <p>ACMWHS401 Maintain workplace health and safety processes</p> <p>ACMWHS501 Manage workplace health and safety processes</p>

ATTACHMENT C

Project title: Animal Welfare Skill Sets

Description To ensure the highest standards of animal welfare a number of skill sets will be developed that can be used as standalone training or added to the elective banks of relevant qualifications.

Rationale Animal welfare is of high priority to the general public. Improving how animals are treated in captivity can improve the life of the animal, improve breeding programs and ensure animals' safety. There are also financial and personal costs to be calculated.

Recently, 16 polo horses died while being transported via ship to Melbourne. The cause of death is still unknown.

Animal conditioning can assist animal keepers in ensuring the highest levels of animal welfare. The animal will feel secure in their surroundings and with the keepers engaged to care for them.

Animal first aid will assist both keepers and pet owners to deliver immediate care to animals until they can be treated and cared for by a veterinarian.

Horse branding is a standard procedure for permanent identification marking of horses, while microchipping is the more humane method. Freeze or fire branding are two practices that can occur, but because these cause pain to the animal and carry the chance of infection, they must be undertaken with the highest possible standards.

Rural and remote animal health workers ensure outcomes from veterinary visits are maximised. Skills will be delivered in a manner that is culturally respectful and that empowers community members. Workers will be trained to perform companion animal census, deliver community animal health and safety awareness, administer some basic treatments and prepare for vet visits.

Speciality skills are needed in the Diploma of Veterinary Nursing for nurses to specialise in Equine Nursing. Areas to be covered are manual handling of foals, foal neonatal gastric tube feeding, TPN – Total Parenteral Nutrition, placentitis, coordinate equine theatre routines, assist with equine imaging and diagnostics and carry out post-operative and critical care equine nursing routines.

Ministers' Priorities Addressed:

Minister's priorities addressed in the project include:

- ensuring that the training system better supports individuals to move easily from one related occupation to another
- fostering greater recognition of skill sets

-
- ensuring that new training courses can be developed as quickly as industry needs them and available to support niche skill needs.
-

Consultation Plan**Subject matter experts to be consulted:****Animal Conditioning**

- Kay Hargraves, ACM IRC Member
- ACM IRC Member Captive Animal expert (position currently unfilled)
- Representative from state and territory Royal Zoological Societies
- Representative from Zoo and Aquarium Association Australia

Animal First Aid

- RSPCA
- Pet Industry Association of Australia

Horse Branding

- Julie Fiedler – Horse SA – ACM IRC Member
- Representatives of:
 - Australian Veterinary Association
 - Equine Veterinary Association
 - Australian Horse Industry Council

Horse Transport

- Representative from Australian Polo Federation
- Representative from Thoroughbred Breeders Australia
- Representative from Australian Horse Industry Council
- John Sunderland – Godolphin – ACM and Racing & Breeding IRC Member
- Julie Fiedler – Horse SA – ACM IRC Member
- Representatives from large horse transportation organisations such as:
 - Alternative Horse Transport
 - Prestige Horse Transport
 - Southern Cross Horse Transport
 - Equine International Airfreight
 - International Racehorse Transport
 - Goldners Horse Transport

Horse Identification

- Julie Fiedler – Horse SA – ACM IRC Member
-

-
- Representatives of:
 - Australian Veterinary Association
 - Equine Veterinary Association
 - Representatives of equine peak bodies such as:
 - Thoroughbred Breeders Association
 - Australian Warmblood Horse Association
 - Australian Horse Industry Council
 - Show Horse Council Australasia

Rural and Remote Animal Health Worker

- Representatives of:
 - AMRRIC Animal Management in Rural and Remote Indigenous Communities
 - AVA
 - RSPCA
 - Local Aboriginal Land Councils
 - Local Regional Councils.

Equine Veterinary Nursing

- Representatives of:
 - Australian Veterinary Association
 - Equine Veterinary Association
 - Veterinary Nursing Council Australia
 - Scone Equine Hospital

Scope of Project

Timeline

- 1–7 June: Project planning and location booking
 - 1–30 July: Subject matter expert meetings, research and functional analysis
 - 1–30 August: Development of Draft 1 documents
 - 1–30 September: Public consultation – via website and public workshops
 - 1–30 October: Development of Draft 2 documents
 - 1–30 November: TBA second public consultation via website and targeted subject matter expert meetings
 - 1 December–15 January: Final drafting of documents
 - 1–14 February: Public validation via website
-

16 February–30 March: Finalisation of documents, including Case for Endorsement

25–30 April: Proofreading of documents

3–10 May: Edit and Equity Review

14–16 May: IRC Case for Endorsement Approval to submit for Quality Assurance review

30 May–6 June: Quality Assurance evaluation

8–22 June: State/Territory Training Authority Review

25–29 June: Industry Reference Committee final sign-off

30 June: Submission to Australian Industries Skills Committee

Animal Care and Management Training Package

No qualifications to be developed.

6 (approx.) new skill sets:

- Animal Conditioning
- Animal First Aid
- Horse Branding
- Horse Transport
- Horse Identification
- Rural and Remote Animal Health Worker
- Animal Microchipping
- Equine Veterinary Nursing

37 units of competency to be developed/revised:

- Up to 10 Animal Conditioning units
 - Up to 3 Animal First Aid units
 - Up to 2 Horse Branding units
 - Up to 4 Horse Transport units
 - Up to 2 Horse Identification units
 - Up to 5 Rural and Remote Animal Health Worker units
 - Up to 10 Equine Veterinary Nursing units
 - Review of ACMMIC401 for Animal Microchipping
-

Project title: Equine Dentistry Research Project

Description	Development of a report that will assist the IRC in determine the need and parameters of further qualifications in Equine Dentistry
Rationale	Prior to any Training Package development being undertaken regarding equine dental, research needs to be undertaken to determine the parameters that a Equine Dental Service Provider’s scope of practice is limited to.
Ministers’ Priorities Addressed:	<p>Minister’s priorities addressed in the project include:</p> <ul style="list-style-type: none"> • ensuring that new training courses can be developed as quickly as industry needs them and available to support niche skill needs • ensuring that more information about industry’s expectations of training delivery is available to training providers to improve their delivery, and to consumers to enable more informed course choices.
Consultation Plan	<p>Subject matter experts to be consulted:</p> <ul style="list-style-type: none"> • Belinda Smith, Animal Care and Management IRC • Prof. Gary Wilson, Animal Care and Management IRC • Dr Tim Mather, Animal Care and Management IRC • Jon Ingersole, Worldwide Association of Equine Dentistry • Mark Burnell, Equine Dental Association of Australia • Mark Dobson, TAFENSW • Dale Wearing, International Association of Equine Dentistry (Australian Chapter) • Ian Wharton, College of Equine Dentistry Australia • Dr Steven Roberts, President ACT Veterinary Surgeons Board • Dr Saraih Werry • Representatives of: <ul style="list-style-type: none"> ○ Australian Veterinary Association ○ Equine Veterinary Association. ○ Equine Dental Vets industry group

Scope of Project**Timeline**

- 1–7 June: Project planning and location booking
 - 1–30 July: Subject matter expert meetings, research and functional analysis
 - 1–30 August: Development of Draft 1 documents
 - 1–30 September: Public consultation – via website and public workshops
 - 1-31 October Subject Matter Expert meetings
 - 1-30 November Drafting of final version research paper
 - 1-15 December Industry Reference Committee sign off
 - 30 December Submission to the AISC
-

Project title: Animal Technology Review**Description**

Review two animal technology qualifications to ensure best practice and high-level ethical practice.

Rationale

Feedback has been received from the Australian and New Zealand Laboratory Animal Association (ANZLAA), the peak body for the Animal Technology industry, that the current units of competency are not fit for purpose.

The content of the units is not suitable for quality training; and the units are not ethically suitable, as they require too many animals to be euthanised during the undertaking of the units.

Full review of the qualifications is needed to ensure that quality training does not impose unethical practice.

Ministers' Priorities Addressed:**Minister's priorities addressed in the project include:**

- fostering greater recognition of skill sets
- ensuring that new training courses can be developed as quickly as industry needs them and available to support niche skill needs.

Consultation Plan**Subject matter experts to be consulted:**

- Dr Tim Mather, ACM IRC (Animal Technology) representative
 - Members of ANZLAA Education Committee
 - Representatives of:
 - Animal Resources Centre
 - CSIRO
 - Animal DNA Laboratory
-

-
- State and territory Department of Primary Industry Biosecurity/Animal Ethics committees (e.g. <https://www.animaethics.org.au/>)
 - University research laboratories.
-

Scope of Project

Timeline

1–7 June: Project planning and location booking

1–30 July: Subject matter expert meetings, research and functional analysis

1–30 August: Development of Draft 1 documents

1–30 September: Public consultation – via website and public workshops

1–30 October: Development of Draft 2 documents

1–30 November: TBA second public consultation via website and targeted subject matter expert meetings

1 December–15 January: Final drafting of documents

1–14 February: Public validation via website

16 February–30 March: Finalisation of documents, including Case for Endorsement

25–30 April: Proofreading of documents

3–10 May: Edit and Equity Review

14–16 May: IRC Case for Endorsement Approval to submit for Quality Assurance review

30 May–6 June: Quality Assurance evaluation

8–22 June: State/Territory Training Authority Review

25–29 June: Industry Reference Committee final sign-off

30 June: Submission to Australian Industries Skills Committee

Animal Care and Management Training Package

2 qualifications to be revised:

- ACM30217 Certificate III in Animal Technology
- ACM50117 Diploma of Animal Technology

2 skill sets to be developed/revised:

- Aseptic Surgery
- Animal Research Ethics Committee

12 units of competency to be revised:

- ACMATE301 Work within an animal technology facility
-

- ACMATE302 Carry out institution containment and exclusion procedures
- ACMATE303 Prepare for and monitor anaesthesia in animals
- ACMATE304 Conduct non-surgical procedures on animals
- ACMATE305 Conduct euthanasia of research animals
- ACMATE501 Manage compliance in animal technology
- ACMATE502 Manage and maintain the health of research animals
- ACMATE503 Carry out post-mortem examination of a research animal
- ACMATE504 Administer anaesthesia and perform surgery on animals for science
- ACMATE505 Carry out advanced breeding procedures
- ACMATE506 Assist to collect and transfer embryos of mice
- ACMATE507 Manage the parturition of transgenic mice or rats

5 units of competency to be developed:

- Undertake aseptic surgery
- Assist researchers with aseptic surgery
- Manage aseptic surgery requirements for research
- Undertake animal research proposal ethical assessment
- Monitor ethical animal use in research

Title of project: Pet Styling and Grooming

Description Full review of pet styling and grooming qualifications to ensure best practice standards for the industry.

Rationale Industry feedback is there is too much inconsistency in the pet grooming training. Due to there being no legislative requirement for a pet groomer to undertake any form of training, many are choosing to undertake lower AQF level skills or forgo training altogether.

To improve the industry, higher and more consistent standards should be developed to ensure the care of animals. This includes:

- Removal of the Certificate III in Pet Grooming, with the skills embedded into the Certificate IV in Pet Styling. Certificate IV in Pet Styling would then be the entry level for the industry
- Development of skill set/s for higher level skills to build on qualification; e.g. skills in breed-specific/competition grooming
- New units for basic skills in clipping and scissoring prior to using them on live animals

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- Full review of all relevant units.
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Ministers' Priorities Addressed:

Minister's priorities addressed in the project include:

- ensuring obsolete and superfluous qualifications are removed from the system
 - fostering greater recognition of skill sets
 - ensuring that new training courses can be developed as quickly as industry needs them and available to support niche skill needs
 - ensuring that more information about industry's expectations of training delivery is available to training providers to improve their delivery, and to consumers to enable more informed course choices.
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Consultation Plan

Subject matter experts to be consulted:

- Brenton Myatt, ACM IRC Member
 - Yasmyn Robinson, PETstock
 - David Young, Pet Industry Association of Australia (PIAA)
 - Natalie West, Dog Diversity (Vic)
 - Representatives from:
 - Dog Groomers Association of Western Australia (<http://www.dgawa.com.au/>)
 - Dog Grooming Australia (<http://www.doggroomingaustralia.com.au/>)
 - Various dog grooming enterprises of varying sizes that express interest via the Skills Impact website.
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Scope of Project

Timeline

- 1–7 June: Project planning and location booking
 - 1–30 July: Subject matter expert meetings, research and functional analysis
 - 1–30 August: Development of Draft 1 documents
 - 1–30 September: Public consultation – via website and public workshops
 - 1–30 October: Development of Draft 2 documents
 - 1–30 November: TBA second public consultation via website and targeted subject matter expert meetings
 - 1 December–15 January: Final drafting of documents
 - 1–14 February: Public validation via website
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16 February–30 March: Finalisation of documents, including Case for Endorsement

25–30 April: Proofreading of documents

3–10 May: Edit and Equity Review

14–16 May: IRC Case for Endorsement Approval to submit for Quality Assurance review

30 May–6 June: Quality Assurance evaluation

8–22 June: State/Territory Training Authority Review

25–29 June: Industry Reference Committee final sign-off

30 June: Submission to Australian Industries Skills Committee

Animal Care and Management Training Package

2 qualifications to be reviewed:

- ACM30617 Certificate III in Pet Grooming (<https://training.gov.au/Training/Details/ACM30617>)
- ACM40617 Certificate IV in Pet Styling (<https://training.gov.au/Training/Details/ACM40617>)

TBA skill sets to be developed:

- Undertake breed-specific grooming

9 units of competency to be revised:

- ACMCAS306 Provide grooming services for companion animal comfort
- ACMCAS307 Provide companion animal hydro-bathing services
- ACMCAS407 Provide professional companion animal grooming services
- ACMCAS408 Manage the operation of a mobile hydro-bathing facility
- ACMGRM301 Perform dog grooms on different coat types
 - Specific coat types to be stated in unit:
 - wire
 - double
 - long
 - short
- ACMGRM302 Perform a cross breed clip
- ACMGRM404 Provide creative styling for dogs
- ACMGRM405 Carry out styling on cats of different breeds and coat types

- ACMGRM406 Carry out breed standard styling on dog breed groups

TBA units of competency to be developed:

- Introduction to pet scissoring
 - Introduction to pet clipping
 - Breed-specific grooming units
 - Dog bathing unit
 - Competition grooming for specific breeds styles such as:
 - Poodle
 - Terrier
 - Salon freestyle
 - Gundog
 - Purebred scissor
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