

ANIMAL CARE AND MANAGEMENT INDUSTRY SECTOR

IRC Work Plan 2016 - 2019

Prepared on behalf of the Rural and Related Industries Industry Reference Committee for the
Australian Industry Skill Council

THE RURAL AND RELATED INDUSTRIES INDUSTRY REFERENCE COMMITTEE ANIMAL CARE AND MANAGEMENT WORK PLAN 2016 - 2019

Purpose

This workforce development and skills needs analysis represents the latest industry intelligence and resulting work plan of the Rural and Related Industries 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 and Skills Council's (AISC) four-year rolling National Schedule of training product development and review work.

The industry intelligence component covers the following topics:

Sector Overview

An analysis of the depth and breadth of the industry and identification of the macro environmental forces that currently challenge and/or provide opportunities for the industry

Employment

Review of employment projections by the Department of Employment and an outline of the current workforce profile and supply for the industry

Skills Outlook

Provides insights into the key trends that could potentially drive changes in workplace design and identification of key priority skills and skilled labour shortages for the industry.

The *IRC Training Product Review Plan 2016 – 2019 for the Animal care and Management Industry Sector* reports and various points of engagement with industry associations, employers and training providers.

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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 and 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 the Australian households owning pet (Australia already has one of the highest rates of pet ownership in the world) and demand for veterinary and associated value-add services.

The report describes that the industry workforce for some sub-sectors, consistent with many other industry sectors, is reaching the retirement age in higher numbers, creating significant challenges for employers – particularly in respect to their ability to attract people to the industry and develop their skills through on the job learning and formal training.

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. This occurs because businesses respond to opportunities with:

- a greater focus on understanding possible future animal health scenarios caused by climate change and changes in ecosystems
- management approaches combining public health, veterinary and ecological expertise; intensified animal health surveillance for suspect notifiable disease
- growing attention to aquatic animal health through national initiatives
- a greater focus on improving digital experiences and information solutions to make it easier for customers to connect with zoos, wildlife parks and sanctuaries and aquariums, among many other innovations.

Examples of high level skills include a range of skills in the Science Technology Engineering and Mathematics (STEM), compliance, and leadership areas.

The report also identifies the emergence of new generation experts that complement veterinary services, specialising in areas of physiotherapy, acupuncture, rehabilitation and other value-added services for animals.

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 business providing pet care services, up to 100 wildlife operations, which include 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 11,072 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: *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 occupations are that of veterinarians who must register with the state or territory Veterinary Registration Board. The registration become their licence to practice as a veterinarian¹
- Key macro forces which currently challenge and provide opportunities for the industry sectors include:
 - The Australian Government's Australian Veterinary Reserve (AVR), which provides ongoing opportunities for the veterinary sector through government funded participation of private practitioners in the AVR.
 - Federal and state government policies, which commit funds in effort to combat invasive species, provide opportunities for the hunting sector; and provide development opportunities for most wildlife operation sector through non-taxable services.
 - Growth in pet ownership by Australian households and the availability of more expensive and advanced treatments for serious illnesses, which can lift the demand for veterinary services and other pet services, (such as pet insurance and pet welfare), as the life expectancy of animals grows. Demand has also created specialisation in the sector, such as animal oncology, cardiology and dentistry.
 - Demand of veterinary services from the rural / farm animal segment, which is persistently low and represents a challenge for the sector due to lack of trust in services, lack of awareness about the potential contribution vets could make to herd health and productivity and low paying capability for veterinary services.
 - Existing and ongoing development of enabling technologies, which allows for greater diagnosis, prevention and control of infectious diseases of animals, rapid-prototyping of broken bones, better animal tracking and monitoring through computer and mobile apps and devices. Examples of enabling technologies include biotechnological and molecular approaches, new veterinary vaccines and treatments, 3-D printing, and GPS-based technologies.

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.

Employment

- Employment growth is anticipated for the veterinary and hunting sectors in the coming years. Although employment growth is anticipated the Australian Veterinary Association has a Workforce Study which 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 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

- The trends in skills demand include:
 - Higher level and value-added skills, which are driven by 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.
 - Greater collaboration, communication and engagement skills for private and government veterinary operators and technicians involved in targeted and national animal health surveillance programs, (i.e. to ensure that relevant information is readily available for assessing and to manage associated risks).
 - The emergence of a new generation of experts that complement veterinary services, specialising in the following areas: physiotherapy, acupuncture, rehabilitation and other value-added services for animals.
- Current skill priorities in the industry include a range of skills in the horse care (riding) area, veterinary nursing, crime prevention, and current practices and skill needs for animal control and regulation for large animal incident response, equine dentistry, infection control, and veterinary practices including microchip.

Skills outlook

Current skill needs priority in the industry include:

DRIVER	SKILLS OUTLOOK	TRAINING PACKAGE PROJECT
Roles of veterinary nurses have evolved over the last few years in response to technological advances, government regulations and compliance	Skills required in contemporary veterinary practices and compliance.	Industry feedback indicates that the current Cert IV Veterinary Nursing needs reviewed. Issues raised with many Certificate II Animal Studies are also embedded in the Cert IV Veterinary Nursing Industry identified a skills gap in Animal Physiology Development of Skill Set in: <ul style="list-style-type: none">• Remote Veterinary Nursing using digital technology

Increased awareness needed by industry of Q fever, Hendra Virus and the potential for other exotic viruses are some of the associated risks in dealing with animals as a Veterinary Nurse.	Greater collaboration, communication and engagement skills for private and government veterinary operators and technicians involved in targeted and national animal health surveillance programs (i.e. to ensure that relevant information is readily available for assessing and to manage associated risks).	Development of Skills Sets: <ul style="list-style-type: none"> • Unpacking government policy • Stakeholder engagement • Animal health surveillance programs.
The emergence of a new generation of experts that complement veterinary services, specialising in a range of new therapies	Identified Skills in the following areas: physiotherapy, acupuncture, rehabilitation and other value-added services for animals.	Qualifications at AQF level III & IV <ul style="list-style-type: none"> • Animal rehabilitation • Animal physiotherapy • Acupuncture in animals
Increases in the ownership of companion animals requires a workforce that is sensitive to customer's needs. Some duties performed may be automated or digitized to reduce waiting times. Making it easier for customers to connect with zoos wildlife parks is considered important. Remote areas not serviced by full time Vets are using technology to assist nurses and customers.	Higher level and value-added skills, which are driven by 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 captive animal sectors jobs.	Development of Skills Sets: <ul style="list-style-type: none"> • Digital pet care solutions • Using CRM • Digitising animal information • Connecting with customers
Recommendations from the 2015 ASQA <i>Review of Training in Equine Programs</i> .	Skill priorities in the industry include handling and riding horses.	Review the Certificate II in Horse Care (Riding). Review the following units of competency: <ul style="list-style-type: none"> • <i>Ride educated horses to carry out stock work</i> • <i>Handle horses</i> • <i>Develop horse riding skills at walk and trot</i> • <i>Perform basic (controlled) horse riding skills at walk, trot and canter</i>
Increasing focus on understanding possible future animal health scenarios caused by climate change and changes in ecosystems; management approaches combining public health, veterinary and ecological expertise, surveillance and response for combating emerging infectious diseases	Current practices and skill needs for animal control and regulation for large animal incident response.	Review of all units in the following sectors: <ul style="list-style-type: none"> • Animal control and regulation (ACR) • Animal technology (ATE) • Captive animals (CAN) New units: <ul style="list-style-type: none"> • Drone operation • GIS and mapping

		<ul style="list-style-type: none"> • Read and interpret GIS data • GPS data collection
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A. ADMINISTRATIVE INFORMATION

Name of Applicable Industry Reference Committee (IRC)	Rural and Related Industry Reference Committee
Name of Applicable Skills Service Organisation (SSO)	Skills Impact Ltd

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.² 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
- *Captive Wildlife Operations*, including zoo, 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*

Based on ABS statistics, this sector included 3,145 veterinary facilities in 2015³. The veterinary sector provides direct employment to more than 16,857 people⁴. Estimates also show there are 11,072 registered veterinarians in Australia, working for government agencies, laboratories and universities, or providing specialised services as private practitioners or in other organisations.⁵

Australian livestock breeding community is large, comprising of 44 cattle breed societies and a substantial number of registered cattle breeders⁶; around 600 registered sheep breeders producing 22 different sheep breeds⁷; other livestock breeding enterprises; and 3,483 horse breeders producing Thoroughbred horses and other horse breeds for racing and a variety of other activities⁸.

The sector also includes about 4,000 pet grooming businesses⁹ and many other specialist business providing pet care services; up to 100 wildlife operations, which include zoos, wildlife parks and aquariums¹⁰ and employ up to 3,000 people¹¹; 587 hunting and trapping business operators, the

² Animal Health Australia (2015). Animal Health in Australia 2014, Canberra, Australia.

³ Australian Bureau of Statistics, *Counts of Australian businesses, including entries and exits*, June 2015, Cat No 816502.

⁴ Australian Bureau of Statistics, *2011 Census of Population and Housing*.

⁵ Animal Health Australia (2015). Animal Health in Australia 2014, Canberra, Australia.

⁶ Australian Registered Cattle Breeders' Association, 2012 Australian Beef Cattle Registrations. [www]
<http://arcba.une.edu.au/ARCBA2012RegistrationReportRev.pdf>

⁷ Australian Stud Sheep Breeders Association Limited, Australian Flock Register Volume 107 – 2015 [www]
http://www.assba.com.au/edit/Flock_Books/2015%20ASSBA%20Flock%20Book.pdf?5-10-2015%202:35:53%20PM

⁸ Australian Bureau of Statistics, *Counts of Australian businesses, including entries and exits*, June 2015, Cat No 816502.

⁹ <http://petsaustralia.org/pet-jobs-and-pet-businesses/so-you-want-to-be-a-pet-or-dog-groomer/>

¹⁰ ABS, *Counts of Australian Businesses, including entries and exits*, June 2015, Cat No 816502

¹¹ Australian Bureau of Statistics, *2011 Census of Population and Housing*.

majority of which are small-scale non-employed operations¹²; and around 300,000 recreational hunters¹³.

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

- Industry Value Added of the veterinary sector, which increased by 2.5% to \$1.7 billion between 2014 and 2015; and a total sales turnover, which increased by 1.8% to \$2.5 billion during the same period ¹⁴
- Total sales turnover of the zoological sector, which totalled \$788 million in 2015¹⁵ (this includes also botanical gardens operations)
- Companion animal services, which contributes \$8.0 billion annually to the Australian economy¹⁶. This value includes the trade in companion animals, pet food, accessories, veterinary services and a range of other per care services
- Recreational hunting, which contributes \$1 billion annually into the Australian economy¹⁷.

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 QUALIFICATIONS

Qualification Level: Certificate I

Certificate I in Animal Studies

Certificate I in Horse Care

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 Animal Studies

Certificate III in Horse Breeding

Qualification Level: Certificate IV

Certificate IV in Companion Animal Services

Certificate IV in Pet Styling

¹² ABS, Counts of Australian Businesses, including entries and exits, June 2015, Cat No 816502

¹³ Finch N., Murray P., Hoy J., and Baxter G., 2014, Expenditure and motivation of Australian recreational hunters. Wildlife Research 41(1) 76-83

¹⁴ Professionals Australia, Veterinary Services. [www] http://www.professionalsaustralia.org.au/wp-content/uploads/2015/08/VET_INFORMER_v1.pdf

¹⁵ IBIS World, 2015, Zoological and Botanical Gardens in Australia

¹⁶ Animal Health Alliance, 2013, Pet Ownership in Australia [www] <http://animalmedicinesaustralia.org.au/wp-content/uploads/2014/08/Pet-Ownership-in-Australia-2013-Summary-ONLINE-VER.pdf>

¹⁷ Finch N., Murray P., Hoy J., and Baxter G., 2014, Expenditure and motivation of Australian recreational hunters. Wildlife Research 41(1) 76-83

Certificate IV in Captive Animals
 Certificate IV in Equine Dentistry
 Certificate IV in Veterinary Nursing
 Certificate IV in Animal Control and Regulation
 Certificate IV in Horse Breeding

Qualification Level: Diploma

Diploma of Veterinary Nursing (Surgical)
 Diploma of Veterinary Nursing (Dental)
 Diploma of Animal Technology
 Diploma of Veterinary Nursing (Emergency and Critical Care)
 Diploma of Veterinary Nursing (General Practice)
 Diploma of Horse Stud 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 are provided in rural and urban communities and include a range of services to treat companion, farm animals and horses. Examples of species specific services include cattle vets, sheep vets, pig vets, poultry vets, equine vets and equine dental veterinarians. In urban areas mostly companion animals are treated and there is an increase in specialist services. 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 diseases (EAD) outbreak.
Companies	<p>The Australian Government is the largest employer of veterinarians, employing 614 registered veterinarians.¹⁸ In addition, in 2015 there were 3,145 practices operating in the veterinary services sector in Australia, of which 33% were non-employing.¹⁹ 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 also into 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

¹⁸ Animal Health Australia (2015). Animal Health in Australia 2014, Canberra, Australia.

¹⁹ ABS, Counts of Australian Businesses, including entries and exits, June 2015, Cat No 816502

Sub-Sector Name	Veterinary Services
	<ul style="list-style-type: none"> • Vetwest Animal Hospitals • Healthscope Ltd • IDEXX Laboratories Pty Ltd (subsidiary of US-based IDEXX Laboratories Inc).
Location	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.
Automation and Digitisation	<p>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.</p> <p>In some rural locations vets provide service via online technology and fly in fly out services.</p> <p>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.</p>

Sub-Sector Name	Animal Breeding Services
Scope Of Work	<p>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:</p> <ul style="list-style-type: none"> • 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. ²⁰ Similarly,

²⁰ Australian Registered Cattle Breeders' Association, 2012 Australian Beef Cattle Registrations. [www]
<http://arcba.une.edu.au/ARCBA2012RegistrationReportRev.pdf>

Sub-Sector Name	Animal Breeding Services
	<p>approximately 600 sheep breeders were registered with the Australian Stud Sheep Breeders Association in 2015.²¹</p> <p>In addition, there were 3,483 horse farming enterprises in Australia in 2015, the majority of which are small-scale non-employing operators.²² Only a small number of enterprises employ people to support horse farming operations.</p> <p>Major horse breeding enterprises²³</p> <ul style="list-style-type: none"> • Darley Australia Pty Ltd (foreign ownership) (VIC) • Arrowfield Group (NSW) • Coolmore Australia (subsidiary of Irish-based company) (NSW) • Vinery Stud (NSW) • Chatswood (VIC) • Glenlogan Park (NSW) • Oaklands, (NSW) • Lyndhurst (NSW) • Raheen • Willowbend (NSW) <p>The sector also integrates a substantial number of pet breeding establishments, which can be smaller scale breeders and large commercial breeders.</p> <p>Breeding programs are also undertaken by most Australian zoos and wildlife parks for the conservation of endangered animals.</p>
Location	<p>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.</p> <p>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.</p> <p>Pet breeding establishments are generally located in the urban areas of large cities across Australia.</p>
Sub-Sector Name	Pet and Companion Animal Services
Scope of Work	<p>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</p>

²¹ Australian Stud Sheep Breeders Association Limited, Australian Flock Register Volume 107 – 2015 [www]
http://www.assba.com.au/edit/Flock_Books/2015%20ASSBA%20Flock%20Book.pdf?5-10-2015%202:35:53%20PM

²² Australian Bureau of Statistics, Counts of Australian businesses, including entries and exits, June 2015, Cat No 816502.

²³ Enterprises listed according to market share or significance in the sector.

	includes animal shelter establishments which takes in and cares for lost, injured, stray or unowned dogs and cats.
Companies	<p>It is estimated that there are around 4,000 pet grooming businesses in Australia²⁴, 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>
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.

Sub-Sector Name	Animal Technology
Scope of Work	Animal technology is a specialist profession responsible for the care and welfare of laboratory animals. It helps develop treatments for diseases, new methods of diagnosis and carries out scientific research. Universities and scientific institutions, employ many animal technicians with the qualification 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.
Organisations	Medical research facilities are some of the largest employers of animal technicians across Australia. Employers also include Universities, CSIRO, hospitals, TAFEs. The Australia and New Zealand Laboratory Animals Association represents the industry.
Geographical Location	Nationally the Animal Technology sector encompasses positions such as laboratory animal carer and laboratory animal researcher. The range of locations varies across States.

²⁴ <http://petsaustralia.org/pet-jobs-and-pet-businesses/so-you-want-to-be-a-pet-or-dog-groomer/>

Sub-Sector Name	Captive Wildlife Operations
Scope of Work	<p>This sector comprises businesses and organisations that operate:</p> <ul style="list-style-type: none"> • Zoos, wildlife parks and sanctuaries • Aquariums • Animal circuses and other mobile animal displays
Organisations	<p>There were 107 certified public and private zoos, aquariums, wildlife parks and sanctuaries in Australia in 2009²⁵. These include:</p> <ul style="list-style-type: none"> • 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. <p>Main organisations</p> <ul style="list-style-type: none"> • 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.
Geographical Location	<p>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.</p>
Automation and Digitisation	<p>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, 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. In addition, fixed-wing aircraft, helicopters and other techniques are used to control and fight fire.</p> <p>Zoo operators use breeding and national and international 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).</p>

²⁵ Zoo and Aquarium Association, 2009, Report on the Economic and Social Contribution of the Zoological Industry in Australia [www] <http://www.zooaquarium.org.au/index.php/press-releases/reference-materials/>

Sub-Sector Name	Hunting And Trapping
Scope of Work	<p>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.</p> <p>Hunting is restricted to species that can be legally hunted in Australia and includes feral animals and game animals. Most are classified as feral or pest animals which can be hunted any time. Others are classified as game animals where they are managed as a resource in regulated seasons and bag limits apply.</p> <p>Hunters are also involved in providing assistance to farmers by undertaking wildlife management activities.</p>
Organisations	<p>In 2015 there were 587 hunting and trapping businesses in Australia. Of these, 497 (84%) were non-employing companies and 90 (26%) employed fewer than 20 people.²⁶ In addition, there are around 300,000 active hunters involved in recreational hunting²⁷.</p>
Geographical Location	<p>Hunting and trapping operations in Queensland (251 practices) and New South Wales (174 practices) account for 72% of all hunting and trapping operations. In Western Australia, Victoria and South Australia there are up to 50 hunting and trapping operations.²⁸</p>

²⁶ Australian Bureau of Statistics, Counts of Australian businesses, including entries and exits, June 2015, Cat No 816502.

²⁷ Finch N., Murray P., Hoy J., and Baxter G., 2014, Expenditure and motivation of Australian recreational hunters. Wildlife Research 41(1) 76-83

²⁸ Australian Bureau of Statistics, Counts of Australian businesses, including entries and exits, June 2015, Cat No 816502.

Relevant Stakeholders

The animal care and management industry sector is represented by 38 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 breeds.

Table 1: Peak Industry Sector Organisations

CATEGORIES	GEOGRAPHICAL REPRESENTATION
REGULATORY BODIES	
Australasian Veterinary Boards Council	NATIONAL
INDUSTRY SUB-SECTOR ASSOCIATIONS	
VETERINARY SERVICES	NATIONAL
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	NATIONAL
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 & Grooming Queensland	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
OTHER ANIMAL HEALTH & 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 Managers Association Australia	NATIONAL
Veterinary Practitioners Registration Boards	NATIONAL

Industry and Occupational Regulations and Standards

Industry Regulations and Standards

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 the 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* (Cth).

State and territory government animal welfare legislations include:

- *Animal Welfare Act 1992* (ACT)
- *Prevention of Cruelty to Animals Act* (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 and limiting the number of cats and dogs per household and compulsory sterilization 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

- *Federal Gene Technology Act*
- *AS/NZS 2243.3:2002: Safety in laboratories – Microbiological aspects and containment facilities*
- *The 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*
- *Federal quarantine Act 1908 and Regulations 2000*
- *The 3Rs – 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 crossbred 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 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 it 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.²⁹

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 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*.

Australian Government regulates the import and export of plants and animals (alive, dead, or parts) through two agencies:

The Biosecurity Services Group of the Department of Agriculture, Fisheries and Forestry (DAFF) which integrates the functions of the Australian Quarantine and Inspection Service (AQIS); Biosecurity Australia (BA); the biosecurity parts of Product Integrity, Animal and Plant Health division; and the Quarantine and Biosecurity Policy Unit.

The Department of Sustainability, Environment, Water, Population and Communities (SEWPaC), which is responsible for 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

²⁹ NSW Young Lawyers Animal Law Committee, 2015, Companion Animal Breeding Practices in NSW. [www]
<https://www.lawsociety.com.au/cs/groups/public/documents/internet/younglawyers/1036875.pdf>

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 (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

Australian Meat and Livestock Industry Act 1997 and the *Export Control Act 1982*, are the two Acts that cover live animal export and they are administered by Biosecurity Australia.

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 licence 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 a range of policy frameworks at state, national and international levels, market factors and technology developments. Challenges and industry's opportunities for growth are discussed below. However, the outlook for the Australian animal care and management sector is strong, being highlighted by an increased demand in animal health and welfare services as this is driven by the increasing humanisations of our pets and calls for 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 state governments to strengthen legislations and policies covering animal welfare and overseeing the maintenance of the industry standards.

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.

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.

Similarly, state governments commit funds in effort to combat invasive species which present opportunities for the hunting sector. A recent example is the Victorian Government that will allocate \$11 million in baiting, hunting and trapping programs in the 2016-2017 Budget.

Market

Australia has one of the highest rates of pet ownership in the world.³⁰ Population growth and rising disposable income is expected to lead to a further growth in the Australian households owning pet, which require veterinary and other services over the next decade. Availability of more expensive treatments and application of advanced treatments for broken bones and serious illnesses is also expected to lift the demand for veterinary services and other pet services such as pet insurance and pet welfare, as the life expectancy of animals is growing. However, trends such as growing popularity of urban apartment living and the household shift from housing affordability towards renting may limit a potential growth in pet numbers in Australia as many of these locations prohibit pets. There are market opportunities for the industry participants to sustain revenue growth, yet this will require a continued promotion of value-added services.

Greater challenges for the veterinary sector are provided by the demand from the rural / farm animal segment and their paying capability for veterinary services. At farm level, a cost-effective approach for veterinary intervention is influenced by the number of sales and prices for livestock or yearlings sold by breeders. However, growth in international trade driven by rising demand for Australian animal products abroad may stimulate the demand for veterinary services in the rural areas in the future.

Another major issue affecting veterinarians in rural areas is the attitudes of farmers towards veterinary services. There was some reluctance among farmers to use vets and a lack of awareness among farmers of the potential contribution vets could make to herd health and productivity.³¹ Opportunities for veterinarians in rural areas consist of actively selling their services, educating farmers in efficient herd management, which has the potential to improve the health and productivity of production animals, limiting devastating diseases and potentially improving the profitability of farms.³²

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, MIR, 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 is making significant inroads into the industry, creating new opportunities. Similarly, fast adoption of 3-D printing in the industry for rapid-prototyping of bones to enable vets and surgeons to have a solid grasp of a patient's internal bone or muscle structure before going in to operate. Further, new technologies include GPS-based technologies for animal tracking and monitoring through computer and mobile apps and devices; 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.

³⁰ Animal Health Alliance, 2013, Pet Ownership in Australia

³¹ The Australian Veterinary Association Ltd, 2013, Australian veterinary workforce review report

³² Professionals Australia, Veterinary Services

C. EMPLOYMENT

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, employment growth is anticipated in both veterinary (11.2%) and hunting (6.0%) sectors over the coming years (Table 2).

Table 2: Department of Employment Industry Projections – Five Years to November 2019³³

Industry Sector	Employment Level	Employment Projections		
	Nov 2014 ('000)	Nov 2019 ('000)	Growth ('000)	(%)
Veterinary Services	19.9	22.1	2.2	11.2
Animal Breeding	-	-	-	-
Pet and Companion Animal Services	-	-	-	-
Captive Wild Animal Operations	-	-	-	-
Hunting and Trapping	1.4	1.5	0.1	6.0
Total	21.3	23.6	2.3	10.8

Description of Workforce Supply

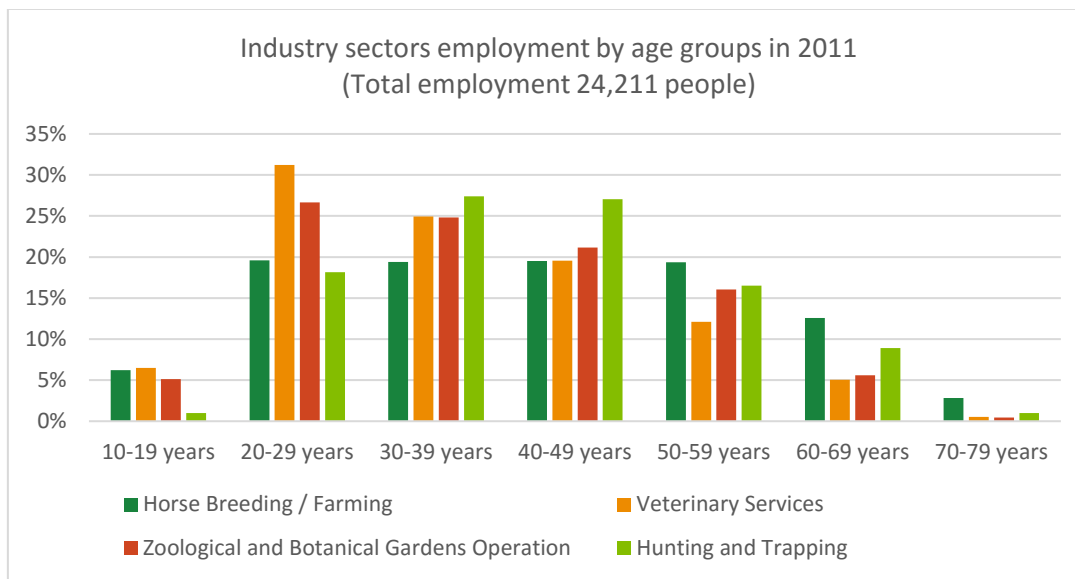
The animal care and management industry sector is a significant employer of people in both regional and urban areas. ABS stats indicate (for sectors where data is available) that the industry workforce is aging, presenting businesses with the challenge of an oncoming wave of retirement (Figure 1).

Particularly, the horse breeding and hunting sectors employ a significant number of people aged between 60 and 80 plus years and a smaller number of people in the age group 20 to 30 years. A younger workforce is exhibited in the veterinary services sector. However, industry reports suggest that there is some imbalance between vet numbers in rural and urban locations, with ongoing scarcity of vets in rural areas. While almost two thirds of graduates find their first employment in rural areas, a large portion move back within ten years.³⁴

³³ Department of Employment, Industry Employment Projections, 2015 Report. Release date: March 2015. <http://lmip.gov.au/default.aspx?LMIP/EmploymentProjections>

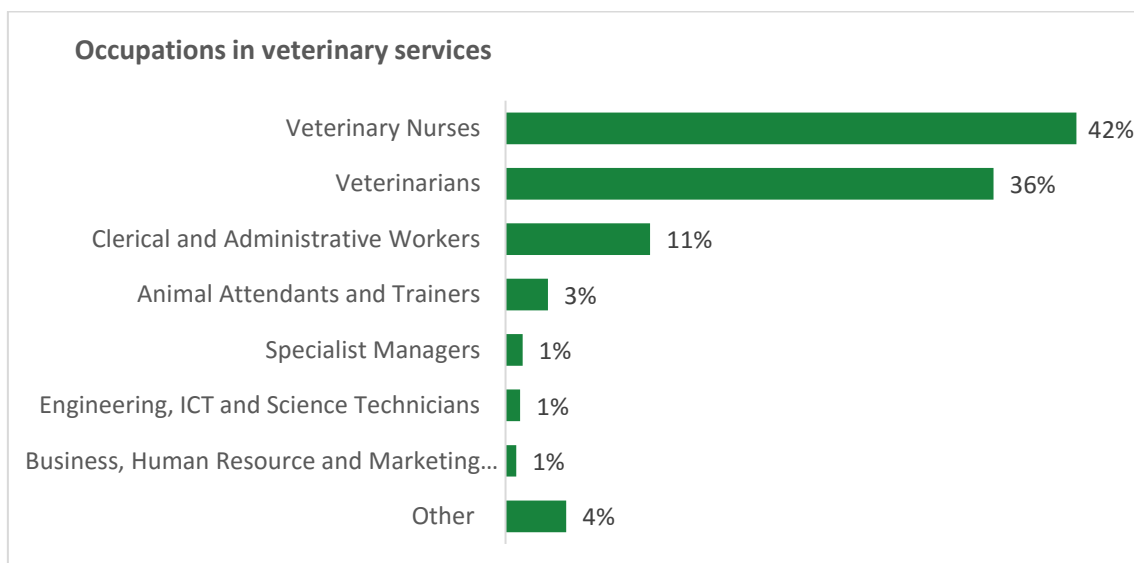
³⁴ Professionals Australia, Veterinary Services

Figure 1: Industry Sector Employment by Age Groups in 2011³⁵



Current employing occupations in the animal care and management industry sector include professions that are configured in Figure 2 to Figure 5 below. While ABS stats are not inclusive of all occupations in the sector, there are many other jobs working with animals. These include animal attendant, kennel worker, groomer, dog walker/pet sitter, animal behaviourist and animal trainer, among others.

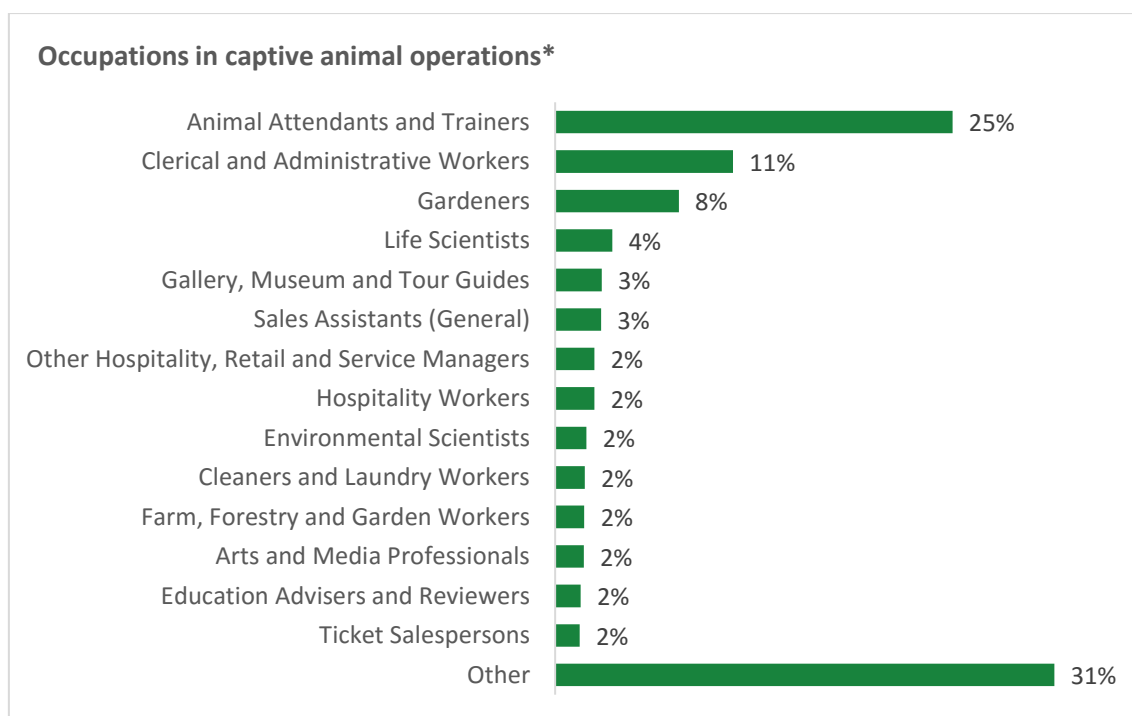
Figure 2: Occupations and their Relative Number in the Veterinary Services Sector³⁶



³⁵ 2011 Census of Population and Housing

³⁶ 2011 Census of Population and Housing

Figure 3: Occupations and their Relative Number in the Captive Animal Operations Sector³⁷



*The list includes also occupations in the botanical gardens sector

³⁷ 2011 Census of Population and Housing

Figure 4: Occupations and their Relative Number in the Horse Breeding/Farming Sector³⁸

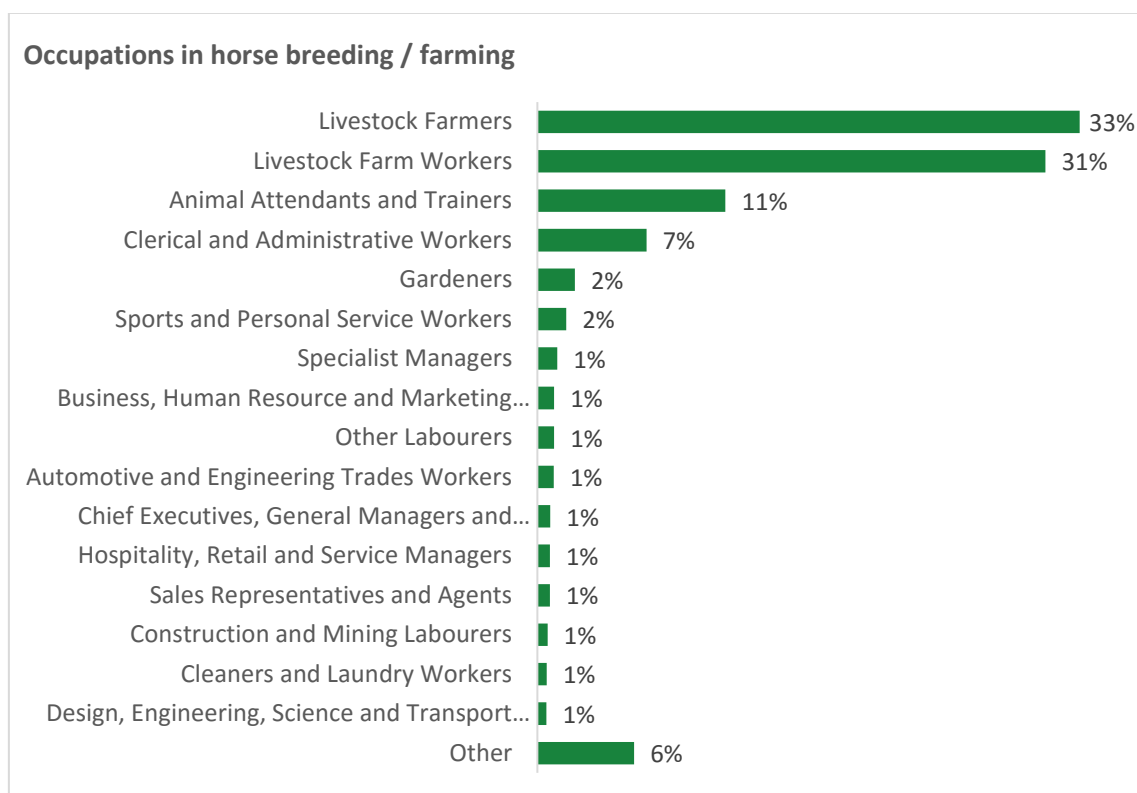
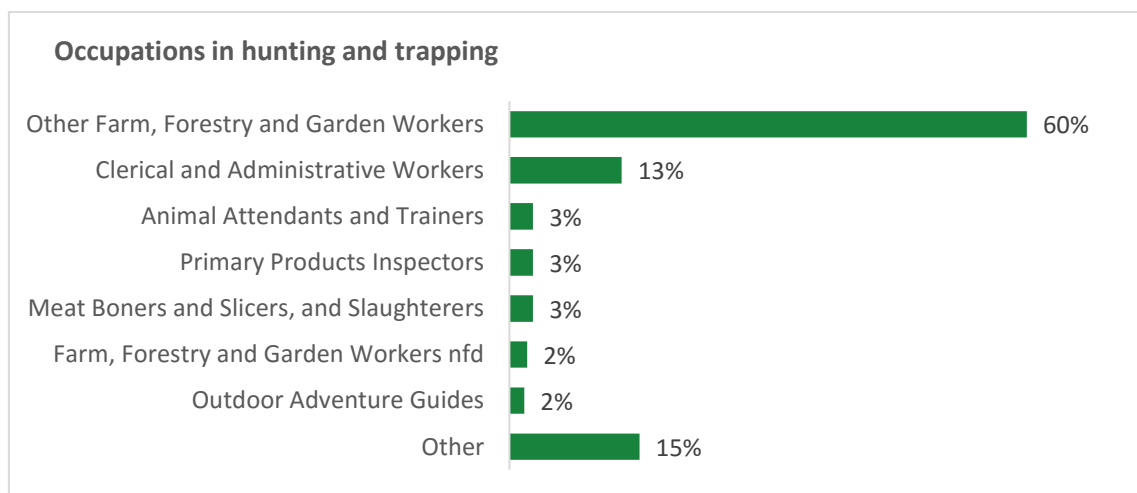


Figure 5: Occupations and their Relative Number in the Hunting and Trapping Sector³⁹



As shown, a significant number of the workforce occupies roles specific to the industry including veterinary nurses and veterinarians, animal attendants and trainers 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.

³⁸ 2011 Census of Population and Housing

³⁹ 2011 Census of Population and Housing

Workforce supply in the veterinary sector is normally provided annually by the number of graduates and registered practitioners through professional accreditation structures. For most other skilled areas, learning occurs largely 'on the job' through workforce development activities provided by employers. This occurs because gaining industry specific qualifications before employment commences remains a limited choice amongst the young people and other potential new entrants. Thus, external supply of skilled workers is consistently low in the industry. In these conditions, the responsibility for engaging young people and existing workers with the sectors, and in specialist training, resides solely with employers.

D. SKILLS OUTLOOK

Future changes in workplace and job design are generally driven by innovation at the business and industry level, introduction of new policies and legislations, and business challenges.

At the business level, innovation may involve introduction of new or improved technologies and processes, new or improved ways to deliver services, and new work organisation, including new job demands and job control (i.e. more complex and diversified tasks involving greater autonomy). Work organisation also involves a better interaction between internal and external stakeholders through integration of supportive technologies.

Trends in Workplace Design /Job Design⁴⁰

At a higher level, value-added skills will be driven by 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. Skills to adapt and respond to outgrowing government policies, industry code of practices and WHS procedures will grow in importance as well.

In addition, greater collaboration, communication and engagement skills will be required from private and government veterinary operators and technicians involved in targeted and national animal health surveillance programs to ensure that relevant information is readily available for assessing and to manage associated risks. Also, collaborating with, or working within, public health, environmental agencies, physicians, ecologists, economists, social scientists and planners will be critical to identify possible future animal health scenarios posed by climate change and how ecosystem changes.

A new generation of experts specialising in areas of physiotherapy, acupuncture, rehabilitation and other value-added services for animals will emerge to complement veterinary services.

Key development trends and business challenges likely to change jobs and drive capacity building in the animal care and management sub-sectors include the examples outlined below.

Value-Added Services for Pets and Pet Owners

Development and promotion of new value-added services for pets and pet owners, including services such as physiotherapy, acupuncture and rehabilitation for animals. The emergence of a new generation of experts that complement veterinary services, specialising in areas of physiotherapy, acupuncture, rehabilitation and other value-added services for animals.

Digital Information Solutions

Greater focus on improving digital experiences and information solutions to improve productivity of staff and make it easier for customers to connect with zoos, wildlife parks and sanctuaries and aquariums. Increasing instances of remote areas having no access to a full time veterinarian and

⁴⁰ This section is based on feedback from IRC meetings, desktop research and broader stakeholder consultation via the website

some vets working under a FIFO arrangement will require the use of technology skills so that care can be delivered remotely. Development of digital tools and training and advice may become more common as frequent long distance travel to remote areas is no longer viable. Vets may be able to deliver assistance and advice to nursing staff via a range of communication technologies.

Animal Health

Increasing focus on understanding possible future animal health scenarios caused by climate change and changes in ecosystems; management approaches combining public health, veterinary and ecological expertise, surveillance and response for combating emerging infectious diseases

Intensified animal health surveillance for suspect notifiable disease and increased expectations to rapidly collect and disseminate data for assessing and managing risks to trade in livestock and products, public health and animal production efficiency; assessing and managing wildlife health, and for enhancing efforts in building regional disease control capacity

Strategies for integrating research on livestock value chains into effective disease response strategies will create the need for greater collaboration, communication and engagement skills from private and government veterinary operators and technicians involved in targeted and national animal health surveillance programs to ensure that relevant information is readily available for assessing and to manage associated risks. Also, collaborating with, or working within, public health, environmental agencies, physicians, ecologists, economists, social scientists and planners to identify possible future animal health scenarios posed by climate change and how ecosystem changes.

Compliance, Innovation and Customer Focus

Skills needs to adapt and respond to changing government policies, industry code of practices and WHS procedures are emerging. Higher level and value-added skills driven by 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 will be required. Examples of high level skills include a range of skills in the area of Science Technology Engineering and Mathematics (STEM), compliance and leadership.

Key Priority Skills in the Sector Workforce

	Important Skills for the Animal Care & Management within the next three to five years.
1	Compliance
2	Animal health (identification, Surveillance, data collection)
3	Digital information solutions
4	Value-added services for pets and pet owners
5	Innovation

Generic workforce skills ranked in order of importance for Animal Care & Management (Most important skill =1 least important skill = 12)	
1	Managerial / leadership
2	Customer Service/ Marketing
3	Entrepreneurial
4	Financial
5	Technology
6	Environmental and sustainability
7	Data analysis
8	Communication/ Virtual collaboration / Social intelligence
9	LLN (Foundation skills of literacy and numeracy)
10	STEM (Science Technology Engineering Mathematics)
11	Learning agility / Information Literacy / intellectual autonomy and self-management
12	Design mindset / Thinking critically / System thinking / Solving problems

Other Relevant Skills

The animal care and management industry sector has nominated key priority skill needs for the workforce / industry sectors in horse care (riding) to satisfy Recommendation 5 from the 2015 ASQA *Review of Training in Equine Programs*; veterinary nursing to meet industry needs in relation to entry, study and assessment at AQF 4 level; crime prevention to update principles and practices; and current practices and skill needs for animal control and regulation for large animal incident response, equine dentistry, infection control, and veterinary practices including microchip.

E. IRC TRAINING PRODUCT REVIEW PLAN 2016 – 2019

The IRC Training Package Review Plan 2016-19 for the Animal Care and Management Industry Sector is provided in Appendix A.

Explanation

This training package is already subject to two commissioned projects which are explained below.

- Safety in equine training
- The veterinary nurses project

When these two projects are finished the IRC will seek a project for review of 12 units of competency in farriery which need to be reviewed in line with new contemporary practices in hoof trimming and shoeing.

Training in Equine Programs in Australia

AISC has approved a project to respond to the recommendations of the ASQA *Training in equine programs in Australia*. This project will involve consultations on a number of training packages including *ACM Animal Care and Management Training Package*. In particular, the following interdependencies will occur:

- ***Agriculture: Horse Riding and Handling***

Units of competency in selected agriculture qualifications require handling and riding of horses. Relevant units will need to be reviewed and updated in conjunction with relevant recommendations from the 2015 ASQA review of training in equine programs and the review of relevant qualifications and units in ACM Animal Care and Management and RGR Racing Training Packages.

- ***Performance Horse Management***

New Certificate III and Diploma qualifications and units in performance horse management were developed for *AHC Agriculture, Horticulture and Conservation and Land Management Training Package*. These will need to be reviewed and updated in conjunction with relevant recommendations from the 2015 ASQA review of training in equine programs and the review of relevant qualifications and units in ACM Animal Care and Management and RGR Racing training packages.

- ***Review of Horse Handling and Riding***

Systemic safety issues were identified in the New South Wales Coroner's report into a horse riding accident in 2009 during training at a Technical and Further Education (TAFE) New South Wales institute. Subsequent recommendations impacting VET delivery and assessment are contained in the 2015 ASQA *Training in Equine Programs in Australia*.

Due to the prominence of this issue and the importance to a range of industry sectors, it is anticipated that comprehensive consultation with a wide range of stakeholders will need to occur in order to produce fit for purpose qualifications and units in the *ACM Animal Care and Management Training Package*, taking into account the needs of users across AHC Agriculture, Horticulture and Conservation and Land Management, ACM Animal Care and Management and RGR Racing training packages.

Horse care and breeding units related to horse handling and riding need to be strengthened according to recommendations contained in the 2015 ASQA report *Training in equine programs in Australia*

Veterinary Nursing

AISC have commissioned a review of the veterinary nursing components developed by AgriFood, with appropriate revisions to units and qualifications. Consultation and validation with industry

stakeholders is required to address editorial issues in all documentation highlighted by quality reviewer and strengthen assessment conditions information and specific assessor requirements in order to comply with Standard 6 of the *Standards for Training Packages, 2012*.

The review of veterinary nursing will respond to industry requests for minimum hours of practical experience and work placement entry requirements to Certificate IV in Veterinary Nursing and Diploma of Veterinary Nursing in light of training package products policy. It will also examine the feasibility of combining all four Diplomas into a single Diploma with specialist streams.

The deliverables will include 57 units, a Certificate IV and 4 Diplomas in Veterinary Nursing and the information for draft Companion Implementation Guide. Some units of competency may be common to other qualifications in ACM Animal Care and Management Training Package, for example *ACMGAS202 Participate in workplace communications* is common to Certificate II in Animal Studies as well as to veterinary nursing qualifications.

Farriery

The Master Farriers Association has sent feedback that quality of students and qualifications do not meet industry needs and that a review should be undertaken of the 12 units for review and update due to industry changes.

Training products scheduled for review more than once in four years

The Industry Reference Committee does not anticipate reviewing any products more than once in the four-year period unless specific improvement issues are raised by industry.

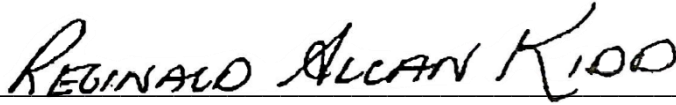
F. IRC SIGNOFF

This Workplan was agreed as the result of a properly constituted Rural and Related Industry Reference Committee decision.

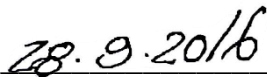
Signed for and on behalf of the **Rural and Related Industry Reference Committee** by its appointed Chair.

A handwritten signature in black ink, appearing to read 'RA Kidd', written over a horizontal line.

(Signature of Chair)

A handwritten name in black ink, 'REGINALD ALLAN KIDD', written in all caps and underlined.

(Print Name of Chair)

A handwritten date in black ink, '28.9.2016', written over a horizontal line.

(Date)

Appendix A

IRC Training Product Review Plan 2016 – 2019 for the Animal Care and Management Industry Sector

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

Date submitted to Department of Education and Training: 29 September 2016

Planned review start	TP name	TP code	Qualification name	Qualification code	Unit of competency name	UOC code
2016						
2016	Animal Care and Management	ACM	Equine Review Review Certificate II in Horse Care (Riding) in accordance with Recommendation 5 from the 2015 ASQA Review of Training in Equine Programs.	ACM20115	Ride educated horses to carry out stock work Handle horses Develop horse riding skills at walk and trot Perform basic (controlled) horse riding skills at walk, trot and canter	AHCLSK218 ACMEQU202 ACMEQU205 ACMEQU206

Planned review start	TP name	TP code	Qualification name	Qualification code	Unit of competency name	UOC code
			Veterinary Nursing		Animal Physiology	TBA
			Review of entry, study and assessment requirements to meet industry needs at AQF 4 level.		Participate in workplace communications	ACMGAS202A
					Feed and water animals	ACMGAS204A
					Assist in health care of animals	ACMGAS205A
					Source information for animal care needs	ACMGAS208A
					Comply with infection control policies and procedures in animal work	
			New unit required: Animal Physiology. This has been identified as a skills gap from Industry in Veterinary Nursing Cert IV and Cert II in animal studies.		Carry out veterinary nursing reception duties	ACMINF301A
					Carry out daily clinic routines	ACMVET201A
					Assist with surgery preparation	ACMVET202A
					Coordinate patient admission and discharge	ACMVET203A
					Apply imaging routines	ACMVET401A
					Perform clinic pathology procedures	ACMVET402A
					Perform clinic office procedures	ACMVET403A
					Carry out surgical nursing routines	ACMVET404A
					Nurse animals	ACMVET405A
					Carry out medical nursing routines	ACMVET406A
					Coordinate and perform theatre routines	ACMVET407A
					Provide specific animal care advice	ACMVET408A
					Carry out veterinary dental nursing procedures	ACMVET409A
			Review specialist streams across diploma level qualifications and possibility of merging into one qualification with streams.		Contribute to workplace health and safety processes	ACMVET410A
			Certificate IV in Veterinary Nursing	ACM40412	Implement and monitor environmentally sustainable work practices	
			Diploma of Veterinary Nursing (Surgical)	ACM50212	Manage veterinary nursing procedures	ACMWHS301A
			Diploma of Veterinary Nursing (Dental)	ACM50312	Apply veterinary pathophysiology	ACMSUS301A
					Apply principles of animal behaviour	ACMVET501A
					Manage workplace health and safety processes	ACMVET502A
			Diploma of Veterinary Nursing (Emergency and Critical Care)	ACM50412	Manage quality customer service	ACMVET508A
			Diploma of Veterinary Nursing (General Practice)	ACM50512	Manage nursing requirements for specialised surgical procedures	ACMWHS501A
					Carry out post-operative nursing routines	ACMSUS301A
					Support veterinary practice communication and professional development	ACMVET503A
					Manage workplace health and safety processes	ACMVET504A
						ACMVET508A
						ACMWHS501A

Planned review start	TP name	TP code	Qualification name	Qualification code	Unit of competency name	UOC code
2017						
	Animal Care & management	ACM	<p>Development and promotion of new value-added services for pets and pet owners, including services such as physiotherapy, acupuncture and rehabilitation for animals. and other value-added services for animals.</p> <p>New qualifications units or skills sets could include:</p> <ul style="list-style-type: none"> • Animal Rehabilitation • Animal Physiotherapy • Acupuncture in animals <p>Development of units that will focus on developing a customer focused culture.</p>	TBA	TBA	TBA
			<p>Review animal control, animal technology and captive animal units</p> <p>Review of animal control and regulation qualification for a Large Animal Rescue Skill Set covering large animal incident response.</p> <p>New units to include:</p> <ul style="list-style-type: none"> • Animal health surveillance 		<p>Unit Sector: Animal Regulation & Control</p> <p>Comply with animal control and regulation requirements</p> <p>Assess and impound animals</p> <p>Identify and respond to animal behaviour</p> <p>Manage conflict situations in an animal control and regulation environment</p> <p>Euthanase sick, injured or unwanted pound animals</p> <p>Carry out pound procedures</p> <p>Conduct community awareness programs</p> <p>Coordinate seizure of animals</p> <p>Prepare and present animal control and regulation case</p> <p>Unit Sector: Animal technology</p> <p>Work within an animal technology facility</p>	<p>ACMACR401A</p> <p>ACMACR402A</p> <p>ACMACR403A</p> <p>ACMACR404A</p> <p>ACMACR405A</p> <p>ACMACR406A</p> <p>ACMACR407A</p> <p>ACMACR408A</p> <p>ACMACR409A</p> <p>ACMATE301A</p>

Planned review start	TP name	TP code	Qualification name	Qualification code	Unit of competency name	UOC code
			<p>New STEM units required to cover to the following emerging skill gaps:</p> <ul style="list-style-type: none"> • Drone technology • GIS and mapping • Read and interpret GIS Data • GPS data collection 		<p>Carry out institution containment and exclusion procedures</p> <p>Prepare for and monitor anaesthesia in animals</p> <p>Conduct non-surgical procedures on animals</p> <p>Conduct euthanasia of research animals</p> <p>Manage compliance in animal technology</p> <p>Manage and maintain the health of research animals</p> <p>Carry out post-mortem examination of a research animal</p> <p>Administer anaesthesia and perform surgery on animals for scientific purposes</p> <p>Carry out advanced breeding procedures</p> <p>Assist to collect and transfer embryos of mice</p> <p>Manage the parturition of transgenic mice or rats</p> <p>Unit Sector: Captive Animals</p> <p>Work within a captive animal facility</p> <p>Prepare and present information to the public</p> <p>Support collection management</p> <p>Prepare and maintain animal housing</p> <p>Assist with capturing, restraining and moving animals</p> <p>Monitor animal reproduction</p> <p>Rehabilitate native wildlife</p> <p>Release native animals to natural environment</p> <p>Develop institutional husbandry guidelines</p> <p>Assist with exhibit design and renovation planning</p> <p>Care for young animals</p> <p>Implement collection management</p> <p>Manage enclosures and exhibits</p> <p>Develop animal diets</p> <p>Develop, monitor and review behavioural management strategies</p> <p>Design and evaluate interpretive and learning programs</p>	<p>ACMATE302A</p> <p>ACMATE303A</p> <p>ACMATE304A</p> <p>ACMATE305A</p> <p>ACMATE501A</p> <p>ACMATE502A</p> <p>ACMATE503A</p> <p>ACMATE504A</p> <p>ACMATE505A</p> <p>ACMATE506A</p> <p>ACMATE507A</p> <p>ACMCAN301A</p> <p>ACMCAN302A</p> <p>ACMCAN303A</p> <p>ACMCAN304A</p> <p>ACMCAN305A</p> <p>ACMCAN306A</p> <p>ACMCAN307A</p> <p>ACMCAN308A</p> <p>ACMCAN309A</p> <p>ACMCAN310A</p> <p>ACMCAN311A</p> <p>ACMCAN401A</p> <p>ACMCAN402A</p> <p>ACMCAN403A</p> <p>ACMCAN404A</p> <p>ACMCAN405A</p>

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					Assist in establishing and maintaining a plantation Contribute to enclosure and exhibit design or renovation projects Develop and monitor collection management	ACMCAN406A ACMCAN501A ACMCAN502A
2017	Animal Care & management	ACM	Animal Information Technology & Remote Animal care Units needed to address skills in: <ul style="list-style-type: none"> • Improving digital experiences • Improve productivity of staff using technology • Digitally connecting with customers • Remote veterinary nursing assistance 	TBA	TBA	TBA
2017		ACM	Review of 12 units in Farriery as per Industry feedback. (12) Certificate III in Farriery	ACM30510	Handle horses safely in the provision of farriery services Work effectively as a farrier in the equine industries Perform routine day-to-day farriery activities Respond to emergencies and apply essential first aid in the equine industries Perform welding tasks using a forge Maintain, repair and manufacture hand tools used in farriery Make standard shoes for a range of horses Determine foot care and shoeing plans for horses Fit shoes for normal healthy horses Fit shoes to alleviate moderate faults and defects in horses Fit shoes to alleviate severe faults and defects in horses	ACMFAR301A ACMFAR302A ACMFAR303A ACMFAR304A ACMFAR305A ACMFAR306A ACMFAR307A ACMFAR308A ACMFAR309A ACMFAR310A ACMFAR311A ACMFAR312A

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					Accommodate special needs of particular horses through farriery techniques	
			Review equine dentistry, infection control, and veterinary units including microchipping (41):		<p>Unit Sector: Equine (EQU) Work within an equine dental service provision framework Determine equine oral function efficiency Identify potential health impacts of equine oral conditions Conduct equine oral inspection and assessment and plan equine dental treatment Perform routine dental correction and oral care using manual instruments Relate equine anatomical and physiological features to equine health care requirements Determine nutritional needs in provision of horse health care Relate musculoskeletal structure to horse movement Evaluate fit of saddlery and equipment Maintain and monitor horse health and welfare</p> <p>Unit Sector: Infection Control (INF) Comply with infection control policies and procedures in animal work</p> <p>Unit Sector: Microchip (MIC) Implant microchip in cats and dogs</p> <p>Unit Sector: Veterinary Nursing (VET) Carry out veterinary nursing reception duties Carry out daily clinic routines Assist with surgery preparation Coordinate patient admission and discharge Apply imaging routines Perform clinic pathology procedures</p>	ACMEQD401A ACMEQD402A ACMEQD403A ACMEQD404A ACMEQD405A ACMEQU401A ACMEQU402A ACMEQU403A ACMEQU404A ACMEQU405A ACMINF301A ACMMIC401A ACMVET201A ACMVET202A ACMVET203A ACMVET401A ACMVET402A ACMVET403A

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					Perform clinic office procedures Carry out surgical nursing routines Nurse animals Carry out medical nursing routines Coordinate and perform theatre routines Provide specific animal care advice Carry out veterinary dental nursing procedures Prepare, deliver and review animal care education programs Coordinate clinic promotional activities Develop and implement specific clinic policies Nurse foals Provide intensive foal care and nursing Manage nursing requirements for specialised surgical procedures Carry out post-operative nursing routines Produce veterinary dental oral cavity radiographs Provide veterinary dental nursing support for advanced veterinary dental surgery Prepare for emergency response Perform emergency procedures to sustain life Provide nursing support for critical care surgery Support veterinary practice communication and professional development Manage veterinary nursing procedures Apply veterinary nursing pathophysiology Apply principles of animal behaviour	ACMVET404A ACMVET405A ACMVET406A ACMVET407A ACMVET408A ACMVET409A ACMVET410A ACMVET411A ACMVET412A ACMVET413A ACMVET414A ACMVET415A ACMVET501A ACMVET502A ACMVET503A ACMVET504A ACMVET505A ACMVET506A ACMVET507A ACMVET508A ACMVET509A ACMVET510A ACMVET511A
2018	Animal Care and management	ACM	Review companion animal, farriery and specialised animal care units (41):		Unit Sector: Companion Animal Services Work effectively in the companion animal industry Provide advice on companion animal selection and general care Provide advice on selection and care of aquatic animals Capture, handle and transport companion animals	ACMCAS301A ACMCAS302A ACMCAS303A ACMCAS304A

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					Maintain aquascapes and aquatic animals Provide grooming services for companion animal comfort Provide companion animal hydro-bathing services Manage compliance in the companion animal industry Manage and maintain aviaries and bird rooms Design, construct and maintain aquascapes Develop enrichment strategies for companion animals Purchase companion animal livestock Manage companion animal breeding Provide professional companion animal grooming services Manage the operation of a mobile hydro-bathing facility Provide training advice to companion animal owners Conduct companion animal training classes Unit Sector: Species Specific Provide basic care of amphibians Provide basic care of birds Provide basic care of common native mammals Provide basic care of dogs Provide basic care of domestic cats Provide basic care of marine fish Provide basic care of freshwater fish Provide basic care of marine aquatic invertebrates Provide basic care of terrestrial and freshwater invertebrates Provide basic care of mammals Provide basic care of non-venomous reptiles Provide basic care of rodents and rabbits	ACMCAS305A ACMCAS306A ACMCAS307A ACMCAS401A ACMCAS402A ACMCAS403A ACMCAS404A ACMCAS405A ACMCAS406A ACMCAS407A ACMCAS408A ACMCAS409A ACMCAS410A ACMSPE301A ACMSPE302A ACMSPE303A ACMSPE304A ACMSPE305A ACMSPE306A ACMSPE307A ACMSPE308A ACMSPE309A ACMSPE310A ACMSPE311A ACMSPE312A

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2019						
2019	Animal care and Management		Review general animal services, grooming, sustainability and WHS units (40):		<p>Unit Sector: General Animal Studies Investigate job opportunities in animal care and related industries Catch and handle a range of quiet animals Assist in the care of animals Work in the animal care industry Participate in workplace communications Complete animal care hygiene routines Feed and water animals Assist in health care of animals Provide basic first aid for animals Provide reception services for an animal care facility Source information for animal care needs Provide information on companion animals, products and services Prepare for and conduct a tour or presentation Maintain and monitor animal health and wellbeing Provide enrichment for animals Plan for and provide nutritional requirements for animals Carry out simple breeding procedures Rescue animals and apply basic first aid Assist with conditioning animals</p> <p>Unit Sector: Grooming (GRM) Perform dog grooms on different coat types Perform a cross breed clip Carry out breed standard styling on Gun dog, Working dog and Hound dog breed groups Carry out breed standard styling on Non-sporting and Toy dog breed groups Carry out breed standard styling on Terrier and Utility dog groups Provide creative styling for dogs Carry out styling on cats of different breed and coat type</p>	ACMGAS101A ACMGAS102A ACMGAS103A ACMGAS201A ACMGAS202A ACMGAS203A ACMGAS204A ACMGAS205A ACMGAS206A ACMGAS207A ACMGAS208A ACMGAS209A ACMGAS210A ACMGAS301A ACMGAS302A ACMGAS303A ACMGAS304A ACMGAS305A ACMGAS306A ACMGRM301A ACMGRM302A ACMGRM401A ACMGRM402A ACMGRM403A ACMGRM404A ACMGRM405A

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					Unit Sector: Work Health and Safety (WHS) Participate in occupational health and safety processes Contribute to occupational health and safety processes Maintain occupational health and safety processes Manage occupational health and safety processes Participate in environmentally sustainable work practices Implement and monitor environmentally sustainable work practices Participate in workplace health and safety processes Contribute to workplace health and safety processes Maintain workplace health and safety processes Manage workplace health and safety processes	ACMOHS201A ACMOHS301A ACMOHS401A ACMOHS501A ACMSUS201A ACMSUS301A ACMWHS201A ACMWHS301A ACMWHS401A ACMWHS501A