

ANIMAL CARE AND MANAGEMENT INDUSTRY
SECTOR

IRC Skills Forecast and Proposed Schedule of Work

2017–2020

Prepared on behalf of the Rural and Related Industries Industry Reference Committee for the Australian Industry and Skills Committee (AISC)

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Rural and Related Industries IRC Skills Forecast And Proposed Schedule Of Work 2017–2020

Purpose

This skills forecast represents the latest industry intelligence and resulting schedule of work 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 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 challenge and/or provide 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

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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 Australian households owning pets (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 specialisation 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 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 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

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.

- 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, diagnostic and management of wildlife, animal tracking and monitoring in livestock farming,² pet management, and fire detection, among 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 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, 2017–2020, are summarised in the following table:

PRIORITY SKILL	DRIVERS	TRAINING PACKAGE SOLUTION ³
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 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.

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>>

³ A full list of relevant qualifications and units of competencies is provided in the IRC Training Product Review Plan 2017–2020 at the end of this report

PRIORITY SKILL	DRIVERS	TRAINING PACKAGE SOLUTION ³
Specialist skills in alternative animal therapies, including animal rehabilitation, physiotherapy and acupuncture	A growth in pet owners and their affection for pets fuelling spending on animal healthcare and welfare services; Macroeconomic factors including population growth and rising disposable income.	There are no alternative animal therapies units in the existing ACM10. Development of five to ten new units or skill sets at the Diploma level in veterinary operations (AQF level 5) to cover physiotherapy, animal rehabilitation, and animal acupuncture.
Large animal rescue skills	Recent increases in bushfires and flood events in urban and rural areas have driven the need for expertise in dealing with large animals, e.g. cattle, horses, and sheep.	Review and improvement of 50 units and three qualifications in the areas of animal control and regulations and captive animals. Develop one new qualification and six new units. Development of at least five new units at AQF level 4.
Skills in horse education	There are records of a large number of extremely experienced horse educators (breakers) being injured in recent times. This leads to opportunities for educators to learn about equine behaviour and learning patterns.	Development of new horse education qualifications.
Industry-generic skills		
Skills in customer experience management using digital technologies	Achievement of business outcomes such as efficiency, revenue streams and customer retention/loyalty.	Review and improvement of 49 units at AQF levels 3, 4 and 5 in companion animal services, veterinary nursing and related areas. Development of at least five new units at AQF levels 3, 4 and 5.
Skills in animal health surveillance technologies	Intense national and state-based biosecurity policies and animal surveillance programs for preventing and controlling major animal disease outbreaks; Technology	Review and improvement of one unit at AQF level 4. Development of at least seven new units or skill sets at AQF levels 3, 4 and 5.

PRIORITY SKILL	DRIVERS	TRAINING PACKAGE SOLUTION ³
	developments that enable real-time surveillance, diagnostics and management of wildlife, livestock farming and pets.	

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.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.**

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

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>>

The Australian livestock breeding community is large, comprising of 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 majority of which are small-scale non-employing 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 totalled \$788 million in 2015¹⁷ (this also includes botanical gardens operations)
- companion animal services, which contributes \$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 comprises 19 qualifications, 6 skill sets, 158 native units of competency and 68 imported units.

⁸ Australian Registered Cattle Breeders' Association, 2012, 'Australian Beef Cattle Registrations' [www] <<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?25-10-2015%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'

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

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

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 provided in rural and urban communities, including 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. Urban areas mostly involve the treatment of companion animals, and there is an increase in specialist servicesAustralian 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 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 LimitedNational Veterinary CareBest Friends Stores Pty LtdRSPCA AustraliaVetfriends Animal HospitalsVetwest Animal HospitalsHealthscope LtdIDEXX 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.

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

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

	<p>small number of enterprises employ people to support horse farming operations.</p> <p>Major horse breeding enterprises:²⁵</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 (QLD) • 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	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 or un-owned dogs and cats.
COMPANIES	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

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

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>>

	<p>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 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.
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.
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.

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 2009.²⁷ 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	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.
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, 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. In addition, fixed-wing aircraft, helicopters and other tools 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>

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 and game animals. Most are classified as feral or pest</p>

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>>

	<p>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	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

Relevant Stakeholders

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	NATIONAL
Australian Veterinary Association	NATIONAL
Veterinary Nurses Council of Australia (VNCA)	NATIONAL
ANIMAL TECHNOLOGY	
Animal Ethics Committees	NATIONAL

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>>

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
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 Managers Association Australia	NATIONAL
Veterinary Practitioners Registration Boards	NATIONAL
Professionals Australia	NATIONAL

EMPLOYEE ASSOCIATIONS

Community and Public Sector Union	NATIONAL
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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 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.

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>>

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 (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 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 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 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

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/agmemoranda/rangelands/agmemoranda-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>>

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 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. 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 herd's 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

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>

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.tsra=Newsmail>

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 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.

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 3-D 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,⁴² diagnostics and management of wildlife, and animal tracking and monitoring in livestock farming,⁴³ 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.

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.tsra=Newsmail>

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

⁴² 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>

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>>

⁴³ 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 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 2020⁴⁴

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

Description of Workforce Supply

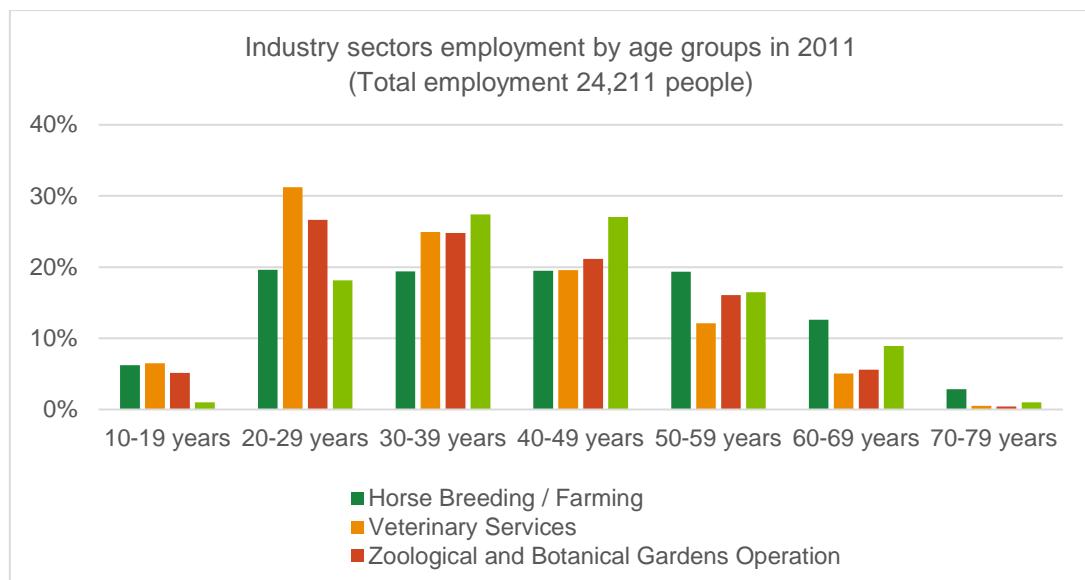
The animal care and management industry sector is a significant employer of people in both regional and urban areas. ABS stats indicate (for sectors where data is available) that the industry workforce is ageing, presenting businesses with the challenge of an oncoming wave of retirement (Figure 1).

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 of 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 to metropolitan areas within ten years.⁴⁵

⁴⁴ Department of Employment, 2016, 'Industry Employment Projections – Five Years to November 2020', <http://lmip.gov.au/default.aspx?LMIP/EmploymentProjections>

⁴⁵ Professionals Australia, 2015, 'Informers: Veterinary Services', http://www.professionalsaustralia.org.au/wp-content/uploads/2015/08/VET_INFORMER_v1.pdf

Figure 1: Industry Sector Employment by Age Groups in 2011⁴⁶



Current employing occupations in the animal care and management industry sector include the professions in Figure 2 to Figure 5 below. While ABS stats are not inclusive of all occupations in the sector, there are many other jobs that involve working with animals. These include animal attendants, kennel workers, groomers, dog walkers/pet sitters, animal behaviourists, and animal trainers, among others.

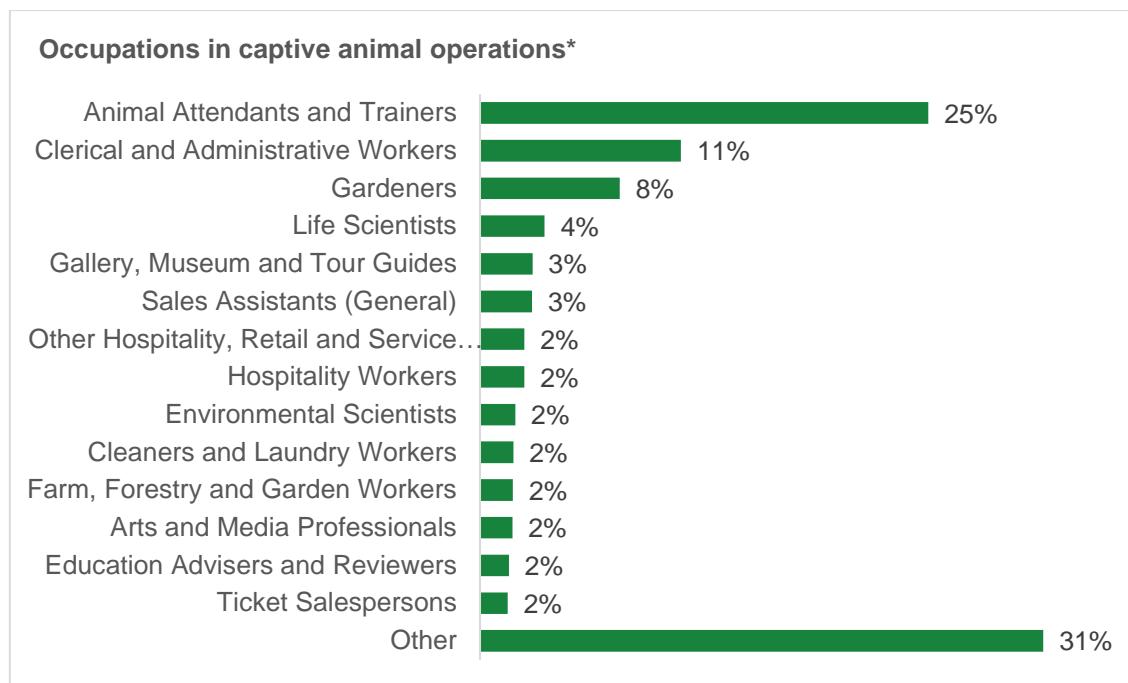
Figure 2: Occupations and their Relative Number in the Veterinary Services Sector⁴⁷



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

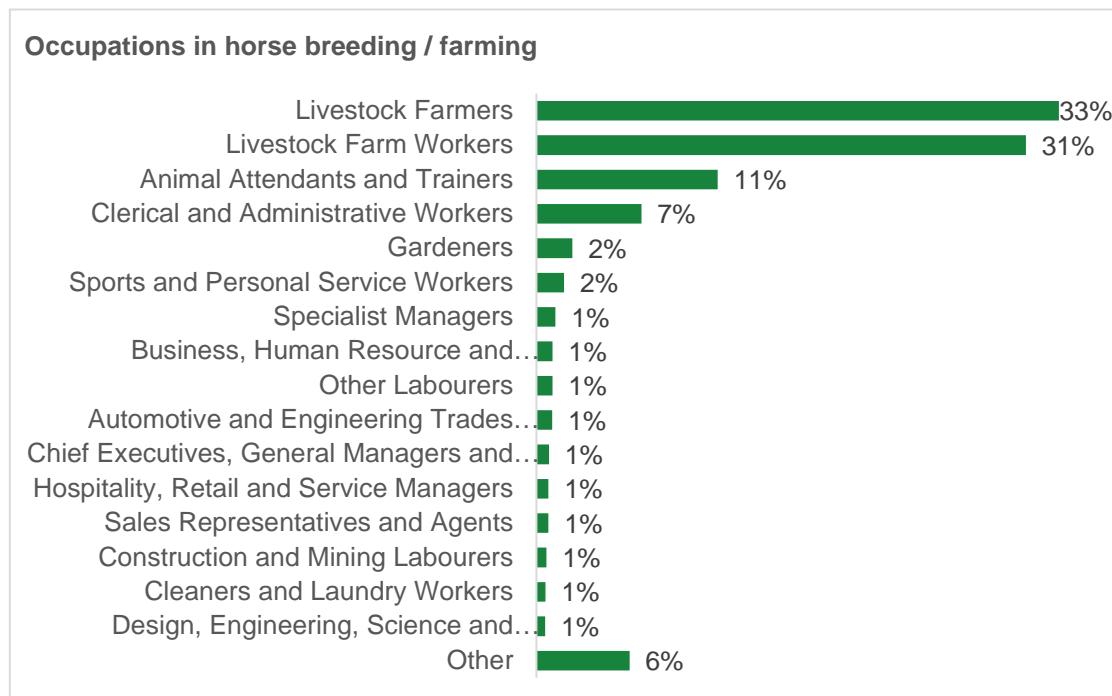
⁴⁷ Ibid.

Figure 3: Occupations and their Relative Number in the Captive Animal Operations Sector⁴⁸



*The list also includes occupations in the botanical gardens sector

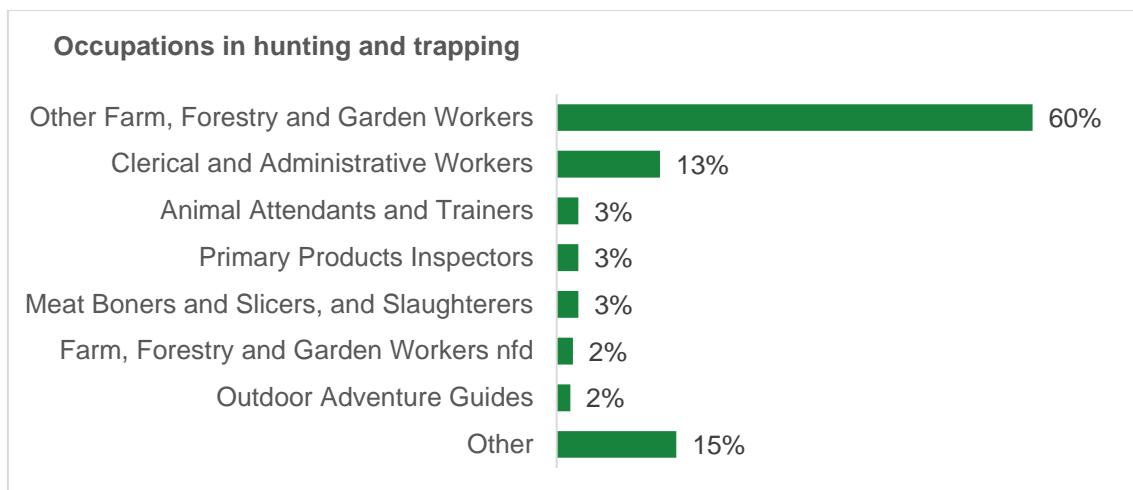
Figure 4: Occupations and their Relative Number in the Horse Breeding/Farming Sector⁴⁹



⁴⁸ ABS, 2011, '2011 Census of Population and Housing'

⁴⁹ Ibid.

Figure 5: Occupations and their Relative Number in the Hunting and Trapping Sector⁵⁰



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.

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 among 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 within the sectors, and in specialist training, resides solely with employers.

⁵⁰ ABS, 2011, '2011 Census of Population and Housing'

D. SKILLS OUTLOOK

Anticipating future skills needs in the animal care and management sector is crucial to prepare for and meet the new demands due to 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 next four years (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 2017 and 2018 so that the skills can be developed and available before 2020. Refer to the IRC Training Product Review Plan 2017–2020 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.

The industry is currently undertaking a joint project with the racing industry, Safety in Equine Training. The project is expected to be completed by the middle of 2017. A second project involvement in the review of qualifications for veterinary nursing is also being undertaken with the expectation that it will be completed by the end of 2017. Refer to the Current IRC Projects section for the list of units that are currently developed and reviewed from the *ACM10 Animal Care and Management Training Package*.

Industry-Specific Priority Skills

The 2017–2020 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
Work safely around animals (infection control)	Ability to use a range of mechanisms to minimise the risk of infection in veterinary clinics and rural businesses such as meat processors, saleyards and livestock transporters. Such mechanisms include information platforms provided by animal health surveillance programs, work practice controls, screening services and regulatory requirements for biological hazards.
	Relevant occupations Veterinarians, veterinary nurses, farmers, livestock handlers and abattoir workers.

Drivers

Recent outbreaks of Q fever and Hendra virus have put industry workers at risk of contracting diseases that are carried by livestock, domestic and wild animals.⁵¹

Training Package solutions⁵²

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.

Benefits from Training Package changes

- Increased awareness of infection risks when handling animals.
- Better knowledge of legislation and reporting regimes.
- Fewer workers at risk of contracting animal diseases.
- Decreased cost to animal sector businesses to compensate infected workers.

Priority skill 2

Skills update in farriery

Skill description

Handle horses, farriery activities, first aid, welding, using a forge, repair tools, fit shoes, make shoes.

Relevant occupations

Farrier.

Drivers

The Master Farriers Association have indicated that job roles are not aligned with the current industry training package qualifications in farriery. They have indicated that graduates are not job-ready. The Master Farriers Association have suggested that a review of the assessment requirements would enable sound delivery and implementation of the units within this qualification.

Training Package solutions

Review and improvement of 12 units at AQF level 3 in farriery.

Development of at least five new units at AQF level 3.

Benefits from Training Package changes

- Employers will have increased confidence in Training Package qualifications and with applicant's abilities to perform to industry work standards.

Priority skill

Skill description

⁵¹ 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.tsra=Newsmail>

⁵² Refer to IRC Training Product Review Plan 2017–2020 for a full list of relevant qualifications and units of competencies

Specialist skills in alternative animal therapies including animal rehabilitation, physiotherapy and acupuncture	<p>Knowledge of and ability to use alternative healing methods to assist animals, particularly pets, on physical and mental levels</p> <p>Relevant occupations</p> <p>Veterinary nurses, pet therapists.</p> <p>Drivers</p> <p>A growth in pet owners and their affection for pets fuelling spending on animal healthcare and welfare services. Macroeconomic factors include population growth and rising disposable income. Physiotherapy and rehabilitation are specialist streams of practice by veterinarians and there is no formal training for veterinary nurses to support these activities.</p>
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Training Package solutions

There are no alternative animal therapies units in the existing ACM10.

Development of five to ten new units or skill sets at the Diploma level in veterinary operations (AQF level 5) to cover the following:

- physiotherapy large animals
- physiotherapy small animals
- animal rehabilitation large animals
- animal rehabilitation small animals
- animal acupuncture.

Benefits from Training Package changes

Changes to the package will have economic benefit to the animal care industry by value-adding to services already provided. Changes will also increase consumer confidence that suitably qualified people are taking care of their pets. Addition of new units in this sector will fill a skills gap that is continuing to grow.

Priority skill	Skill description
Large animal rescue skills	Knowledge of and ability to apply large animal rescue techniques in various natural or anthropogenic disasters, emergencies or accidents.

Relevant occupations

Animal rescue operators, emergency response operators, firefighters, veterinary nurses, farmers, transporters.

Drivers

Recent increases in bushfires and flood events in urban and rural areas have driven the need for expertise in dealing with large animals, e.g. cattle, horses and sheep. Fire and rescue, veterinary operations, farmers

and transporters routinely deal with incidents involving large animals in rural areas. There is a need for industry workers to be properly trained.⁵³

Training Package solutions

Review and improvement of 50 units and three qualifications at AQF levels 3 and 4 in the area of animal control and regulations and captive animals.

Development of one new qualification and at least six new units at AQF level 4.

Benefits from Training Package changes

The addition of this skill set has the potential to cover large animal rescue operations across Australia. Skill sets may enhance the job roles of people working in disaster management, bush firefighting, livestock management and veterinary services.

Priority skill	Skill description
Skills in horse education	Young horse educators (breakers) must be highly knowledgeable in horse behaviour and horse learning methods.
Relevant occupations	
Horse educators (breakers), horse trainers (Thoroughbred, Standardbred, recreational, etc.)	
Drivers	
A horse needs to be educated to respond to instructions consistently and learn about wearing equipment for riding or driving prior to commencing training for racing. Horses are flight animals – when they are in new or unusual situations, their instinct is to run away. To instigate their ability to run, they may also kick out at whatever is blocking them. This increases the risk of injury or death to the young horse educators trying to 'break' them.	
There are records of a large number of extremely experienced breakers being injured in recent times.	
Training Package solution	
Development of horse education (breaking) qualifications. This could be a cross-IRC project to deal with all areas that require horses to be broken.	
Benefits from Training Package changes	
Young Horse Educators will be better equipped to handle a range of situations when breaking horses. This will improve the safety aspects when carrying out training and will reduce any stresses of young horses that are being trained.	

⁵³ 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.tsra=Newsmail>

Industry-Generic Priority Skills

Priority skill	Skill description
Skills in customer experience management using digital technologies	<p>Ability to implement and use CRM technology to oversee and track all interactions with customers, particularly pet owners, during the animal care service provision.</p> <p>Ability to communicate with and provide animal care services to customers (including pet owners and remote veterinary nurses) via mobile digital technologies.</p> <p>Ability to use visuals, displays and interactivity to connect with customers and create a compelling experience, particularly in captive wildlife operations.</p> <p>Ability to foster a customer-focused culture that delivers customer service delivery targets.</p>
	Relevant occupations
	Pet groomer, veterinary nurses, pet therapists, cattery/kennel attendants, pet minders, dog trainers, zoo/theme park customer service operators.
	Drivers
	<p>More than 1.1 million Australian households (14.9 per cent) are planning to get a pet in the next 12 months.⁵⁴ The increase in pet ownership in Australia will increase the need for more veterinary services and faster turnaround times. This will lead to higher targets for business outcomes such as efficiency, revenue streams and customer retention/loyalty.</p> <p>Management of customer data and relationships will be key to businesses that are seeking to grow and employ more staff.</p>
	Training Package solutions
	<p>Review and improvement of 49 units at AQF levels 3, 4 and 5 in companion animal services, veterinary nursing and related areas.</p> <p>Development of at least five new units at AQF levels 3, 4 and 5.</p>
	Benefits from Training Package changes
	<ul style="list-style-type: none">• Animal care industry will be able to meet the increasing demand in pet services efficiently.• New jobs will be created as loyal customer bases grow with increased pet ownership.

⁵⁴ 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>>
RSPCA, 2016, 'How many pets are there in Australia?', <http://kb.rspca.org.au/How-many-pets-are-there-in-Australia_58.html>

Priority skill	Skill description
Skills in animal surveillance technologies	<p>Ability to use specialised geospatial software and technologies, including remote sensors, drones, new generation satellite imagery technologies, wearable and mobile technologies and apps.</p> <p>Ability to work with different types of geospatial data for field data collections in animal health surveillance programs.</p> <p>Ability to apply a range of analytical methods to geospatial data that directly supports assessment, planning, and decision-making for combating emerging infectious diseases in ecosystems.</p> <p>Ability to communicate and engage veterinary operators involved in targeted and national health surveillance programs with relevant information to manage identified risks.</p> <p>Knowledge of and ability to implement animal tracking technologies such as GPS pet tracker or RFID microchip implants and pet wearable devices that enable surveillance and tracking to provide advice to customers.</p>
	Relevant occupations
	Veterinary technologists and technicians, veterinary nurses, veterinarians, zoologists and wildlife biologists, animal care and service workers, farmers.
	Drivers
	National and state-based biosecurity policies and animal surveillance programs for preventing and controlling major animal disease outbreaks.
	Technology developments that enable real-time surveillance, diagnostics and management of wildlife, livestock farming and pets.
	Training Package solutions
	Review and improvement of one unit at AQF level 4.
	Development of at least seven new units or skill sets at AQF levels 3, 4 and 5.
	Benefits from Training Package changes
	By providing changes to the training package, the range of skills that are required with the rapid emergence of new technologies, including drones for surveillance, GIS mapping and RFID microchips will be addressed. Training in these areas will improve the collection of real-time data that feeds into national surveillance programs and allows rapid response with informed decisions during outbreaks.

E. IRC TRAINING PRODUCT REVIEW PLAN 2017 – 2020

The IRC Training Package Review Plan 2017–2020 for the animal care and management industry sector is provided at the end of this report.

Time-critical projects

The criteria used to outline time-critical projects within the *ACM10 Animal Care and Management Training Package* include workplace safety issues, regulatory needs, biosecurity issues (disease outbreak) and qualifications under VET Student Loans courses list, which can benefit from improvement or development of national skill standards.

Proposed project	Time-critical issues
Work safely around animals (infection control)	<i>Workplace safety</i> Recent outbreaks of Q fever, Hendra virus and other livestock diseases have put industry workers at risk of contracting the diseases. There is evidence of contamination in both veterinary clinics and rural businesses.
Skills in horse education	<i>Workplace safety</i> There are records of a large number of extremely experienced horse educators (breakers) and trainers who have been injured in recent times.

Proposed projects that will involve review or development of new units for qualifications under VET Student Loans include the following.

Proposed project	Improving VET Student Loans qualifications
Skills in customer experience management using digital technologies	ACM50212/ACM50412/ACM50512 Diploma of Veterinary Nursing Note: These qualifications are currently under review and will have a different code
Specialist skills in alternative animal therapies, including animal rehabilitation, physiotherapy and acupuncture	ACM50212/ACM50412/ACM50512 Diploma of Veterinary Nursing
Skills in animal surveillance technologies	ACM50212/ACM50412/ACM50512 Diploma of Veterinary Nursing

Interdependencies

Proposed projects with an opportunity to involve more than one training package or IRC include the following.

Proposed project	Interdependencies
Large animal rescue skills	Large animal rescue is undertaken by operators or professionals across a number of industry sectors. There is an opportunity for a joint project between two training packages (RGR and ACM) to ensure the skill standards viability for multiple industries. Nevertheless, specialisation elements are a possibility due to a rescue operation, such as on the farm or the racetrack, being a different environment.
Skills in animal surveillance technologies	There is a shared interest from agriculture, animal care and management and forestry industries in specialised skills for using geospatial software and technologies to capture data that support both biosecurity programs and strategic decisions in these industries. Hence, there is an opportunity for a joint project between three training packages – ACM, AHC and FGM.
Skills update in farriery	Farriery skills are required in both animal care and management and the racing and horse breeding industry. A cross-IRC project is required, as the Certificate III in Farriery sits with ACM and it needs to cover the skill needs of both industries.

Current projects

The industry is currently undertaking the Veterinary Nursing project, which was funded and developed from the 2016 work plan. Refer to the Current IRC Projects section for the list of units that are currently being developed and reviewed.

F. 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 **Rural and Related Industry Reference Committee** by its appointed Chair.



(Signature of Chair)



(Print Name of Chair)

27/04/2017

(Date)

ATTACHMENT A

IRC Training Product Review Plan 2017-2020 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, 2017

YEAR	PRIORITY SKILLS	QUALIFICATION CODE & NAME	UNIT OF COMPETENCY CODE & NAME
2017	Work safely around animals		ACMWHS201A Participate in workplace health and safety processes ACMWHS301A Contribute to workplace health and safety processes ACMWHS401A Maintain workplace health and safety processes ACMWHS501A Manage workplace health and safety processes ACMINF301A Comply with infection control policies and procedures in animal care work Total for review 5
2017	Skills update in farrier's qualification	ACM30510 Certificate III in Farriery	ACMFAR301A Handle horses safely in the provision of farriery services ACMFAR302A Work effectively as a farrier in the equine industries ACMFAR303A Perform routine day-to-day farriery activities ACMFAR304A Respond to emergencies and apply essential first aid in the equine industries ACMFAR305A Perform welding tasks using a forge ACMFAR306A Maintain, repair and manufacture hand tools used in farriery ACMFAR307A Make standard shoes for a range of horses

YEAR	PRIORITY SKILLS	QUALIFICATION CODE & NAME	UNIT OF COMPETENCY CODE & NAME
			ACMFAR308A Determine foot care and shoeing plans for horses ACMFAR309A Fit shoes for normal healthy horses ACMFAR310A Fit shoes to alleviate moderate faults and defects in horses ACMFAR311A Fit shoes to alleviate severe faults and defects in horses ACMFAR312A Accommodate special needs of particular horses through farriery techniques Total for review 12
2018	Specialist skills in alternative animal therapies, including animal rehabilitation, physiotherapy and acupuncture	ACM50512 Diploma of Veterinary Nursing (General Practice) (Note this qualification is currently under review and will have a different code)	ACMXXXXXX Physiotherapy large animals ACMXXXXXX Physiotherapy small animals ACMXXXXXX Animal rehabilitation large animals ACMXXXXXX Animal rehabilitation small animals ACMXXXXXX Animal acupuncture Total for review 0
2017	Large animal rescue skills	ACM30310 Certificate III in Captive Animals ACM40110 Certificate IV in Animal Control and Regulation ACM40210 Certificate IV in Captive Animals ACMXXXXXX Certificate II in Remote Animal Management	ACMXXXXXX Improve animal health in remote areas ACMXXXXXX Sustainable animal management in remote areas ACMXXXXXX Managing animals in a culturally appropriate way ACMXXXXXX Manage dangerous dogs in remote areas ACMXXXXXX Preventative health care for wild dogs in remote areas ACMXXXXXX Manage cultural relationships for Indigenous people ACMACR401A Comply with animal control and regulation requirements ACMACR402A Assess and impound animals

YEAR	PRIORITY SKILLS	QUALIFICATION CODE & NAME	UNIT OF COMPETENCY CODE & NAME
			ACMACR403A Identify and respond to animal behaviour ACMACR404A Manage conflict situations in an animal control and regulation environment ACMACR405A Euthanase sick, injured or unwanted pound animals ACMACR406A Carry out pound procedures ACMACR407A Conduct community awareness programs ACMACR408A Coordinate seizure of animals ACMACR409A Prepare and present animal control and regulation case ACMATE302A Carry out institution containment and exclusion procedures ACMCAN301A Work within a captive animal facility ACMCAN302A Prepare and present information to the public ACMCAN303A Support collection management ACMCAN304A Prepare and maintain animal housing ACMCAN305A Assist with capturing, restraining and moving animals ACMCAN306A Monitor animal reproduction ACMCAN307A Rehabilitate native wildlife ACMCAN308A Release native animals to natural environment ACMCAN309A Develop institutional husbandry guidelines ACMCAN310A Assist with exhibit design and renovation planning ACMCAN311A Care for young animals ACMCAN401A Implement collection management ACMCAN402A Manage enclosures and exhibits

YEAR	PRIORITY SKILLS	QUALIFICATION CODE & NAME	UNIT OF COMPETENCY CODE & NAME
			ACMCAN403A Develop animal diets ACMCAN404A Develop, monitor and review behavioural management strategies ACMCAN405A Design and evaluate interpretive and learning programs ACMCAN406A Assist in establishing and maintaining a plantation ACMCAN501A Contribute to enclosure and exhibit design or renovation projects ACMCAN502A Develop and monitor collection management ACMGAS301A Maintain and monitor animal health and wellbeing ACMGAS302A Provide enrichment for animals ACMGAS303A Plan for and provide nutritional requirements for animals ACMGAS305A Rescue animals and apply basic first aid ACMGAS306A Assist with conditioning animals ACMOHS301A Contribute to occupational health and safety processes ACMOHS401A Maintain occupational health and safety processes ACMSPE301A Provide basic care of amphibians ACMSPE302A Provide basic care of birds ACMSPE303A Provide basic care of common native mammals ACMSPE304A Provide basic care of dogs ACMSPE305A Provide basic care of domestic cats ACMSPE306A Provide basic care of marine fish ACMSPE307A Provide basic care of freshwater fish

YEAR	PRIORITY SKILLS	QUALIFICATION CODE & NAME	UNIT OF COMPETENCY CODE & NAME
			ACMSPE308A Provide basic care of marine aquatic invertebrates ACMSPE309A Provide basic care of terrestrial and freshwater invertebrates ACMSPE310A Provide basic care of mammals ACMSPE311A Provide basic care of non-venomous reptiles ACMSPE312A Provide basic care of rodents and rabbits ACMSUS201A Participate in environmentally sustainable work practices ACMSUS301A Implement and monitor environmentally sustainable work practices Total for review 50
2018	Skills in horse education	ACMXXXXXX	There are no horse education units in the existing ACM10. Therefore, no units will need to be reviewed. However, a new qualification will need to be developed. Total for review 0
2018	Skills in customer experience management using digital technologies	ACM20110 Certificate II in Animal Studies ACM30410 Certificate III in Companion Animal Services ACM40310 Certificate IV in Companion Animal Services ACM40412 Certificate IV in Veterinary Nursing	ACMCAS301A Work effectively in the companion animal industry ACMCAS302A Provide advice on companion animal selection and general care ACMCAS303A Provide advice on selection and care of aquatic animals ACMCAS304A Capture, handle and transport companion animals ACMCAS305A Maintain aquascapes and aquatic animals ACMCAS306A Provide grooming services for companion animal comfort ACMCAS307A Provide companion animal hydro-bathing services ACMCAS401A Manage compliance in the companion animal industry

YEAR	PRIORITY SKILLS	QUALIFICATION CODE & NAME	UNIT OF COMPETENCY CODE & NAME
			ACMCAS402A Manage and maintain aviaries and bird rooms ACMCAS403A Design, construct and maintain aquascapes ACMCAS404A Develop enrichment strategies for companion animals ACMCAS405A Purchase companion animal livestock ACMCAS406A Manage companion animal breeding ACMCAS407A Provide professional companion animal grooming services ACMCAS408A Manage the operation of a mobile hydro-bathing facility ACMCAS409A Provide training advice to companion animal owners ACMCAS410A Conduct companion animal training classes ACMEQU401A Relate equine anatomical and physiological features to equine health care requirements ACMEQU402A Determine nutritional needs in provision of horse health care ACMEQU405A Maintain and monitor horse health and welfare ACMGAS201A Work in the animal care industry ACMGAS202A Participate in workplace communications ACMGAS203A Complete animal care hygiene routines ACMGAS204A Feed and water animals ACMGAS205A Assist in health care of animals ACMGAS206A Provide basic first aid for animals ACMGAS207A Provide reception services for an animal care facility ACMGAS208A Source information for animal care needs

YEAR	PRIORITY SKILLS	QUALIFICATION CODE & NAME	UNIT OF COMPETENCY CODE & NAME
			ACMGAS209A Provide information on companion animals, products and services ACMGAS210A Prepare for and conduct a tour or presentation ACMOHS201A Participate in occupational health and safety processes ACMVET201A Carry out veterinary nursing reception duties ACMVET202A Carry out daily clinic routines ACMVET203A Assist with surgery preparation ACMVET401A Coordinate patient admission and discharge ACMVET402A Apply imaging routines ACMVET403A Perform clinic pathology procedures ACMVET404A Perform clinic office procedures ACMVET405A Carry out surgical nursing routines ACMVET406A Nurse animals ACMVET407A Carry out medical nursing routines ACMVET408A Coordinate and perform theatre routines ACMVET409A Provide specific animal care advice ACMVET410A Carry out veterinary dental nursing procedures ACMVET411A Prepare, deliver and review animal care education programs ACMVET412A Coordinate clinic promotional activities ACMVET413A Develop and implement specific clinic policies ACMVET414A Nurse foals ACMVET415A Provide intensive foal care and nursing

Total for review

49

YEAR	PRIORITY SKILLS	QUALIFICATION CODE & NAME	UNIT OF COMPETENCY CODE & NAME
2018	Skills in animal health surveillance technologies	ACM40412 Certificate IV in Veterinary Nursing Certificate ACMSS00001 Microchip Implantation for Dogs and Cats Skill Set	ACMMIC401A Implant microchip in cats and dogs ACMXXXXXX Mapping animal data using GIS ACMXXXXXX Drone surveillance of animals ACMXXXXXX Animal data collection methods ACMXXXXXX Interpretation and analysis of animal health data ACMXXXXXX Operation and installation of data loggers
			Total for review 1

PROPOSED ACM UNITS TO BE CHECKED FOR CURRENCY AND POSSIBLY REVIEWED AS PART OF THE FOUR-YEAR CYCLE			
YEAR	SPECIALISATION	QUALIFICATION CODE AND NAME	UNIT OF COMPETENCY CODE AND NAME
2019	Animal Technology	ACM30210 Certificate III in Animal Technology ACM50110 Diploma of Animal Technology	ACMATE301A Work within an animal technology facility ACMATE303A Prepare for and monitor anaesthesia in animals ACMATE304A Conduct non-surgical procedures on animals ACMATE305A Conduct euthanasia of research animals ACMATE501A Manage compliance in animal technology ACMATE502A Manage and maintain the health of research animals

PROPOSED ACM UNITS TO BE CHECKED FOR CURRENCY AND POSSIBLY REVIEWED AS PART OF THE FOUR-YEAR CYCLE			
YEAR	SPECIALISATION	QUALIFICATION CODE AND NAME	UNIT OF COMPETENCY CODE AND NAME
			ACMATE503A Carry out post-mortem examination of a research animal ACMATE504A Administer anaesthesia and perform surgery on animals for scientific purposes ACMATE505A Carry out advanced breeding procedures ACMATE506A Assist to collect and transfer embryos of mice ACMATE507A Manage the parturition of transgenic mice or rats
2019	Equine	ACM40512 Certificate IV in Equine Dentistry	ACMEQD401A Work within an equine dental service provision framework ACMEQD402A Determine equine oral function efficiency ACMEQD403A Identify potential health impacts of equine oral conditions ACMEQD404A Conduct equine oral inspection and assessment and plan equine dental treatment ACMEQD405A Perform routine dental correction and oral care using manual instruments ACMEQU403A Relate musculoskeletal structure to horse movement ACMEQU404A Evaluate fit of saddlery and equipment
2020	General Animal Studies	ACM10110 Certificate I in Animal Studies	ACMGAS101A Investigate job opportunities in animal care and related industries ACMGAS102A Catch and handle a range of quiet animals

PROPOSED ACM UNITS TO BE CHECKED FOR CURRENCY AND POSSIBLY REVIEWED AS PART OF THE FOUR-YEAR CYCLE			
YEAR	SPECIALISATION	QUALIFICATION CODE AND NAME	UNIT OF COMPETENCY CODE AND NAME
			ACMGAS103A Assist in the care of animals ACMGAS304A Carry out simple breeding procedures
2020	Grooming	ACM30612 Certificate III in Pet Grooming ACM40612 Certificate IV in Pet Styling	ACMGRM301A Perform dog grooms on different coat types ACMGRM302A Perform a cross breed clip ACMGRM401A Carry out breed standard styling on Gun dog, Working dog and Hound dog breed groups ACMGRM402A Carry out breed standard styling on Non-sporting and Toy dog breed groups ACMGRM403A Carry out breed standard styling on Terrier and Utility dog groups ACMGRM404A Provide creative styling for dogs ACMGRM405A Carry out styling on cats of different breed and coat type
2020	OHS		ACMOHS501A Manage occupational health and safety processes
2020	Veterinary Nursing	ACM50412 Diploma of Veterinary Nursing (Emergency and Critical Care) ACM50512 Diploma of Veterinary Nursing (General Practice) ACM50312 Diploma of Veterinary Nursing (Dental) ACM50212 Diploma of Veterinary Nursing (Surgical)	ACMVET501A Manage nursing requirements for specialised surgical procedures ACMVET502A Carry out post-operative nursing routines ACMVET503A Produce veterinary dental oral cavity radiographs ACMVET504A Provide veterinary dental nursing support for advanced veterinary dental surgery ACMVET505A Prepare for emergency response

PROPOSED ACM UNITS TO BE CHECKED FOR CURRENCY AND POSSIBLY REVIEWED AS PART OF THE FOUR-YEAR CYCLE			
YEAR	SPECIALISATION	QUALIFICATION CODE AND NAME	UNIT OF COMPETENCY CODE AND NAME
			ACMVET506A Perform emergency procedures to sustain life ACMVET507A Provide nursing support for critical care surgery ACMVET508A Support veterinary practice communication and professional development ACMVET509A Manage veterinary nursing procedures ACMVET510A Apply veterinary nursing pathophysiology ACMVET511A Apply principles of animal behaviour

ATTACHMENT B

Current IRC Projects for the Animal Care and Management Industry Sector

YEAR	PROJECT	QUALIFICATION CODE & NAME	UNIT OF COMPETENCY CODE & NAME
2017	Veterinary Nursing Qualifications and Unit Review	ACM20110 Certificate II in Animal Studies ACM40412 Certificate IV in Veterinary Nursing ACM50412 Diploma of Veterinary Nursing (Emergency and Critical Care) ACM50512 Diploma of Veterinary Nursing (General Practice) ACM50312 Diploma of Veterinary Nursing (Dental) ACM50212 Diploma of Veterinary Nursing (Surgical)	Development of new units ACMGAS3XX Identify animal anatomy and physiology for animal care work ACMGAS3XX Communicate effectively in a veterinary practice ACMVET4XX Provide nutritional advice and support for animals ACMVET4XX Assist with preparation of pharmaceutical products for animals ACMVET4XX Prepare for anaesthesia and monitor animal anaesthesia and analgesia Review of existing units ACMEQU401A Relate equine anatomical and physiological features to equine health care requirements ACMEQU402A Determine nutritional needs in provision of horse health care ACMEQU405A Maintain and monitor horse health and welfare ACMGAS202A Participate in workplace communications ACMGAS204A Feed and water animals ACMGAS205A Assist in health care of animals ACMGAS208A Source information for animal care needs

		<p>ACMINF301A Comply with infection control policies and procedures in animal work</p> <p>ACMSPE301A Provide basic care of amphibians</p> <p>ACMSPE302A Provide basic care of birds</p> <p>ACMSPE303A Provide basic care of common native mammals</p> <p>ACMSPE304A Provide basic care of dogs</p> <p>ACMSPE305A Provide basic care of domestic cats</p> <p>ACMSPE306A Provide basic care of marine fish</p> <p>ACMSPE307A Provide basic care of freshwater fish</p> <p>ACMSPE308A Provide basic care of marine aquatic invertebrates</p> <p>ACMSPE309A Provide basic care of terrestrial and freshwater invertebrates</p> <p>ACMSPE310A Provide basic care of mammals</p> <p>ACMSPE311A Provide basic care of non-venomous reptiles</p> <p>ACMSPE312A Provide basic care of rodents and rabbits</p> <p>ACMSUS301A Implement and monitor environmentally sustainable work practices</p> <p>ACMSUS401 Implement and monitor environmentally sustainable work practices</p> <p>ACMVET201A Carry out veterinary nursing reception duties</p> <p>ACMVET202A Carry out daily clinic routines</p> <p>ACMVET203A Assist with surgery preparation</p> <p>ACMVET401A Coordinate patient admission and discharge</p> <p>ACMVET402A Apply imaging routines</p> <p>ACMVET403A Perform clinic pathology procedures</p>
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		<p>ACMVET404A Perform clinic office procedures</p> <p>ACMVET405A Carry out surgical nursing routines</p> <p>ACMVET406A Nurse animals</p> <p>ACMVET407A Carry out medical nursing routines</p> <p>ACMVET408A Coordinate and perform theatre routines</p> <p>ACMVET409A Provide specific animal care advice</p> <p>ACMVET410A Carry out veterinary dental nursing procedures</p> <p>ACMVET411A Prepare, deliver and review animal care education programs</p> <p>ACMVET412A Coordinate clinic promotional activities</p> <p>ACMVET413A Develop and implement specific clinic policies</p> <p>ACMVET414A Nurse foals</p> <p>ACMVET415A Provide intensive foal care and nursing</p> <p>ACMVET501A Manage nursing requirements for specialised surgical procedures</p> <p>ACMVET502A Carry out post-operative nursing routines</p> <p>ACMVET503A Produce veterinary dental oral cavity images</p> <p>ACMVET504A Provide veterinary dental nursing support for advanced veterinary dental surgery</p> <p>ACMVET505A Prepare for emergency response</p> <p>ACMVET506A Perform emergency procedures to sustain life</p> <p>ACMVET507A Provide nursing support for critical care surgery</p> <p>ACMVET508A Support veterinary practice communication and professional development</p>
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		<p>ACMVET509A Manage veterinary nursing procedures</p> <p>ACMVET510A Apply veterinary nursing pathophysiology</p> <p>ACMVET511A Apply principles of animal behaviour</p> <p>ACMWHS301A Contribute to workplace health and safety processes</p> <p>ACMWHS501A Manage work health and safety processes</p>
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