



Animal Care and Management Industry Skills Report



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Acknowledgement of the work of IRCs

We acknowledge the work of the members of Industry Reference Committee (IRC) in the preparation of this report and continuing phases of the project. Their voluntary participation and provision of intelligence and data makes the compilation of this information possible.

This report has been developed from six years of contributions from the Industry Reference Committee.

Acknowledgement of Country

Aboriginal and Torres Strait Islander peoples have a proud and continuous connection to Australia's land and waters. We acknowledge the traditional owners and custodians, and the continuing connection of Aboriginal and Torres Strait Islander peoples to the lands, waters and communities. We pay our respects to Elders and Leaders, past and present, and to all Aboriginal and Torres Strait Islander peoples who have supported our work.

We acknowledge the importance of learning from Aboriginal and Torres Strait Islander peoples' unique history of land and ecosystem management, art, culture and society. Their connections are particularly important given our involvement in work directly connected to utilisation, care and stewardship of Australia's land, waters and ecosystems, and the animals, trees and plants that thrive across Australia.

The Industry Reference Committees and Skills Impact have been working to develop improved participation of Aboriginal and Torres Strait Islander enterprises, businesses, communities and people in our work. We will continue to work to develop strong, mutually beneficial relationships with Aboriginal and Torres Strait Islander partners who can help us deliver better outcomes for Aboriginal and Torres Strait Islander peoples, recognising their expertise in improving quality of life, employment opportunities and skills outcomes in their communities and for the whole of Australia.

Purpose

Skills Impact has prepared this Industry Skills Report at the request of the Animal Care and Management Industry Reference Committee (IRC). It provides in-depth information about industry-specific skills and issues covered in the *Agribusiness, Food and Fibre Industries Skills Report*.

As one of nine industry-specific Skills Reports with matching structures, this document is designed to assist collaboration across industries and the streamlining and reform of the Australian skills and VET system. This may aid the implementation of the Skills Minister's Priorities by supporting:

- greater labour mobility through stronger recognition of cross-sector and transferable skills
- better use of industry and educator expertise to ensure better quality outcomes
- improved pathways advice to support lifelong learning and build peoples' labour market resilience
- Australia's capacity to grow, compete and thrive in the global economy, especially in context of the concurrent impacts of COVID-19, automation and digital transformation on the skills required for jobs now and into the future.

The IRC requested that this report be prepared to support improvements in the skills system, including work on:

- industry workforce planning and strategies to address workforce shortages
- documenting shared standards and regulations across industries to support end-to-end systems planning and avoid duplication
- the provision of evidence, data and intelligence to add value for industries beyond a narrow focus on training package development, and to inform future Industry Clusters or similar bodies approved to undertake work within the Australian skills and VET system
- creating foundations for potential qualification reforms with a greater emphasis on skills families and portable skills
- identifying shared 'skills domains' to aid in simplifying and streamlining national VET qualifications across industry groupings.

Key Findings and Priorities

The animal care and management industry has experienced accelerated growth in service sectors, as pet ownership has experienced almost 10% growth over the last two years. While career opportunities are available, there are issues attracting labour, especially in regional, rural and remote Australia.

While much of the industry is regulated directly through occupations, and all of the industry is regulated through relevant legislation relating to animal welfare, there are numerous examples of work being performed outside of either environments which are either regulated or feature a substantially trained and qualified workforce. The IRC considers the need to promote qualifications as a foundation standard for working with animals across all sectors, whether through regulation or other means, as important to improved animal welfare outcomes.

The industry remains difficult to properly identify given the lack of relevant and appropriate ANZSCO and ANZSIC classifications. This issue will need to be addressed to support future industry growth and relevant data collection.

The IRC has identified priorities for consideration by the new Industry Cluster body (assuming establishment proceeds), including:

- review of qualifications in veterinary nursing, including addressing mandatory workplace requirements consistent with new standards introduced in 2022
- review of Animal Technology qualifications, including replacement of superseded units
- working with other agribusiness, food and fibre industries on research and planning projects to identify and address skills gaps related to traceability, provenance and blockchain
- identifying digital skills needs using the Digital Workforce Capability and VET framework currently in development (along with other digital capability frameworks).

Signed on behalf of the Animal Care and Management Industry Reference Committee:



Chair: Dr. Julia Crawford

Date: 26/09/2022

Industry Reference Committee

The Animal Care and Management IRC is responsible for national training package qualifications relevant to the animal care and management industry sectors.

Qualifications overseen by the IRC are in the ACM Animal Care and Management Training Package.

The Animal Care and Management IRC is supported by the Skills Service Organisation, Skills Impact.

Name	Organisation or Area of Expertise
Dr Julia Crawford (Chair)	Australian Veterinary Association (AVA)
Rebecca Coventry (Deputy Chair)	Veterinary Nurses Council of Australia (VNCA)
Belinda Smith	Expertise in veterinary and related services
Brenton Myatt	Expertise in pet and companion animal services
Julie Fiedler	Expertise in animal care, handling and welfare
Kaye Hargreaves	Expertise in pet and companion animal services
Michael Butcher	Expertise in animal control and regulation
Natalie Stunnell	Expertise in animal technology
Michelle Storey	Expertise in veterinary and related services
Dr Tim Mather	Expertise in animal care, handling and welfare
Dr Bonny Cumming	Expertise in veterinary and related services
Ron Fleming	Expertise in animal breeding services
Vacant	Taronga Conservation Society Australia
Vacant	Expertise in captive wildlife operations

Method

Industry Reference Committees oversee the work of Skills Service organisations in the collection and analysis of industry intelligence, which is used to:

- Identify industry skills needs and challenges
- Identify issues and potential improvements to the Skills and VET system
- Provide the basis for work to update VET training package products
- Provide an information source for industry to assist with business, workforce, skills and training planning.

The information in this report has been collated from a variety of sources identified by Industry Reference Committee members and industry stakeholders who have participated in consultations with Skills impact. It also utilises data and information from official sources and major commercial providers through the assistance of the Australian Government Department of Education, Skills and Employment.

Environmental Analysis

Whole of Value Chain Approach

The animal care and management value chain encompasses stakeholders who are often linked in cooperative and collaborative relationships to provide consumers with products and services. These include up- and down-stream suppliers, animal ethicists, wildlife conservationists, laboratory workers, veterinary pharmaceutical manufacturers, animal feed processors, farmers, breeders, shelters and boarding services, animal rescue services, veterinary services (consisting of regulated veterinary practitioners and animal hospitals), animal therapy services, pet insurance services, transport services, assistance animal services (e.g. guide dogs), traders (including wholesalers), pet product manufacturers and processors, zoos and other exhibited animal businesses, hunters and trappers, pet groomers, animal behaviourists and trainers, animal attendants, dog walkers, sport industry participants (e.g. horse and greyhound racing, dressage, endurance riding, eventing, reining, show jumping, para-equestrian, vaulting, polo, campdrafting, cutting, driving, and rodeo), inspectors and regulatory officers, and retailers.

Animal care and management value chain operations are shaped by external factors such as consumer demand and household discretionary income, as well as by trends in the buying and selling industries that form partnerships with animal care and management businesses. The RSPCA has demonstrated the value of animal welfare approaches to agricultural and animal-related industries, as outlined in the *Agribusiness, Food and Fibre Industries Skills Report*.

During COVID-19 restrictions in 2020 and 2021, there was a boom in pet ownership, with 69% of households now having a pet, compared with 61% two years previously. The demand for companion animal services and products has correspondingly been on the rise. Animal Medicines Australia report that dog owners in Australia spent a total of \$20.5 billion in 2020-2021, while cat owners spent \$10.2 billion. The evolution of pet-related consumption behaviours has meant owners are seeking new and greater amounts of information, food, accessories, medicines, therapies and veterinary care. As a result, value chains have experienced pressures to respond to elevated and changing demands and to take advantage of opportunities for new and expanding businesses. For example, ingredients, nutritional information and packaging have become important variables that pet food processors must consider when responding to consumer demands, which has a significant impact on value chain operations, including ingredient suppliers, the adoption of **Traceability, provenance and blockchain** systems (see Figure 1), processing methods, marketing materials and volume of production.

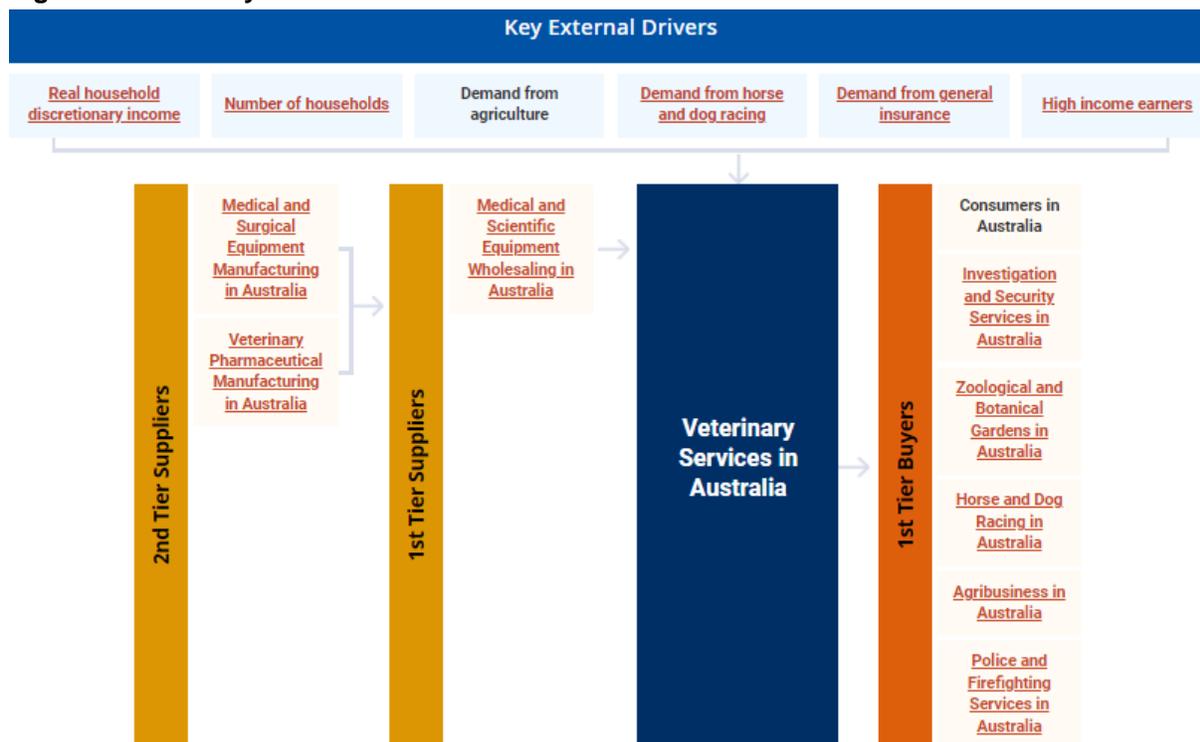
Figure 1: Factors considered when making decisions about what to feed pets (%)



Source: Animal Medicines Australia (2021); *Pets and the Pandemic*; p.27

The relative prosperity of any of the suppliers or buyers, or key external driver trends (see Figure 2), can have a substantial impact on businesses or sectors across the value chain. This means organisations require the skills and knowledge to work with industry partners to ensure the continuation of value and supply chains, and to design risk management strategies should disruptions (e.g. pandemics, extensive flooding, and associated financial stresses) affect these systems. For example, veterinary services have been affected by disruptions to suppliers, buyers or drivers, detailed in the figure below, and must consider a whole of value chain approach to support any necessary adaptations to market volatility. This includes responding to difficulties in procuring medicines, pet food and veterinary equipment.

Figure 2: Veterinary services value chain



Source: IBISWorld (2022); *Veterinary Services in Australia*

Projects are being conducted by various bodies to support value chain operations; for example, a Victorian Pet Census will be conducted in 2023 using an online survey to collect data on pet ownership and welfare issues, including general matters relevant to pet health (e.g. diet and exercise), and the costs and services associated with purchasing and caring for pets¹. Animal Management in Rural and Remote Indigenous Communities (AMRRIC) regularly collect censuses as part of their monitoring and evaluation and are currently undertaking Animal Management Needs Assessments in partnership with Far North Queensland Indigenous Local Government Authorities².

Traceability, provenance and blockchain

As outlined in the *Agribusiness, Food and Fibre Industries Skills Report*, traceability, provenance and blockchain technology are continuing to grow in importance across the whole sector. Rapid advancements in technology, notably blockchain systems, have improved the abilities of most sectors to trace and protect animals and associated products across the value chain.

Such systems are used for various outcomes in the animal care and management industries, notably:

- to verify the origin of a companion animal (associated with breed information) and help eliminate fraud or illegal breeding
- microchipping (in Victoria, as in other states, it is a requirement to microchip all cats and dogs

¹ Premier of Victoria (2022); *Every Pet Counts: Delivering The First Pet Census*; <https://www.premier.vic.gov.au/every-pet-counts-delivering-first-pet-census>; viewed 04/08/2022.

² AMRRIC (2022); *Animal Management Needs Assessments underway in FNQ*; <https://www.amrric.org/uncategorized/view/animal-management-needs-assessments-underway-in-fnq/>; viewed 04/08/2022.

before they are sold or given away)³

- proof of vet checks, and vaccinations
- to ensure any contaminated pet food products are recalled and the source of contamination identified
- to safeguard export animals' welfare
- to track the movement of exotic animals as they are transported between exhibiting organisations such as zoos.

Capital investment and training provision

Capital investment in the animal care and management industries is essential for lifting productivity and is required across the value chain. Access to efficient capital is a key driver for strong, sustained sectoral growth over the short, medium and longer terms; however, the level of capital investment in animal care and management has not kept pace with the consumption of capital over the last decade. Bridging the investment gap requires action from governments, industry and businesses to attract new capital, to reduce volatility and risk, and support growth.

As ownership of companion animals continues to rise, so too are complementary services and welfare procedures. With the trend of 'humanising' our pets and the 'premiumisation' of their care, there is increasingly demand for sophisticated treatment options. Some owners are willing to pay for innovative and technologically advanced veterinary care, including preventative medications, diagnostic and screening tools, imaging (MRIs and other scans), surgical procedures, and allied health products and therapies⁴ (though, it must be noted, other owners are unable to afford even basic veterinary services).

Veterinary and care services face pressures to invest in the latest tools and technologies, and face difficulties recruiting for leadership roles to determine the most effective use of technology and investments across the value chain. Training providers, meanwhile, experience challenges in accessing advanced equipment, such as endoscopy and ultrasound, in order to develop the capabilities of the next generation of animal care and management workers. This can particularly disadvantage students in rural and remote areas.

Similar challenges are experienced by zoos, wildlife sanctuaries, aquariums or other facilities where animals are cared for or exhibited. Providing safe and comfortable enclosures with 'natural' habitats for exhibited animals to have a capacity for 'normal' species behaviour, feeding them, handling them humanely, transferring them between locations, and providing veterinary care requires high capital intensity. Public zoos and aquariums usually generate most of their revenue through admission fees and retail sales, and tend to use government funding for capital works, conservation programs, research, and rehabilitation of endangered animals. The COVID-19 pandemic greatly impacted on visitor numbers and revenue. There have been resulting struggles to retain staff, train new staff, maintain functional necessities (like feeding the animals) and even to continue operating. State and federal governments have provided support packages to help maintain animal welfare standards; however, stakeholders have reported that returning fully to 'business as usual' requires investing in the skills of the workforce. The ways in which the new industry engagement arrangements will encourage this are discussed in greater detail in the **Business & Workforce Summary** and **Training Summary** below.

Current crossovers and divisions of the value chain in the VET system

The protection and support of the whole value chain is critical for the continuation of the animal care and

³ Premier of Victoria (2022); *Protecting Our Pets From Dodgy Breeders*; <https://www.premier.vic.gov.au/protecting-our-pets-dodgy-breeders>; viewed 04/08/2022.

⁴ ProShares (2022); *Why Invest in the Pet Care Industry?*; <https://www.proshares.com/browse-all-insights/insights/why-invest-in-the-pet-care-industry/>; viewed 04/08/2022.

management industries. It has not always been possible to include the whole value chain within associated ANZSCO or ANZSIC codes, or training packages within the scope of a single Skills Service Organisation (SSO). However, acknowledging inter-connections and interdependencies is becoming increasingly important because of the impact that issues in one area can have on other areas, or even across all areas of the value chain.

The importance of identifying and monitoring systems that cross over the value chain has been highlighted by recent concerns over food contamination (for example, toxic horse meat being traced in pet food) and social activism incidents that have disrupted agricultural production. These events require prompt actions be taken and a clear understanding of which links in the value chain are affected so that service providers, producers, processors, wholesalers, retailers and consumers can adapt accordingly.

In the Australian skills and VET context, distinguishing affected parts of the value chain helps to identify priority work on cross-sector projects or where relationships need to be established with oversight bodies to ensure their appropriate involvement in skills and VET development. It also facilitates the identification of transferable skills (and skills gaps) for people working between industries, and who may seek future employment in different occupations and sectors.

Please see the *Agribusiness, Food and Fibre Industries Skills Report* for accounts of the various overlaps between the animal care and management industry and the other industries covered by that report. Further connections include:

Tourism and Hospitality

The tourism and hospitality industries currently sit within the *Tourism, Travel and Hospitality (SIT) Training Package* under the oversight of the Tourism, Travel and Hospitality Industry Reference Committee (IRC), with secretariat work undertaken by an external Skills Service Organisation. The *SIT Training Package* comprises four broad areas: tourism, hospitality, events and travel. Of these, tourism very strongly connects with animal care and management. Tourism is a national industry, and is particularly critical to regional, rural and remote communities and economies. A significant proportion of the tourism industry involves animal-related recreation and wildlife activities.

Many animal care and management businesses and operators undertake activities and services through tourism functions, including:

- marine animal tourism
- horse riding and trail riding
- zoos, wildlife sanctuaries, aquariums and other exhibited animal facilities.

Sport, Fitness and Recreation

These industries currently sit within the *Sport, Fitness and Recreation (SIS) Training Package* under the oversight of the Sport and Recreation Industry Reference Committee, with secretariat work undertaken by an external Skills Service Organisation. The *SIS Training Package* comprises four broad areas: sport, fitness, outdoor recreation and community recreation. A significant proportion of the activities in these areas involve animals, requiring skills in their management, handling, exercise, wellbeing and care, training, coaching, administration and facilities.

Other connections with VET training packages

The animal care and management industry also intersects with industries that utilise or encounter animals as part of their work, or which provide transferable skills relevant to roles in animal care and management. This includes industries supported by the following training packages:

- AHC - Agriculture, Horticulture and Conservation and Land Management
- BSB - Business Services
- CHC - Community Services
- CPP - Property Services
- DEF - Defence
- FSK - Foundation Skills
- HLT - Health
- MSL - Laboratory Operations
- MST - Textiles, Clothing and Footwear
- PSP - Public Sector
- RGR - Racing and Breeding
- SIR - Retail Services
- TAE - Training and Education

Such is the relevance and portability of *ACM Animal Care and Management Training Package* products that there are 116 instances of ACM units being imported into non-ACM qualifications.

Biosecurity, Invasive Species and Pest Control

'Biosecurity' covers a multitude of processes and areas, including pest control, infection control, invasive and exotic species, and protection from zoonotic diseases. Biosecurity systems are now recognised as a primary factor in preserving human and animal health, regionally, nationally and internationally. Since the turn of the 21st Century, there have been outbreaks of avian and equine influenza, Ebola virus, bovine spongiform encephalopathy (BSE), and zoonotically transmitted diseases such as COVID-19, Lyssavirus and Hendra virus. At the time of writing, biosecurity systems are on high alert due to the ever-present threat of rabies and, now, the potential for foot-and-mouth disease to enter Australia from Indonesia, which could devastate the beef and sheep industries.

Approaches to biosecurity and pest control

Animal care and management workers play distinct and critical roles in implementing and enforcing international, national and state biosecurity protocols. This includes both proactive surveillance of the movement and distribution of animals, and reactive containment measures when there is a disease outbreak or the appearance of an invasive species. Responsibility for oversight of biosecurity is often with regulatory bodies under the guidance of qualified veterinary practitioners.

Response and preparedness activities

As noted in the *Agribusiness, Food and Fibre Industries Skills Report*, federal and state governments, industry and other key stakeholders support collaborative arrangements for Australia's biosecurity response planning and coordination. In the context of a One Health-driven strategy, and so alongside emergency plant pest response plans (PLANTPLAN⁵), the animal care and management industry have a critical role in biosecurity work, including:

- surveillance to monitor and detect signs of disease
- AUSVETPLAN (which comprises resources that guide responses and decision-making on identification of emergency animal disease, including by veterinarians)
- the National Biosecurity Response Team
- the Emergency Animal Disease Response Agreement (EADRA)
- the National Biosecurity Communication and Engagement Network

⁵ Plant Health Australia (2021); *PLANTPLAN*; <https://www.planthealthaustralia.com.au/biosecurity/incursion-management/planplan/>; viewed 04/08/2022.

- the National Horse Traceability Working Group is advancing a new national traceability system, with a biosecurity focus for horses, donkeys and mules⁶
- nationally agreed standard operating procedures
- modelling
- Australia's involvement in the International Animal Health Emergency Reserve.

Training opportunities are available across Australia to increase skills in emergency animal disease awareness and response management and operations. In-person emergency animal disease awareness and reporting training is provided to government officials and officers, veterinarians and livestock industry workers. Animal Health Australia offers an online Emergency Animal Disease Foundation course, as well as running two workshops per year.

Preparedness is also undertaken through vaccine banks, which are funded by state governments and the livestock industry to ensure rapid production, storage and delivery of vaccines for potential disease outbreaks, such as foot-and-mouth disease or anthrax.

It should be noted, however, that the Australian Veterinary Association have ongoing concerns over there being an insufficient number of veterinarians in rural, regional and remote areas to adequately assist with biosecurity control and response measures. Such shortages could have significant consequences, especially for Australian agriculture, should there be incursions of diseases such as foot-and-mouth and lumpy skin disease, which are present in Indonesia⁷. The view of the Veterinary Nurses Council of Australia (VNCA) is that there is scope for a greater role for veterinary nurses and veterinary technicians in assisting veterinarians in their biosecurity role in rural, regional and remote areas.

So far, state and federal reports on animal biosecurity have not suggested the need for additional training package products, with current qualifications, skill sets and units having proved fit for purpose in responding to a multitude of challenges. The Animal Care and Management Industry Reference Committee (ACM IRC) has been seeking constant feedback on potential changes to qualifications and skills standards; however, training package gaps have not been identified in the area of biosecurity. There are, however, currently biosecurity *skills* gaps, especially in remote communities, due in part to formal training delivery challenges⁸.

Zoonotic transmission

The risk of zoonosis is covered in the *Agribusiness, Food and Fibre Industries Skills Report*.

Animal Health Australia⁹ emphasises approaches to animal disease transmission risk management that will be familiar to many Australians from COVID-19 pandemic experiences, including:

- vaccination of animals and people handling them
- use of personal protection equipment (PPE)
- infection control procedures and hand washing.

Recent years have seen the greater movement of animals, whether due to the impact of human activity and

⁶ National Horse Traceability Working Group (2022); *National Horse Traceability System Reform: Consultation Information*

⁷ ABC News (2022); *Vet shortage puts Australia's biosecurity at risk as foot-and-mouth disease looms*; <https://www.abc.net.au/news/2022-05-11/vet-shortage-a-biosecurity-risk-as-foot-and-mouth-disease-looms/101052600>; viewed 11/05/2022.

⁸ AMRRIC (2022); *MEDIA RELEASE: Innovative AMRRIC App to aid collaborative remote Indigenous community animal health and biosecurity surveillance*; <https://www.amrric.org/news/view/media-release-amrric-app-indigenous-animal-health-biosecurity-surveillance/>; viewed 15/09/2022.

⁹ Animal Health Australia (2021); *Zoonotic Disease*; <https://animalhealthaustralia.com.au/zoonotic-disease/>; viewed 22/02/2022.

climate change on wildlife¹⁰, programs to re-home former racehorses and greyhounds¹¹, or the growth of pet ownership during COVID-19 restrictions¹². This requires vigilance to any emerging biosecurity risks or signs of the spread of disease.

Strict biosecurity measures must be followed to ensure the detection, containment and future prevention of disease, especially in high-risk areas. Dogs in northern WA and the NT, for example, have been contracting ehrlichiosis, which is spread by ticks infected with the bacteria, *Ehrlichia canis*¹³. State and territory governments have put in place conditions for dogs being moved out of northern Australia to reduce the spread of the disease. Ehrlichiosis is zoonotic but it is relatively rare for ticks to transmit the disease to humans (contact with infected dogs cannot pass the disease to humans)¹⁴. However, it is serious and often fatal for dogs and so requires that skills are developed and maintained for diagnosing, treating and supporting containment of the disease, as well as informing the public on prevention strategies, notably controlling ticks on dogs¹⁵. Shortages of veterinarians in rural and remote locations is a barrier to effective biosecurity procedures in this area.

Sustaining Animals

Complexity of care

Looking after animals, like caring for humans, is fundamentally different from tending to machinery, equipment and infrastructure, and requires skills that take into account the biological and behavioural complexities and variability of animals, and, where relevant, the importance of the human-animal bond.

The diversity of animals, including the growing range of pet species and breeds, is being reflected in the increasing number of animal care and management markets, including companion animal boarding, grooming and accessory services and products, and allied health services, such as nutrition, behaviour and training services, massage, physical therapy and rehabilitation, and alternative therapies. In addition, welfare services for wildlife and companion animals during natural disasters is a growing field.

These markets no longer represent niche sectors – demonstrated by the large corporations and franchise operations that are harnessing associated economic opportunities. However, there is limited data available on the size and growth of these emerging markets to inform broader articulation and planning strategies at local, state and federal government levels. The complexity of the animal care and management industries continues to be under-represented in the ANZSIC and ANZSCO classifications, which potentially constrains market growth, the value assigned to emerging occupations and, in some cases, the quality of care that animals may receive.

Regardless, the growth of these markets is a very strong indicator of consumer support for high standards of care. There may be a need to develop training and assessment to ensure appropriate animal welfare standards are applied across the industry. There is considerable support for increased regulation of animal care and management markets and occupations (e.g. veterinary nurses in WA must hold a *Certificate IV in Veterinary Nursing* to gain a licence, whereas in other states registration is not mandatory), as the ACM IRC have reported to the Australian Industry and Skills Committee (AISC) in previous Skills Forecasts and Annual Updates. While qualifications, skill sets and units cannot be used as proxies for regulation, it is essential that training is available to meet any future regulatory needs.

¹⁰ M. Strom (2021); *Human activity forces animals to move 70 percent further to survive*; <https://www.sydney.edu.au/news-opinion/news/2021/02/02/Human-activity-forces-animals-move-further-to-survive-ecology-hunting.html>; viewed 15/09/2022.

¹¹ Greyhound Racing Victoria (2022); *GAP Greyhound Adoption Program*; <https://gap.grv.org.au/>; viewed 15/09/2022.

¹² Animal Medicines Australia (2021); *Pets and the Pandemic*

¹³ Government of Western Australia (2020); *Ehrlichiosis in dogs (Ehrlichia canis)*; <https://www.agric.wa.gov.au/ehrlichiosis>; viewed 09/11/2021.

¹⁴ Wildlife Health Australia (2020); *Canine ehrlichiosis in Australia Fact sheet*

¹⁵ NSW Department of Primary Industries (2022); *Ehrlichiosis in dogs (Ehrlichia canis) - Primefact*

Animal welfare standards and services

Companion animals

Animal welfare laws are generally under the jurisdiction of state governments. For example, in 2022, Queensland is preparing its most significant animal welfare law reforms in more than 20 years by reviewing the *Animal Care and Protection Act 2001*¹⁶. Key amendments will include the banning of inhumane practices like using pronged collars, which are designed to train or restrain animals by hurting them. Other key amendments include the strengthening of inspectors' enforcement powers and allowing pregnancy testing of cattle by accredited laypersons, veterinary nurses and veterinary technicians to support high levels of animal health care and welfare. Implementing such reforms requires animal attendants, trainers, veterinary service workers, inspectors and regulatory officers to develop high levels of skill and knowledge.

A *Draft Animal Welfare Bill 2022* has been released in NSW as the penultimate step in implementing the NSW Government's commitment to introducing modern animal welfare laws¹⁷. The proposed reforms were instigated following reports of increased animal cruelty during COVID-19, especially by unauthorised breeders¹⁸. Over 6,000 responses from the NSW community were received to support the development of the draft bill.

State governments are also investing in enhanced animal welfare services and shelters. For example, to meet growing pressure on its services as populations and pet ownership increase, new funding has been approved for improving animal welfare services in the Ballarat region of Victoria, including for the development of a new facility to care for lost, stray or surrendered companion animals¹⁹. In 2020-2021, the facility being replaced cared for 2,136 animals, including dogs, cats, rabbits and birds. Due to capacity pressures, the new building will have the space to house 100 additional animals, with improved holding pens and infection control resources.

In WA, the state government has announced an Animal Welfare Grant Program worth \$500,000 for 16 community-based projects to promote the wellbeing of companion animals and rescued wildlife. One of the projects receiving subsidies is 'Spay it Forward', which will offer desexing and microchipping of cats and dogs to concession card holders or families in need of support²⁰.

Please see the **Rural, Regional & Remote Summary** for a discussion of some of the challenges associated with implementing animal welfare legislation.

Animal welfare across value chain industries

Animal care and management stakeholders have been key contributors in articulating animal welfare standards across the value chain, as outlined in the *Agribusiness, Food and Fibre Industries Report*.

This includes work with specific industries requiring social licenses based on animal welfare, notably greyhound and horse breeding and racing. For example, the Board of Equestrian Australia (EA) voted to implement the Fédération Equestre Internationale (FEI) rule to ban the trimming of horse sensory hairs

¹⁶ Queensland Government (2022); *Queensland's animal welfare laws to be amended*; <https://statements.qld.gov.au/statements/95114>; viewed 08/05/2022.

¹⁷ NSW Government (2022); *Animal Welfare Reform*; <https://www.dpi.nsw.gov.au/animals-and-livestock/animal-welfare/animal-welfare-reform>; viewed 15/09/2022.

¹⁸ ABC News (2020); *Agriculture Minister pushes for 'eight-fold' increase in penalties for animal cruelty offences as COVID-19 sees surge in 'unscrupulous' breeders*; <https://www.abc.net.au/news/2020-11-08/nsw-animal-cruelty-laws-pet-demand-increases-in-covid19/12860608>; viewed 15/12/2020.

¹⁹ Premier of Victoria (2022); *Supporting Much-Loved And Lost Pets In Ballarat*; <https://www.premier.vic.gov.au/supporting-much-loved-and-lost-pets-ballarat>; viewed 06/05/2022.

²⁰ Government of Western Australia (2022); *All creatures great and small helped with animal welfare grants*; <https://www.mediastatements.wa.gov.au/Pages/McGowan/2022/04/All-creatures-great-and-small-helped-with-animal-welfare-grants.aspx>; viewed 13/04/2022.

across all EA National Disciplines from 1st July 2021 in the interests of horse welfare²¹.

In January 2020, groups from racing and breeding began collaboration on a national review to ensure implementation of an industry framework for the welfare of thoroughbreds throughout different stages of their life. An independent panel, the Thoroughbred Aftercare Welfare Working Group (TAWWG), was established to conduct the inquiry and released *A Framework for Thoroughbred Welfare* in 2021²². Key information sharing and deliverables were set out in each section:

- national and industry standards
- welfare regulation and policy
- traceability and data
- sustainable racing and aftercare
- re-training and rehoming
- end-of-life responsibilities
- research, education and communication.

There were 46 recommendations made across these sections, including that, with the support of industry, governments should develop national welfare standards for all horses. These do not currently exist for horses as they do for other species, such as cattle and sheep. This would mandate minimum care for horses at all stages of life, including for thoroughbreds after they exit racing and breeding.

There were also calls for increased skills and formal training:

'Many workers in the industry play a key role in horse development and behaviour. Often many have had little formal training. Improving the skills of the workforce will improve welfare outcomes. [...] There are benefits of learning skills and building knowledge while in the workforce, but there is an increasing awareness in the industry of the needs and benefits of more formal training and education.'

Thoroughbred Welfare Initiative (2021); The most important participant: A Framework for Thoroughbred Welfare; pp.117 and 120.

However, the report also notes the lack of registered training organisations (RTOs) willing to deliver relevant qualifications and training (due to issues such as the prohibitive expense of funding equipment and resource acquisition).

Ecosystem and Biodiversity Management, and Climate Adaptation

The animal care and management industries contribute to the skills that are applied in managing the protection, sustainability and health of Australia's ecosystem outlined in the *Agribusiness, Food and Fibre Industries Skills Report* (which also contains discussion of the *Australia State of the Environment 2021* report). The conservation and movement of animal species are critical aspects of ecosystem management, both in the wild and in government-managed reserves and national parks.

In the sector comprising wildlife sanctuaries, aquariums or other animal exhibition facilities, public expectations have been shifting over the past five years towards observing animals in larger enclosures or open-range zoos. This trend has been driven by growing environmental awareness and interest in sustaining biodiversity. Many consumers have become increasingly concerned over animal rights, resulting in demands for animals to be kept in larger spaces. Many zoos have accordingly removed old concrete enclosures and cages and placed animals in more natural environments with room to roam. Open-range

²¹ Equestrian Australia (2021); *Whiskers to Stay Put*; <https://www.equestrian.org.au/news/whiskers-stay-put>; viewed 15/09/2022.

²² Thoroughbred Welfare Initiative (2021); *The most important participant: A Framework for Thoroughbred Welfare*; Report of the Thoroughbred Aftercare Welfare Working Group.

safari zoos have particularly benefited due to this trend²³.

Climate and carbon

Climate change in Australia is affecting animal habitats and, consequently, animal movement, species' overall distribution, and the incidence of diseases²⁴.

The Australian Veterinary Association acknowledge that:

'Climate change is negatively affecting animal health and welfare throughout wild and managed terrestrial and aquatic environments. It is also affecting animal productivity and food supply, and the geographical distribution and spread of diseases in animal and human populations. The inter-related dependencies between humans and animals are also vulnerable to climate change.'
Australian Veterinary Association (2022); Climate change and animal health, welfare and production; <https://www.ava.com.au/policy-advocacy/policies/environment-and-conservation/climate-change-and-animal-health-welfare-and-production/>; viewed 25/05/2022.

With climate change comes increasingly frequent natural disasters, which are directly linked to the mass deaths of mammals, birds and fish. For example, many native mammals, birds and reptiles were injured, displaced or killed in the 2019–2020 bushfires in Australia, and there were substantial losses of cattle and sheep. Many more animals were injured, and managing pain and stress is a considerable challenge for animal care and management services.

Climatic change is altering the habitat and range of many species. The movement of animals as they seek new food sources and habitats introduces many animal and human disease vectors, such as ticks and mosquitos, and the carriers for these diseases (bats, feral pigs, deer) to new places. This results in:

- first interactions between hitherto distant species and habitats, with risks of new diseases or environmental damage occurring
- the movement of diseases into areas where they were previously not present, raising the possibility of diseases 'jumping' from animals to humans (zoonosis)²⁵.

In consideration of the various challenges brought by climate change, the Australian Veterinary Association recommend that the veterinary 'profession should engage with training bodies including the veterinary schools to embed content on climate change and its mitigation in curricula', as well as collaborating with other professions and groups with the objective of reducing the negative impact of climate change on animals and their habitats²⁶.

There is also a need for adaptation and resilience in developing the skills, knowledge and resources to respond effectively to animal emergencies arising from climate change-induced natural disaster events (see **Natural disaster planning, response and recovery** below).

Digital & Automation Practices

Animal care and management businesses are often early and enthusiastic adopters of digital technology. The largest companies within the industry, including Greencross and Vet Partners, are adopting additional technologies and practices sooner than most as part of their business expansion and service diversification

²³ IBISWorld (2022); *Zoological and Botanical Gardens in Australia*

²⁴ AVA (2016); *Climate change and animal health, welfare and production; <https://www.ava.com.au/policy-advocacy/policies/environment-and-conservation/climate-change-and-animal-health-welfare-and-production/>; viewed 09/11/2021.*

²⁵ Animal Health Australia (2019); *Megatrends, Opportunities and challenges facing Australian livestock industries*; p.15.

²⁶ Australian Veterinary Association (2022); *Climate change and animal health, welfare and production; <https://www.ava.com.au/policy-advocacy/policies/environment-and-conservation/climate-change-and-animal-health-welfare-and-production/>; viewed 25/05/2022.*

strategies.

Many pet owners are spending more money on services to enhance and extend their pets' lives, while pet insurance uptake is rising, and animal health TV shows are increasing consumer awareness of advanced companion animal services and products²⁷, including:

- VetChip, a biosensor technology that performs all the functions of a standard animal 'identity microchip', but also acts as a smart animal health monitor²⁸
- Ceres tags, which use GPS to track animal movements, providing owners (whether of companion or farm animals) with valuable insights on behaviour, and alerts for unusual activity²⁹
- Apps such as Vedi have been developed to provide veterinary services and pet owners with health data and records, including from pathology labs, vaccination providers, and microchip registries³⁰

Furthermore, in recent years there has been increasing demand for specialised diagnostic, imaging and treatment procedures facilitated by digital technologies:

'Advanced technology used across the industry to treat animals includes veterinary equipment, such as ultrasound machines, X-ray machines, anaesthetic equipment, diagnostic equipment, and autoclaves (high-pressure and high-temperature sterilising machines).'

IBISWorld (2022); Veterinary Services in Australia; p.32

Further work is needed to identify whether the skills to take full advantage of digital products and practices are available for animal care service providers to support the work of qualified veterinarians, especially given the challenges experienced by many small businesses and rural, regional and remote operators in recruiting suitably skilled workers. This work could be undertaken as part of the ongoing project developing the Digital Workforce Capabilities Framework for VET.

During the COVID-19 pandemic, pet ownership has grown at the same time as increased restrictions have been intermittently applied within different states and territories. To cope with increased demand for their services, many veterinary services, especially in cities with few connectivity issues, began providing consultations to pet owners using teleconferencing and web-based technologies, such as Microsoft Teams and Zoom. While veterinary telehealth is not a new concept, the workforce needs skills for utilising digital technologies to maximise the effectiveness of their services. In recent years, research has identified a lack of knowledge around telehealth and telemedicine and has suggested the need for skills and education programs to address this, for the benefit of animal care service providers, clients, and patients alike³¹.

Various apps have also been developed to support socially distant pet care, including artificial intelligence apps to aid diagnostic processes³² and remote biosecurity operations. With \$1.26m in funding from the Department of Agriculture, Water and the Environment's Biosecurity Business Grants Program, Animal Management in Rural and Remote Indigenous Communities (AMRRIC) are leading a project to increase use of their custom-designed app to support the collection and reporting of community animal health and biosecurity data in remote communities. The app was designed in collaboration with Indigenous stakeholders from over 20 communities in Northern Australia to suit the specific contexts of remote communities. The app provides for flexible approaches, and includes the use of a user-friendly interface, extensive use of images and icons, minimal requirements for inputting text, and support to ensure the validity of data. This three-year collaborative project is expected to enhance biosecurity capacity in remote Indigenous communities and support Indigenous economic opportunities, including through the employment of over 40 people. The app should also help overcome challenges in Northern Australia

²⁷ IBISWorld (2022); *Veterinary Services in Australia*

²⁸ VetChip (2022); *VetChip*; <https://www.vetchip.com.au/>; viewed 15/09/2022.

²⁹ Ceres Tag (2022); *Ceres Tag*; <https://cerestag.com/>; viewed 15/09/2022.

³⁰ Vedi (2022); *Vedi*; <https://www.vedi.io/>; viewed 15/09/2022.

³¹ K. Watson, J. Wells, M. Sharma *et al.* (2019); A survey of knowledge and use of telehealth among veterinarians; *BMC Vet Res* 15, 474.

³² Vet Practice (2020); *AI in the veterinary industry*; <https://vetpracticemag.com.au/ai-in-the-veterinary-industry/>; viewed 15/09/2022.

associated with 'vast distances, seasonal access challenges, cultural differences and limited veterinary and animal health capacity within remote Indigenous communities', which have been a barrier to the early detection of animal disease outbreaks, such as with *Ehrlichia canis* in dogs³³.

In the exhibited wildlife sector, digital technology is boosting visitor engagement. For example, Adelaide Zoo became the first Australian zoo to introduce iBeacon technology, which uses Bluetooth sensors to provide location-specific information about the animals and relevant conservation work on the visitor's smartphone³⁴. This technology is expected to be rolled out across Australia over the next five years, and will complement other technological already in place, such as VR machinery³⁵.

In the assistance animals sector, Assistance Dogs Australia has collaborated in developing a digital ID card for their accredited assistance dogs and handlers. The ID can be stored on mobile devices, and includes photo ID, contact details, their certified assistance dog's public access licence number, microchip details and accredited training organisation details. This allows for efficient identification and verification of accreditation. It is hoped that this will reduce fraud associated with fake assistance dog accreditations³⁶.

Safety QA & Regulatory Compliance

The occupation of veterinary practitioner and facilities which are veterinary hospitals are fully regulated. This includes responsibility for the actions of non-veterinary staff employed in practice and hospital environments. The animal care and management industries uphold legislation, regulations and standards of practice, many of which intersect with the various frameworks governing the agribusiness, food and fibre industries. This requires high levels of skill, knowledge and collaboration across different sectors. Please see also the section on **Animal welfare standards and services** above.

Animal health and welfare regulations, codes of practice and guidelines

Responsibility for legislation on animal welfare, pets in the community, wildlife protection, and vertebrate pests lies with each state and territory government. Some state governments have established mandatory rules concerning desexing, microchipping, dangerous dog provisions or prohibited breeds for all pets in their jurisdiction. Local governments are generally responsible for managing local problem animals, setting pet registration and identification rules, and defining the public areas in which animals are welcome.

In each state or jurisdiction there is relevant legislation and Acts associated with:

- Veterinary Practice
- Prescribing of Restricted Substances
- Biosecurity
- Animal Welfare
- Companion Animals
- Radiation Safety
- Rules of Racing

³³ AMRRIC (2022); *MEDIA RELEASE: Innovative AMRRIC App to aid collaborative remote Indigenous community animal health and biosecurity surveillance*; <https://www.amrric.org/news/view/media-release-amrric-app-indigenous-animal-health-biosecurity-surveillance/>; viewed 15/09/2022.

³⁴ Adelaide Zoo (2017); *Adelaide Zoo leads the way for an interactive experience*; <https://www.adelaidezoo.com.au/adelaide-zoo-leads-way-interactive-experience>; viewed 15/09/2022.

³⁵ IBISWorld (2022); *Zoological and Botanical Gardens in Australia*

³⁶ Vet Practice (2021); *Assistance Dogs Australia launches digital ID in bid to eliminate fakes*; <https://vetpracticemag.com.au/assistance-dogs-australia-launches-digital-id-in-bid-to-eliminate-fakes>; viewed 15/09/2022.

- Agriculture Livestock
- Workplace Health and Safety³⁷

Regulated practices and occupations

Regulated occupations have legal (or industry) requirements or restrictions that must be adhered to so to perform the work. Regulated occupations require a license from, or registration by, a professional association or occupational licensing authority. Licensing is required for occupations associated with:

- veterinary surgeons Acts for each state
- acts of veterinary science
- assistance animals

Regulation may vary across jurisdictions for different occupations; for example, Western Australia is the only jurisdiction that approves veterinary nurses and authorises trainee nurses. The *Veterinary Surgeons Regulations 1979* sets out the veterinary duties that approved veterinary nurses and authorised trainee veterinary nurses may perform³⁸. Also, there is legislation governing practices and procedures across all states that veterinary nurses and technicians must comply with in areas such as veterinary radiation, microchip implantation, and the possession and administration of medicines. The VNCA introduced the Australian Veterinary Nurse and Technician Registration Scheme (AVNAT) in April 2019 to advocate for increasing professional standards for veterinary nurses and veterinary technicians.

The legislative and regulatory environment for registered veterinary practitioners and veterinary hospitals can be especially intricate, extensive and variable (depending on the location and type of work). Growing demand for companion animal treatments is expected to lead to a significant growth in veterinary medicine products and uses. As such, there have been pressures to modernise regulatory frameworks and practices in this area. One avenue has been a recent independent review of the Pesticides and Veterinary Medicines Regulatory System in Australia³⁹. The review panel recommended 'better regulation of compounded veterinary products which are playing an increasingly important role in the treatment of companion animals and exotic species. This would be through the adoption of a protocol approach to guide veterinarians in prescribing the most suitable veterinary medicines, and improvements in compounding practice'. A whole-of-value-chain approach is further recommended to help curb the increased use of unregistered companion animal products purchased by owners over the internet or from other countries.

The national training register (training.gov.au) identifies which formal qualifications, skill sets or units of competency are aligned with occupations for specific licensing, legislative or certification requirements. In the *ACM Training Package*, these are:

Qualification Title	Licensing, Legislative or Certification requirement
Certificate III in Animal Technology	Regulatory compliance with the Australian Code for the Care and Use of Animals for Scientific Purposes applies to some units of competency. In addition, individual units may specify relevant licensing, legislative and/or regulatory requirements. Specific determination should be sought through the relevant state or territory body.
Certificate IV in	Some animal control functions administered by state/territory and local

³⁷ AVA (2022); *Legislative and regulatory environment for veterinary professionals*; <https://www.ava.com.au/library-resources/other-resources/legislation-for-veterinary-professionals/>; viewed 15/09/2022.

³⁸ Veterinary Surgeons' Board Western Australia (2019); *Veterinary Nurses*; https://www.vsbwa.org.au/Public/Veterinary_Nurses/_VSBWA/Nurses/Nurses-landing.aspx?hkey=d562b17b-d0d3-4210-ae39-a67ba8c62eac; viewed 15/09/2022.

³⁹ Department of Agriculture, Water and the Environment (2021); *Final Report of the Independent Review of the Pesticides and Veterinary Medicines Regulatory System in Australia*; Canberra, April.

Animal Regulation and Management	governments require licensing or authorisation. Legislative requirements vary across jurisdictions and users are advised to check with the relevant regulatory authority for current requirements.
Certificate IV in Veterinary Nursing	The scope of practice for veterinary nurses is determined by state and territory legislative and regulatory requirements. Users of this qualification must refer to the relevant legislation and regulations in the development of training and assessment strategies.
Diploma of Equine Allied Health	Equine allied health providers must work within the legislative and regulatory requirements relevant to animal welfare, biosecurity, veterinary practice, and pharmacy, controlled drugs and use of prohibited substances. The scope of practice for equine service providers varies according to state/territory legislative and regulatory requirements.

Workplace and Value Chain Risk Management and Safety Culture

All industries share the aspiration of achieving risk management and safety cultures. To develop safety skills, the animal care and management industry will need to work collaboratively, while attending to their differentiating features, which include:

- protecting the safety and wellbeing of multiple living entities – humans and animals – as they interact
- working in natural environments, with risks which cannot be engineered out
- working in remote situations, often alone or in small teams
- dealing with natural disasters, such as drought, fire and floods, across all areas, from planning to recovery
- adhering to public health protocols, as in pandemics, when the availability and use of personal protective equipment (PPE) is vital.

Numerous strategies are being implemented to support and improve animal care and management-related workplace safety outcomes. Workplace safety is of particular concern due to the behavioural variability, size and strength of the animals that people work with, as well as the diseases with which they may come into contact. Examples of situations requiring heightened safety precautions include:

- registered veterinary practitioners, staff in veterinary practices and hospitals and animal welfare workers providing services which safeguard animal health and public safety
- zookeepers managing facilities with exhibited animals
- workers caring for companion animals in kennels or shelters
- people working with horses (SafeWork Australia published a guide to managing risks when new and inexperienced persons interact with horses⁴⁰, which are supplemented by requirements in different jurisdictions⁴¹)

It is imperative that education and training be available to all animal-related workers and service providers to mitigate the risks of working on farms or animal facilities, including for the protection of customers.

⁴⁰ Safe Work Australia (2014); *Guide To Managing Risks When New And Inexperienced Persons Interact With Horses*

⁴¹ SafeWork NSW (2017); *Code Of Practice: Managing Risks When New Or Inexperienced Riders Or Handlers Interact With Horses In The Workplace*

Mental wellbeing

The Australian Veterinary Association has been raising awareness of the challenges faced by people working in veterinary services and the adverse effects that these can have on mental health⁴² (see also the section below on **Natural disaster planning, response and recovery**). Stakeholder research, including over 2,500 participants, was conducted in 2021 to construct a contemporary image of the mental health and wellness of veterinary professionals in Australia⁴³.

The research confirmed that prevalent stress factors include high workload, long hours, poor remuneration, interpersonal abuse by clients, neglect of animals, staff shortages and financial stress. Results also indicate that the challenges faced by veterinary services workers are two-fold: those inherent to the job, such as exposure to death; and 'typical' workplace challenges, for example interpersonal conflict and inadequate leadership support. While these challenges can never be fully eliminated, it is concluded that workplace conditions, environment and culture can be improved with greater attention to the mental health and wellbeing risks that the research identifies.

Veterinary nurses, along with women, students and people aged between 25-29, are highlighted as 'most likely to identify with having poor mental health or a formal mental health condition'⁴⁴. The report recommends that the role of veterinary nurse 'warrants review and transformation for the benefits of those doing the role, but also the wider team'⁴⁵. This is based upon findings that these workers experience uncertainty around work tasks and standards, conflicting and inconsistent job roles, responsibilities and expectations, and few opportunities for professional development (more associated with time and funding constraints rather than an absence of available resources and courses). The veterinary nurses surveyed believe that, after improved salary, upskilling and community education opportunities are the most important initiatives to improve mental health in the job role.

In response to professionals' challenges, in 2021 the ACM IRC led the development of a unit, *ACMGEN304 Promote positive wellbeing in self and others in animal care workplaces*, to describe the skills and knowledge required to manage personal wellbeing and psychological health and safety in workplaces involving animals. The unit includes elements for identifying the hazards and challenges of the work, developing a proactive self-care action plan and contributing to positive support strategies⁴⁶.

Natural disaster planning, response and recovery

Natural disasters, such as bushfires, drought and flooding, cause significant social and economic losses to individuals and communities. Catastrophic events result in many animal deaths and reduced welfare outcomes from injury, displacement, food shortages, and owners' inability to continue caring for them⁴⁷. Animal care and management services make substantial contributions to the wellbeing and care of wild animal populations at low or no cost on a compassionate basis (which is generally overlooked through government data and compensation mechanisms). However, in the event of natural disasters, tending to wounded wildlife and livestock exposes veterinary and other services to non-recoupable expenses, and often has negative impacts on mental wellbeing (both from financial and compassionate stress)⁴⁸. According

⁴² AVA (2021); *AVA issues media release raising awareness of mental health issues within the profession*; <https://www.ava.com.au/news/the-ava-issues-media-release-raising-awareness-of-mental-health-issues-within-the-profession/>; viewed 09/11/2021.

⁴³ SuperFriend (2021); *Australian Veterinary Association Veterinary Wellness Strategy: Final report*; Australian Veterinary Association

⁴⁴ SuperFriend (2021); *Australian Veterinary Association Veterinary Wellness Strategy: Final report*; Australian Veterinary Association; p.45

⁴⁵ SuperFriend (2021); *Australian Veterinary Association Veterinary Wellness Strategy: Final report*; Australian Veterinary Association; p.48

⁴⁶ Australian Government (2022); *ACMGEN304 - Promote positive wellbeing in self and others in animal care workplaces*; <https://training.gov.au/Training/Details/ACMGEN304>; viewed 15/09/2022.

⁴⁷ ABC News (2022); *Northern NSW vets work to save hundreds of starving, suffering animals amid flood crisis*; <https://www.abc.net.au/news/2022-03-09/qld-vet-angry-over-ignorance-of-animal-crisis-post-floods/100894214>; viewed 09/03/2022.

⁴⁸ AVA (2022); *Climate change and animal health, welfare and production*; <https://www.ava.com.au/policy-advocacy/policies/environment-and-conservation/climate-change-and-animal-health-welfare-and-production/>; viewed 15/09/2022.

to the Australian Veterinary Association, during the flooding events of March 2022, '60% of veterinary practises in QLD and NSW flood affected areas closed, half of those for 5 days or more'⁴⁹. The AVA is hence calling for a national approach to safeguarding and supporting veterinary services, which are already experiencing workforce shortages, during natural disaster events.

Enhanced knowledge and skill provisions are also required for responding to natural disasters. For example, floodwaters caused Gympie Veterinary Services staff to have to evacuate their building and, moreover, canoe or kayak to consultations⁵⁰. Maintaining operations, especially for emergency cases, required the movement of surgical equipment and pharmaceuticals into shipping containers that were transported to higher ground. Events such as flooding also expose greater risks of disease outbreaks, which animal care services must continue to monitor.

Due to past shortcomings identified in multiple enquiries (as reported in the *Agribusiness, Food and Fibre Industries Skills Report*), there is a clear requirement for additional skills in managing animals during disasters, for example:

- Disaster planning needs to extend beyond the protection of human life and property to the broader social environment, including companion and working animals⁵¹
- Skilled animal care professionals (e.g. veterinary nurses) and volunteers are needed to respond to natural disasters, particularly bushfires and floods. It is not sufficient to rely on inexperienced response workers and untrained individuals to coordinate rescue, assist and care for animals
- Evacuation protocols and procedures need to be developed to ensure appropriate support is provided for people and their animals, including a process for animal registration at evacuation centres and effective identification of overflow sites when preferred facilities are at capacity
- Boarding kennels need to be prepared for various eventualities during natural disaster emergencies, including their own evacuation or sudden influxes of animals needing food, medicines, treatment and places to rest. With adequate planning and staff training, local boarding kennels and shelters could be used as evacuation centres, while existing evacuation centres would be enabled to cater for people bringing their domestic animals.

Responses to natural disaster situations require a well-trained workforce and public awareness. Improving risk management strategies and enhancing overall safety cultures across industries, especially in regional, rural and remote Australia, is likely to mitigate some of the devastating effects of natural disasters on both human and animal populations and industries.

The Animal Emergency Incident Management Network is an industry-led association to promote collaboration among stakeholders in research, policy, education, planning, safety, and animal welfare to implement safer practices at incidents involving domestic animals. Its aims include improving skills and knowledge in all aspects of animal incident management, and to engage with local, national and international organisations to share knowledge and skills and identify opportunities for enacting continuous improvement and knowledge transfer⁵².

AFAC, the National Council for Fire and Emergency Services, have also released Large Animal Rescue Operations guidelines, which refers to land-based domestic animals, including horses and cattle; and covers animals such as alpacas, llamas, sheep, goats and pigs⁵³.

⁴⁹ AVA (2022); *Vets drowning in deluge of disaster animal care costs*; <https://www.ava.com.au/media-centre/media-releases/vets-drowning-in-deluge-of-disaster-animal-care-costs/>; viewed 15/09/2022.

⁵⁰ ABC News (2022); *Floodwaters have receded in Gympie but emotions still run high for vets who lost practice*; <https://www.abc.net.au/news/rural/2022-03-30/gympie-vets-talk-about-trauma-after-floods/100950808>; viewed 30/03/2022.

⁵¹ H. Squance, C. MacDonald, C. Stewart, R. Prasanna, D.M. Johnston (2021); *Strategies for Implementing a One Welfare Framework into Emergency Management*; *Animals* 11(11):3141.

⁵² Animal Emergency Incident Management Network (2022); *About*; <https://www.aeimanz.org/about/>; viewed 15/09/2022.

⁵³ Australasian Fire and Emergency Service Authorities Council (2022); *Large Animal Rescue Operations*; AFAC Publication No. 3097; AFAC, Melbourne, Australia.

The ACM IRC-led project on Small Companion Animal Incident Management⁵⁴ was to provide a national approach to the skills standards for responding to incidents involving small companion animals. The project was developed after the 2019–2020 bushfires, which highlighted the important role of animal facility workers, emergency service workers and evacuation centres in supporting injured and displaced animals. With many evacuation centres overwhelmed, the need for revised evacuation protocols, procedures for accommodating companion animals and staff training were recognised as essential.

⁵⁴ Skills Impact (2022); *Small Companion Animal Incident Management Project*; <https://www.skillsimpact.com.au/animal-care/training-package-projects/small-companion-animal-incident-management-project/>; viewed 15/09/2022.

Industry Summary and Trends

Market Summary

As with all industries since the start of 2020, animal care and management has experienced disrupted value and supply chains and labour supplies. However, the robust adaptations, innovations and evolution of these critical industries mean that, in spite of on-going challenges, they are thriving. The demand for animal care and management services and products is illustrated by the record boom in pet ownership during the COVID-19 pandemic, with 69% of Australian households now having one or more companion animals (compared with 61% only two years ago). There are now 30.4 million pets (compared with 28.5 million in 2019) that require breeding, training, grooming, shelter and health-related services⁵⁵. Such trends ensure that the animal care and management industry continues to grow in productivity and profitability.

Table 1: Industry Financial Activity

Training Package-Related Industries	Revenue (\$billion)	Industry Value Added (\$billion)
Animal Care and Management (ACM)	\$3.82	\$2.33

Source: IBISWorld Industry Wizard, 2022

Hidden Markets

There are barriers to the growth of the animal care and management industry due to it being under-acknowledged and under-reported in government and statistical resources. Despite the growth and diversification of a number of sectors and businesses in the animal care and management industry, there are numerous markets that continue to be hidden from standard market analyses. This occurs for various reasons, such as because they are emergent markets or have historically been considered smaller contributors to larger markets. As stated above, the growth of the companion animal and pet market is continuing, with over 30 million individual pets in Australia⁵⁶. Changed social attitudes towards pet treatment have driven an abundance of new and emerging animal services and goods. The true value of these markets, however, are generally underappreciated, especially as they are not classified in the Australian and New Zealand Standard Industrial Classification (ANZSIC). This means workforce numbers in these sectors are not quantified and the opportunities associated with having an ANZSIC – such as being included on skilled visa lists and training funding – remain out of reach.

Business & Workforce Summary

Workforce overview

There are almost 58,400 animal care and management employees in Australia⁵⁷. However, these figures are estimated by industry stakeholders to be much higher when accounting for the large workforce not classified under an Australian and New Zealand Standard Classification of Occupations (ANZSCO)

⁵⁵ Animal Medicines Australia (2021); *Pets and the Pandemic*

⁵⁶ Animal Medicines Australia (2021); *Pets and the Pandemic: A social research snapshot of pets and people in the COVID-19 era.*

⁵⁷ IBISWorld (2022); *Industry Wizard*

category⁵⁸.

Compared with the national average proportion of female employees across all occupations (48%), occupations in the animal care and management industry are largely female-dominated, with women making up 97% of veterinary nurses, 68% of animal attendants and trainers, 59% of dog handlers and trainers, 85% of pet groomers, 63% of zoo keepers, 75% of kennel hands, and 72% of other animal attendants and trainers⁵⁹.

Almost 4,000 individual veterinary services businesses operate and trade in locations spanning all states and territories, and comprise a variety of small, medium and large enterprises⁶⁰. As reported previously⁶¹, businesses may operate in the animal care and management sectors which are either not classified in the ANZSIC or are grouped with non-animal industries, such that accurate figures cannot be viewed or extracted. These 'invisible' businesses cover a multitude of services, including pet product retailers, as well as niche, specialist, self-employed and regional operators.

The animal care and management industry forms a sophisticated and complex web across the value chain, and comprise many influential stakeholders, whose leadership is a key driver for defining and facilitating the many different forms of workforce capabilities development required for on-going productivity.

The National Skills Commission (NSC) report *The Shape of Australia's Post COVID-19 Workforce* analysed the impact of the pandemic on Australia's labour market and included animal attendants and trainers as one of the top 20 most resilient occupations in Australia⁶². While many markets and industries are experiencing volatility, resilient occupations are those with high levels of skills that cannot be replaced by automation, can withstand structural changes, and for whom demand for services is likely to be sustained or grow in the future.

There is strong growth projected across animal care and management occupations; for example, with 14.9% more animal attendants and trainers⁶³ and 15.4% more veterinary nurses⁶⁴ expected to be employed in Australia by 2026. These NSC insights provide workforce planning evidence of future job opportunities, which will need to be supported by education policy, career planning services for job seekers and students, course offerings by education providers and broader policy and program design.

Shortage of skilled workers

The animal care and management industries continue to be constrained by widespread labour shortages, jeopardising the short- and long-term viability of many businesses. Industry participants are of critical importance because the skills, knowledge and expertise that they bring or develop are essential to the industry's growth⁶⁵.

In 2021, the Australian Veterinary Association conducted a workforce survey which found almost 31% of veterinary job vacancies took more than 12 months to fill or were still not filled. Such issues are coinciding with unprecedented growth in pet ownership in Australia, which is creating further pressures on animal care and management services' time, workloads and capabilities.

⁵⁸ Skills Impact (2019); *Animal Care and Management Industry Sector IRC Skills Forecast and Proposed Schedule of Work 2019–2022*

⁵⁹ National Skills Commission (2022); *Occupation Profiles*; <https://labourmarketinsights.gov.au/occupations/occupation-search/>; viewed 05/07/2022.

⁶⁰ IBISWorld (2022); *Veterinary Services in Australia*

⁶¹ Skills Impact (2019); *Animal Care and Management Industry Sector IRC Skills Forecast and Proposed Schedule of Work 2019–2022*; pp.18-22

⁶² National Skills Commission (2020); *The shape of Australia's post COVID-19 workforce*

⁶³ National Skills Commission (2022); *Animal Attendants and Trainers*; <https://labourmarketinsights.gov.au/occupation-profile/animal-attendants-and-trainers?occupationCode=3611>; viewed 05/07/2022.

⁶⁴ National Skills Commission (2022); *Veterinary Nurses*; <https://labourmarketinsights.gov.au/occupation-profile/veterinary-nurses?occupationCode=3613>; viewed 05/07/2022.

⁶⁵ National Farmers' Federation (2022); *Pre-Budget Submission 2022-23*; p.22

The National Skills Commission (NSC) regularly reviews the national skills needs of Australia and, from June 2021, has responsibility for releasing a Skills Priority List (SPL) annually. A key element of the SPL is the determination of occupational shortages⁶⁶. The SPL provides a current labour market rating (i.e. whether there is a shortage) and a future demand rating for occupations nationally. The future demand rating is a proportional measure that expresses the prospects for an occupation relative to that occupation's size.

As the SPL is based on the ANZSCO, which was not updated prior to the SPL's 2021 release, numerous stakeholders believe that, with the benefit of refined and improved classifications, future releases of the SPL will display shortages in a *greater* number of occupations associated with the animal care and management industries. Stakeholders also believe that the methodology of the SPL will always under-represent skills shortages in occupations that are predominately based in regional areas due to the non-mainstream channels through which industry jobs are advertised (i.e. not always through websites such as Seek). The SPL methodology paper does state that attempts were made to balance the proportion of employers in metropolitan and regional areas. However, stakeholders' concerns persist over the SPL not reflecting their industry knowledge; for example, feedback suggests that there are widespread shortages of veterinary nurses on Queensland and Victoria as well as NSW

The table below displays the animal care and management industry occupations included on the SPL.

Table 2: 2021 Skills Priority List Occupations

ANZSCO Code	Occupation	Current national shortage overall?	Future demand (five-year period)
234711	Veterinarian	Yes	Strong
322113	Farrier	Yes	Moderate
311413	Life Science Technician	No (shortage in NSW & NT)	Moderate
361311	Veterinary Nurse	No (shortage in NSW)	Moderate
361112	Horse Trainer	No (shortage in NSW)	Strong
361113	Pet Groomer	No	Strong
361114	Zookeeper	No	Strong
361115	Kennel Hand	No	Strong
361111	Dog Handler or Trainer	No	Strong
149911	Boarding Kennel or Cattery Operator	No	Moderate

Source: National Skills Commission (2021); 2021 Skills Priority List

Various strategies are being implemented by industry to promote industry careers, especially to young people who are interested in working with animals. Industry professionals are encouraging people to consider animal care and management careers, especially to help meet the increasing demand for wildlife rehabilitation carers in the wake of recent bushfires and floods⁶⁷. NSW Wildlife Rehabilitation reports that there were 113,029 wildlife animal rescues in 2020 in NSW, a 64% increase from 2014 figures. Training options, such as the TAFE-delivered *Certificate IV in Veterinary Nursing*, are being promoted as a way for people to progress their practical and transferable skills and knowledge, receive mentoring and develop strong industry connections.

The Veterinary Nurses Council of Australia (VNCA) is exploring whether there is a possibility of veterinary

⁶⁶ National Skills Commission (2021); *Skills Priority List Methodology*; p.5

⁶⁷ Vet Practice (2022); *Colossal upsurge in demand for wildlife carers in NSW*; <https://www.vetpracticemag.com.au/colossal-upsurge-in-demand-for-wildlife-carers-in-nsw/>; viewed 09/02/2022.

nurses and veterinary technicians taking on expanded roles in veterinary practices to help mitigate the current staff shortage crisis (in addition to growing recognition of the roles of para-professionals). This is partly a reflection of the belief of some veterinary nurses and technicians that they are not being utilised to the full extent of their training and capabilities⁶⁸.

To help improve veterinary businesses and lessen the impact of skills shortages, the VNCA recommend veterinary nurses and technicians be provided ‘with clear pathways for the advancement of skills, knowledge, and responsibility, as well as clearly defined roles within the team’⁶⁹. The VNCA believes this will help to meet increasing societal expectations of high-quality veterinary services for pets, and also to alleviate some of the issues associated with veterinarian shortages and mental health challenges⁷⁰. Another potential advantage may be to enhance veterinary nurse and technician job satisfaction and retention, which would benefit the industry, as well as its customers and patients, as a whole.

Training Summary

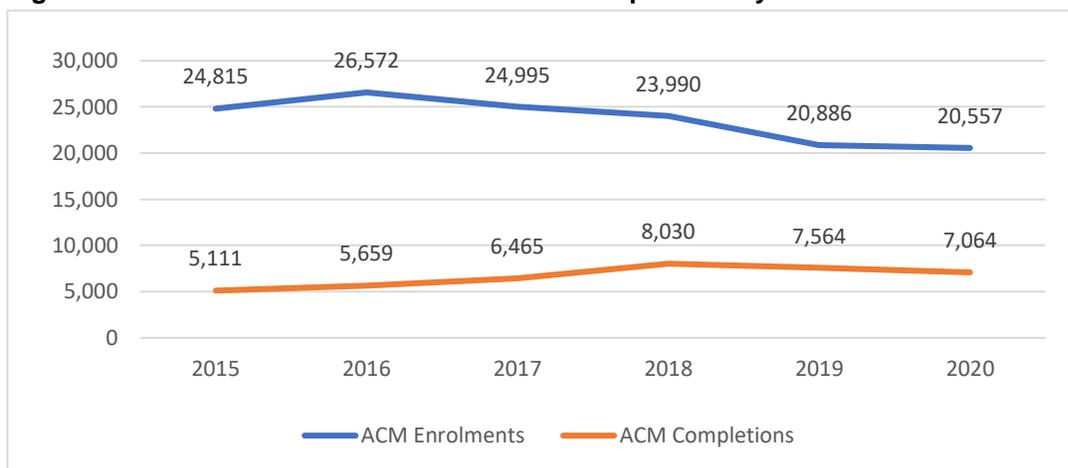
VET training products

Animal Care and Management Qualifications

In 2020, there were 20,557 enrolments in animal care and management (ACM) qualifications. There were 7,064 qualification completions in 2020.

The greatest number of qualification enrolments in 2020 were in New South Wales (7,287), followed by Victoria (5,445) and Queensland (3,715).

Figure 3: ACM Qualification Enrolments and Completions by Year



Source: NCVET VOCSTATS, TVA program enrolments 2015-2020

⁶⁸ Vet Practice (2021); *Veterinary nurses step up*; <https://vetpracticemag.com.au/veterinary-nurses-step-up/>; viewed 20/12/2022.

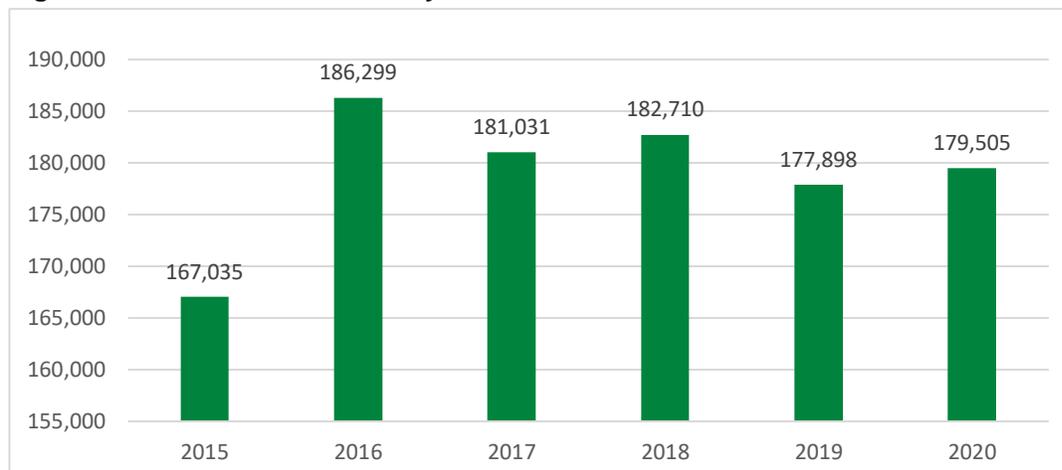
⁶⁹ VNCA (2021); *VNCA Position Statement*; <https://www.vnca.asn.au/public/11/files/Position%20Statements/Position%20Statement%20Utilisation%20of%20VNs%20and%20VTs%20in%20vet%20practice.pdf>; viewed 15/09/2022.

⁷⁰ Vet Practice (2022); *Veterinary mental health at breaking point, warns AVA*; <https://www.vetpracticemag.com.au/veterinary-mental-health-at-breaking-point-warns-ava/>; viewed 25/04/2022.

Animal Care and Management Units of Competency

In 2020, there were 179,505 enrolments in ACM units of competency. This includes enrolments through qualifications, apprenticeships and non-apprenticeships, skill sets and micro-credentials.

Figure 4: ACM Unit Enrolments by Year



Source: NCVER VOCSTATS, TVA subject enrolments 2015-2020

ACM units are developed with multiple industries, and delivered by the training providers servicing those multiple industries, because of their capacity to be contextualised. Such transferability ensures the training system supports individuals to move easily between related occupations and sectors.

Learning to work with and care for animals requires a high proportion of in-person, tactile experience. Due to restrictions relating to COVID-19, RTOs were forced to adapt their methods to incorporate a combination of online and flexible delivery. Kangan Institute, for example, established new, user-friendly online tutorials and interactive learning (using a mix of live demonstrations and features for connecting with classmates and trainers for support), as well as work placements and face-to-face practical assessments when it was feasible and safe to implement. Students therefore required access to a PC and the internet to participate in their courses (which may have been exclusionary to some learners in rural and remote areas)⁷¹.

Accredited training facilitated by RSPCA NSW has been greatly impacted by COVID-19 restrictions, with face-to-face learning and work placements discontinued until COVIDSafe protocols were established. This led to a number of learners' training being delayed or deferred. During this period, many applicant trainees were informed that training would not go ahead as planned, though RSPCA NSW kept a record of interested people and contacted them when training was re-established. Those nearing completion of their qualification were, in some cases, able to submit video assessments (though some students had difficulty accessing veterinary clinics for third-party logbooks). Despite these challenges, demand for enrolling in the *Certificate II in Animal Studies* is greater than can be accommodated currently, so a new education centre in the Hunter region is in development to offer greater capacity.

Continuing training for niche sectors with modest student cohorts has been a challenge for the industry. For equine dental training delivery, for example, face-to-face training and demonstrations are imperative for large parts of the course. As a result, learners' training was discontinued during COVID-19 restrictions. This impacted greatly on RTOs who, on resumption of delivery services, were obligated to re-engage existing students and were therefore unable to enrol a new cohort in 2022 due to number restrictions and capacity issues. This saw profits affected, as well as impacting negatively on published enrolment numbers, which

⁷¹ Kangan Institute (2022); *Certificate III In Animal Care Services (Pet Grooming)*; <https://www.kangan.edu.au/tafe-courses/certificate-iii-in-animal-care-services-pet-grooming-7862>; viewed 05/07/2022.

weakened the prospect of equine dental technician training being retained within the national training register. These experiences reveal that the true *demand* for training delivery is not reflected in enrolment data. However, this is the leading variable used to determine the value of reviewing and updating products.

Please see the *Agribusiness, Food and Fibre Industries Skills Report* for additional information on learners' motivations for undertaking training.

Barriers to nationally recognised training

Employers and RTOs face parallel difficulties in engaging with one another, as summarised in the *Agribusiness, Food and Fibre Industries Skills Report*.

RTO Delivery Challenges and Thin Markets

There is a relative absence of RTOs delivering quality training across the dispersed regional areas in which many animal care and management businesses operate⁷². These areas are generally low-profit training environments because there is a double burden of high capital investment requirements (i.e. to deliver training RTOs must have access to animals that need high levels of expensive care to ensure their wellbeing, implement significant safety measures, and employ highly proficient people in trainer and assessor roles) and student cohorts being spread over a broad geographic range, leading to low learner-to-trainer ratios in any delivery location. As a result, the cost per learner is generally much higher for the RTO than in a metropolitan area and any extra subsidies (location and equity loadings⁷³) paid to the RTO to account for these higher delivery costs are reported by many stakeholders as being insufficient⁷⁴. For many RTOs, continuing to deliver training becomes unviable – especially if there are options for its business strategy to instead concentrate on other, high enrolment, low-cost, training packages.

Low profitability entails RTOs having fewer resources with which to develop or update training and assessment materials or implement quality delivery strategies. Similarly, fewer RTOs will enter the training market to deliver animal care and management products. This reduces the overall 'supply' of animal care and management industry skills and training, especially in the regional areas where they are most needed. In the relative absence of formal training delivery, enterprises seek alternative training options for their staff, including in-house, unaccredited and informal training (including online overseas organisations), leading to an overall lowering of 'demand' for VET. With both supply and demand suffering, these VET markets are characterised as 'thin'.

⁷² Skills Impact (2022); *Agribusiness, Food and Fibre Industries Skills Report*

⁷³ Productivity Commission (2020); *National Agreement for Skills and Workforce Development Review, Interim Report*; p.143

⁷⁴ Skills Impact (2021); *Thin Markets and RTO Delivery Challenges*; <https://www.skillsimpact.com.au/vetinsights/thin-markets-and-rto-delivery-challenges/>; viewed 11/02/2022

Case study: thin markets for pet grooming training

Julie Gunning, owner of Just Dogs Grooming in Rokeby, Tasmania, is passionate about vocational education. Julie undertook formal training and later became a trainer and assessor in the UK, delivering pet grooming qualifications. When establishing her business in Tasmania, it was quite a shock to her that there were no formal animal care and management qualifications being delivered in Tasmania. Consequently, she was unable to find applicants with formal credentials, and was only able to employ staff with some work experience. This set her on the journey of finding out how she could facilitate qualifications for her own staff through recognition of prior learning (RPL), while trying to establish information on any RTOs that could offer local delivery of formal qualifications for future employees. She was, however, unsuccessful in engaging any providers to deliver accredited qualifications or units of competency in pet grooming. To compensate, Julie is currently training and assessing staff using resources from the UK qualifications with which she is familiar. Julie is continuing to engage other pet grooming businesses in Tasmania in an effort to evidence sufficient demand for an RTO to consider delivering accredited training.

From personal correspondence: <https://justdogsgrooming.com.au/>

Rural, Regional & Remote Summary

Attracting skilled workers

As with businesses across the agribusiness, food and fibre industries, many animal care and management enterprises are in regional locations where access to skilled workers, and resources for inexperienced workers' development, is limited. A lack of infrastructure and services makes moving to some locations an unattractive proposition, and businesses are forced to incentivise potential employees by offering higher wages, which can often be challenging financially.

Rural, regional and remote Australia has been struggling to attract people to veterinary services positions⁷⁵, and a number of stakeholders have reported businesses have closed or reduced their services (e.g. no longer offering after-hours services). This raises concerns over the welfare of animals in regional areas, as well as the capacity for biosecurity monitoring. A driver of poor retention rates of skilled animal care and management workers in regional areas is remuneration, with many veterinarians conducting in-kind work when community members are unable to afford their services or unowned wildlife needs attention (despite the high cost of equipment and medicines)⁷⁶.

The Australian Veterinarian Association (AVA) has called on the federal government to invest in measures to support veterinary professionals to stay in regional areas. Recommendations include a rural placement incentives scheme for graduate veterinarians to help ease rural veterinarian shortages and, in turn, improve levels of biosecurity surveillance performed by private veterinarians. The aim would be to entice 80 placements per year: 60 in rural and 20 in remote areas⁷⁷.

Stakeholders, including Animal Management in Rural and Remote Aboriginal Communities (AMRRIC), have provided feedback that animal welfare legislation implementation is significantly under-resourced in remote regions. In the NT, for example, all animal welfare inspectors are based either in Darwin or Alice Springs, leaving large and very remote areas without regular animal welfare inspectorate access. While

⁷⁵ Vet Practice (2022); *AVA calls on government to help get vets back to the bush*; <https://www.vetpracticemag.com.au/ava-calls-on-government-to-help-get-vets-back-to-the-bush/>; viewed 08/09/2022.

⁷⁶ ABC News (2022); *Vet shortage puts Australia's biosecurity at risk as foot-and-mouth disease looms*; <https://www.abc.net.au/news/2022-05-11/vet-shortage-a-biosecurity-risk-as-foot-and-mouth-disease-looms/101052600>; viewed 08/09/2022.

⁷⁷ Australia Veterinary Association (2022); *2022 – 2023 Federal Pre-Budget Submission*

minimum standards of animal management and welfare is somewhat improving, organisations such as AMRRIC are pursuing an educative approach for companion animal health, biosecurity, and community safety and services in the short term. Without enhanced resourcing for legislation implementation there will continue to be animal welfare challenges. Inadequate resourcing for animal welfare means there are few proactive or educative approaches delivered beyond metropolitan areas.

Skills development

There are acute difficulties in sustaining viable formal training options in rural, regional and remote areas, leading businesses and associations to develop alternatives. In recent years, AMRRIC has contributed subject matter expertise for developing animal care and management units based on non-accredited training they had delivered between 2011 and 2014 as part of their Animal Management Worker Pilot Program. This program, developed in collaboration with three remote local government areas, was established to build local animal management capacity within remote NT communities. However, the program was unable to secure funding beyond the pilot period⁷⁸. Despite this, AMRRIC continues to regularly receive requests from local government authorities in the NT and other jurisdictions for animal management staff training (usually community service managers whose roles, among others, include animal management tasks). AMRRIC also receive requests to provide advice and training on topics such as safe animal handling, animal management strategic planning, and effective remote community vet service program design and delivery. They have recently engaged an RTO to develop resources to deliver two skill sets, *ACMSS00034 Animal Management Coordination in Remote Communities Skill Set* and *ACMSS00031 Promote Animal Health in Remote Communities Skill Set* for Indigenous Rangers and community workers respectively.

To help address the many challenges for providing adequate skills and training opportunities in regional Australia, the Hon Fiona Nash was appointed as Australia's first Regional Education Commissioner in December 2021 and will oversee implementation of recommendations from the *National Regional, Rural and Remote Tertiary Education Strategy* ('the Napthine Review')⁷⁹. The sustainability and growth of regional Australia and its industries is entwined with factors such as the viability of businesses and their ability to attract and develop the next generation of workers. This, according to the Napthine Review, is facilitated by the provision of tertiary education:

'Increased educational attainment across RRR communities will lead to increased productivity and further strengthen industries, economies and communities. Enhancing RRR industries and communities will also help to attract more students and professionals to the regions. Families will have greater confidence in relocating to, or remaining in, RRR locations if they know their children will have equal opportunities to undertake tertiary education. [...] Investments to overcome the disparity in educational outcomes between metropolitan and RRR areas will 'future proof' Australia and provide the foundation for national success.'

Commonwealth of Australia (2019); National Regional, Rural and Remote Tertiary Education Strategy; pp.16-17

Implementing the recommendations of the Napthine Review will complement the VET reform agenda as well as efforts by regional industries to improve productivity and profitability. The Transition Advisory Group⁸⁰ are clear that businesses in regional areas must be adequately represented in the reformed VET system so that appropriate training is delivered where and when it is needed. This requires improving employer engagement with the national training system, creating collaborative relationships between employers and training providers, and working towards longer-term workforce development objectives.

⁷⁸ Animal Management in Rural and Remote Aboriginal Communities Inc. (2014); *Animal Management Worker Program Evaluation*; https://mk0amrricqek1rx8x5cc.kinstacdn.com/wp-content/uploads/2021/02/AMRRIC-AMW-Evaluation-Report_280814_vFinal.pdf

⁷⁹ Commonwealth of Australia (2019); *National Regional, Rural and Remote Tertiary Education Strategy*.

⁸⁰ Transition Advisory Group (2021); *Final Advice – New Industry Engagement Arrangements*; Australian Government Department of Education, Skills and Employment; p.2.

Aboriginal & Torres Strait Islander Peoples Summary

Aboriginal and Torres Strait Islander communities have long recognised the equilibrium that animals bring to biodiversity and local ecosystems, as well as their economic, social and cultural significance.

There are programs in place, led by AMRRIC, which include the public health aspects of animal care and management in training available to Indigenous Rangers and other stakeholders across Northern and Central Australia. Other programs also plan and discuss continuous improvement for cultural burning activities, which mitigate the potential spread of bushfires and protect the habitats of animals, such as bandicoots, the white-throated grass wren, bush rats, quolls, the chestnut-quilled rock pigeon, the black wallaroo and the Oenpelli python.

‘We humans and our native animals have a connection – they play a big role in our ceremony, so we want to protect them and we want them to live forever so our people can see them.’

*Terrah Guymula, a senior ranger at Warddeken Land Management Ltd
The Guardian (2021); Fire money: how Indigenous land management is transforming Arnhem Land; <https://www.theguardian.com/australia-news/2021/may/24/fire-money-how-indigenous-land-management-is-transforming-arnhem-land>; accessed 26/04/2022*

A One Health approach to companion animal health care and management has recently been explored in the remote Aboriginal Community of Wadeye in the Northern Territory⁸¹. One Health approaches consider the relationship between humans, animals, and environmental health holistically, which aligns with Aboriginal cultural and community knowledge and practice in different places. Such approaches are also considered to be potentially suitable for low-resourced areas with barriers to animal care and associated public health concerns because of the ability to improve health and wellbeing at a community level. There is currently no legislation regarding companion animal care and management that spans the whole Northern Territory, meaning animal care and management is inconsistently resourced and delivered between local government regions.

The Wadeye community-driven program was evaluated, and results showed that animal health outcomes improved considerably following program implementation. The program’s community-driven arrangements also helped participating Thamarrurr Development Corporation (TDC) Rangers to progress their animal health and management skills and knowledge. Furthermore, the sense of community ownership, local awareness, and shared skills and knowledge was considered important for developing the program, which raised the likelihood of its longer-term sustainability. Such community-led approaches to addressing animal health issues have the potential to assist with wider biosecurity strategies, and providing feasible and sustainable options for controlling zoonotic diseases affecting people in communities.

⁸¹ T. Riley, R. Lovett, J. Thandrayen, B. Cumming, K.A. Thurber (2020); Evaluating Impacts of a One Health Approach to Companion Animal Health and Management in a Remote Aboriginal Community in the Northern Territory, Australia; *Animals (Basel)* Oct 1;10(10):1790.