

## Amenity Horticulture, Landscaping, Conservation & Ecosystem Management



# Contents

<b>Acknowledgement of the work of IRCs</b> .....	<b>3</b>
<b>Acknowledgement of Country</b> .....	<b>3</b>
<b>Purpose</b> .....	<b>4</b>
<b>Key Findings and Priorities</b> .....	<b>5</b>
<b>Industry Reference Committee</b> .....	<b>6</b>
<b>Method</b> .....	<b>6</b>
<b>Environmental Analysis</b> .....	<b>7</b>
<b>Whole of Value Chain Approach</b> .....	<b>7</b>
Value chain interdependencies .....	7
Current crossovers and divisions of the value chain in the VET system .....	9
<b>Biosecurity, Invasive Species and Pest Control</b> .....	<b>9</b>
Approaches to biosecurity .....	10
National Plant Biosecurity Strategy .....	10
<b>Sustaining Plants and Animals</b> .....	<b>11</b>
<b>Ecosystem and Biodiversity Management, and Climate Adaptation</b> .....	<b>12</b>
Aboriginal and Torres Strait Islander Custodianship .....	14
Climate and carbon .....	14
Water .....	15
<b>Digital &amp; Automation Practices</b> .....	<b>16</b>
<b>Environmental Regulations, Codes of Practice and Guidelines</b> .....	<b>16</b>
<b>Workplace and Value Chain Risk Management and Safety Culture</b> .....	<b>16</b>
Natural disaster planning, response and recovery .....	17
Floods .....	17
<b>Industry Summary and Trends</b> .....	<b>19</b>
<b>Workforce, Business and Market Summary</b> .....	<b>19</b>
Shortage of skilled workers and skills priorities .....	20
Workforce attraction and retention strategies .....	21
<b>Training Summary</b> .....	<b>22</b>
VET participation .....	22
Employers' use and views of nationally recognised training .....	23
<b>Regional, Rural &amp; Remote Summary</b> .....	<b>23</b>
<b>Aboriginal &amp; Torres Strait Islander Peoples Summary</b> .....	<b>24</b>

## 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 Amenity Horticulture, Landscaping, Conservation & Land 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 Amenity Horticulture, Landscaping, Conservation & Ecosystem Management industries are going through significant transformation and facing challenges from multiple sources, including natural disasters, global markets, changing consumer taste, technological development and the COVID-19 pandemic.

The demands for skills, labour and work are likely to grow beyond the current predictions and expectations of the National Skills Commission and other analysis bodies. This points to a lack of analytic data available specifically for this field, including on new and emerging industry sectors and skills, which is expanding as the industry continues to be elevated as a national priority, especially in relation to addressing climate and in recognition of the critical importance of biodiversity and biosecurity to all Australian land and water activities.

The Amenity Horticulture, Landscaping and Conservation & Land Management IRC have identified priorities which they recommend for future consideration, including:

- The finalisation of the Unit Sector Approach for reviewing the *AHC Training Package*, and further consideration of the Rural Operations qualifications, including the potential for greater recognition of ecosystem management as a key part of rural activities
- Evaluation of the Unit Sector Approach for the review of the *AHC Training Package*
- Working with the Arts and Personal Services Cluster (specifically relating to Tourism and Hospitality) to ensure that parks and destination management, biosecurity, biodiversity and ecosystem management, provenance, traceability and other relevant skills are incorporated into their qualifications with the guidance of experts from the Agribusiness, Food and Fibre Industry Cluster.
- Working with other agribusiness, food and fibre industries on research and planning projects to identify and address skills gaps relating 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: Esther Ngang

Date: 29/09/2022

# Industry Reference Committee

The AHLCLM IRC is responsible for national training package qualifications relevant to amenity horticulture, landscaping, and conservation & ecosystem management. Qualifications overseen by the IRC are in the *AHC Agriculture, Horticulture and Conservation & Land Management Training Package*. The AHLCLM IRC is supported by the Skills Service Organisation, Skills Impact.

## Amenity Horticulture, Landscaping, Conservation and Land Management IRC

<b>Name</b>	<b>Organisation or Area of Expertise</b>
Des Boorman	Expertise in production nursery and weed management
Craig Hallam	Expertise in amenity horticulture landscaping parks and gardens
Esther Ngang (Chair)	Expertise in amenity horticulture landscaping parks and gardens
Geoff Harvey	Expertise in irrigation for amenity horticulture
Jen Ford (Deputy Chair)	Australian Association of Bush Regenerators Inc
Jim Johnson	Expertise in amenity horticulture landscaping parks and gardens
Julie Heran	Expertise in indigenous conservation and land management
Jyri Kaapro	Expertise in pest management and weeds
Megan Flower	Expertise in amenity horticulture landscaping parks and gardens
Paul Janssens	Expertise in amenity horticulture landscaping parks and gardens
Jo Cave	Greenlife Industry Australia
Reginald Kidd	National Farmers' Federation
Simone Staples	Australian Golf Course Superintendents' Association
Susan Brunskill	Expertise in permaculture and landcare and management
Virginia Solomon	Expertise in conservation and land management - permaculture

## 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 Amenity Horticulture, Landscaping, Conservation & Ecosystem Management value chain encompasses all stakeholders (up- and down-stream suppliers of fertilisers and machinery, growers, landowners, traders, materials processors and retailers) who are linked in collaborative relationships to provide consumers with products and services. Value-adding occurs when skilled workers representing different industries or businesses conduct work on specific products or resources that results in them changing form or taking on an additional attribute (see the *Agribusiness, Food and Fibre Industries Skills Report* for more details).

The value of what is added to a product or service is determined by consumer demand in local and international markets, which are themselves shaped by variables such as government policy and concerns for sustainability. A whole of value chain approach is essential not only for understanding the ways in which industries work together but also to implement robust and adaptable systems, especially to meet changing consumer demands<sup>1</sup>.

## Value chain interdependencies

In the Amenity Horticulture, Landscaping, Conservation & Ecosystem Management industries, the monetary value of products and services is not always evident immediately, for example with conservation and ecosystem management activities; however, over time they may prove to be invaluable for the sustainability of Australian flora, fauna, pollinator and human populations and industries. Accordingly, the work of industry businesses is becoming increasingly embedded within the operations of other industries. This highlights the importance of the tasks that they undertake, as well as the need for these value chain interdependencies to be recognised and developed.

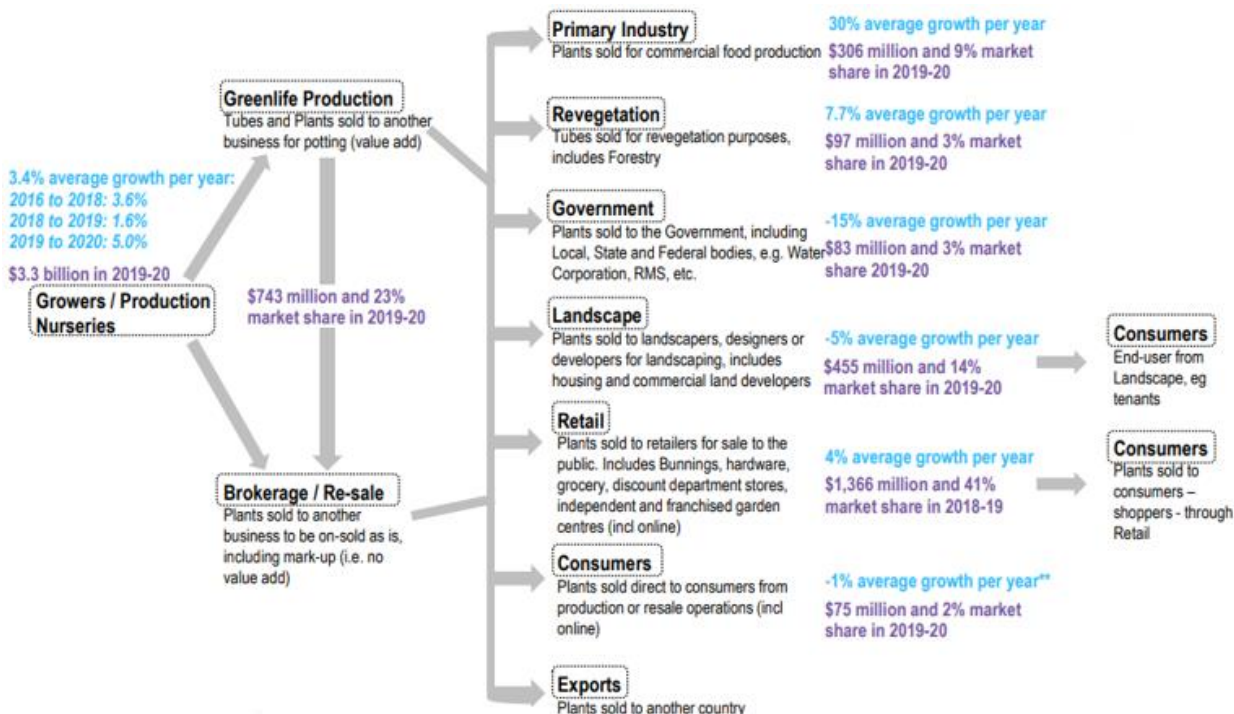
Greenlife industry mapping demonstrates both challenges and opportunities for Amenity Horticulture, Landscaping, Conservation & Ecosystem Management value chains. The greenlife industry is the source of most plants in Australia, encompassing plant growers, retailers and suppliers of plant nutrition and protection products. It is described as the 'backbone of Australian horticulture'<sup>2</sup>, and its value chain extends across multiple sectors. Figure 1 shows a depiction of the greenlife supply chain, but, as is noted below, a greater focus on the value chain would provide a richer, holistic representation of the industry and increase its visibility in data collection and policy.

---

<sup>1</sup> J. Azarias, R. Nettle & J. Williams (2020); *National Agricultural Workforce Strategy: Learning to excel*; National Agricultural Labour Advisory Committee; Canberra, December; p.xiv

<sup>2</sup> Greenlife Industry Australia (2022); *Greenlife in Urban Australia*;  
<https://www.greenlifeindustry.com.au/static/uploads/files/greenlife-stats-19-20-wfhhbpuqteod.pdf>; viewed 11/05/2022.

**Figure 1: Greenlife supply chain**



Source: ACIL Allen (2021); Greenlife market analysis: market commentary; p. 18

By focussing on the greenlife supply chain – rather than the broader value chain – this map omits important industry services and collaboration, which would show greater economic and social value of industry operations than has so far been articulated. It also illustrates one of the issues with attempting to describe the industry with the use of common data sources. Due to the cross-industry operations and support provided by various businesses in the field, official data collections are often unable to delineate the work and value of these sectors from the wider industries in which they are embedded. Greenlife supply chain mapping, consequently, does not capture value chain operations associated with conservation and ecosystem management (including assisted regeneration and weeds control), nor does it consider parks management through Aboriginal and Torres Strait Islander communities and groups, including Indigenous Rangers. The map also overlooks the burgeoning sports turf sector, as well as the sectors connected to maintenance and work undertaken to ensure access for essential services such as fire control and access to power lines. It looks at the greenlife industry supply chain predominately as greenlife production and sale but misses important economic and workforce contributions from the extended value chain. This example highlights the challenges that the Amenity Horticulture, Landscaping, Conservation & Ecosystem Management industries face in being properly recognised, including through mapping, for their importance to Australian prosperity and wellbeing.

The Amenity Horticulture, Landscaping, Conservation & Ecosystem Management value chain illustrates how agribusiness is ‘more than just the farm’, with cooperation and skills required across all stages to ensure the continuation of operations. Businesses need to plan for contingencies associated with industry trends, which are shaped by internal and external factors, including disruptive technologies, emergent pandemics, such as COVID-19, the availability of water, the challenges of working in regional and remote locations, the cost of inputs (fertilisers, energy), drought, flooding and bushfires (see **Natural disaster planning, response and recovery** below), the application of Traditional Knowledge, the availability of government support and programs, and changing relationships with stakeholders, such as governments, landholders, retailers, and across landcare and urban green space organisations. These functions are



further influenced by supply and demand in different value chain industries, as well as overarching trends and issues that concern all businesses.

All stages of the Amenity Horticulture, Landscaping, Conservation & Ecosystem Management value chain are supported by cross-sectoral skills and knowledge in biosecurity, infection control, traceability, sustainability and safety (each addressed in greater detail below). These technical skills are further enabled by employability skills in communication, strategic planning, data analysis, management and leadership, digital literacy, and science, technology, engineering and mathematics (STEM). Employers' ability to access workers with such skills creates unique challenges and opportunities across the value chain.

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

Amenity horticulture, landscaping, conservation and ecosystem management have critical value chain connections to other industries, as outlined in detail in the Agribusiness, Food and Fibre Industries Skills Reports.

Current crossovers requiring collaboration include:

- Agriculture and Production Horticulture
  - These sectors are also included in the Agriculture, Horticulture and Conservation & Land Management (AHC)
- Tourism and Hospitality
  - Tourism and hospitality (covered by the Tourism, Travel and Hospitality (SIT) Training Package) are strongly connected to the parks, reserves, tourist centres, environmental tourism and other parts of the industry, and often workers have roles across both industries.
- Regulation Services
  - Industry participants work with a range of regulation and regulators, including Indigenous agencies and Land Councils, environmental protection agencies, local, state and federal government bodies, chemical regulators and heritage bodies
- Mining and other industries requiring physical rehabilitation
  - Land, water and geological sites often require rehabilitation after industrial activity, as do land and port sites after demolition or closure
- Professional Support Services
  - Supportive occupations such as waste management, water management, historians, Geospatial Information Services (GIS)
- Transport & Logistics
  - This is partially covered by the Transport and Logistics (TLI) Training Package
- Research
  - Significant research efforts are being undertaken that inform industry, including in ecosystem management, culturally diverse practices and protection of sites

## Biosecurity, Invasive Species and Pest Control

Biosecurity in Amenity Horticulture, Landscaping, Conservation & Ecosystem Management involves the skills and knowledge required for the protection and management of environments and plant and animal species, and to control weeds, disease, fungus, and pests across multiple, complex ecosystems on land

and in water. As a result, biosecurity is fundamental to most work undertaken in these industries.

## Approaches to biosecurity

The elevation of biosecurity as a national priority, in line with greater risks of invasive species' incursion, makes it likely that there will be a need for more skilled workers in the Amenity Horticulture, Landscaping, Conservation & Ecosystem Management industries. Sessions of the *2022 Australian Biosecurity Symposium*, for example, highlighted that human behaviour creates the greatest risks of transporting pests and disease, and that education and public awareness is key to lessening potential dangers associated with pest animals, weeds, wildlife, aquatics, humans and the environment<sup>3</sup>.

The management of invasive plants and animals is a duty shared by various stakeholders, including federal, state and local governments, landholders, local communities, industry groups, Natural Resource Management (NRM) groups and Landcare groups. In Far North Queensland, for example, local councils are working together to improve biosecurity capacity, including invasive pest control planning, under the Better Partnerships project<sup>4</sup>.

Specific pest and weed management work roles are undertaken within a range of occupations, including weed management field officers, pest management field officers, pest management contractors and vertebrate pest management field officers. Senior pest management officers and managers fulfil roles for planning and managing small- to large-scale pest management programs, which may include participating in emergency operations, such as disease outbreaks. This often involves coordinating programs and practices around strategic invasive species management, weed management programs that require chemical control, maintaining required records, and assessing the efficacy of different programs.

The expert knowledge of Aboriginal and Torres Strait Islander Rangers plays a key role in Australia's biosecurity system. Since 2016, Indigenous Rangers have undertaken biosecurity activities relating to around \$19.5 million of Australian Government investment<sup>5</sup>. This involves aquatic, animal and plant health surveillance, plant host mapping, insect trapping, and community-based biosecurity engagement and awareness promotion. In 2021-22, 64 Indigenous Rangers groups were responsible for biosecurity surveillance activities, principally along the northern Australian coastline, that focussed on high-risk pathways for potential pest and disease incursions. Such strategies are important contributions to the Northern Australia Quarantine Strategy initiative (established 1989), and help safeguard the Australian industries, including the Amenity Horticulture, Landscaping, Conservation & Ecosystem Management value chain and associated communities.

## National Plant Biosecurity Strategy

The *2021-2031 National Plant Biosecurity Strategy*<sup>6</sup> was released in April 2022 by Plant Health Australia to provide a framework for strengthening Australia's plant biosecurity system over the next ten years. The strategy outlines key areas for building a 'resilient and contemporary national plant biosecurity system that will continue to support Australian plant industries, economy, environment and communities.'. These focus on supporting diagnostic capabilities, preparing for potential plant biosecurity incidents through training and professional development activities, developing and utilising digital resources and tools to prevent, identify and respond to plant biosecurity incidents, and to use technology in the appropriate collection, synthesis and analysis of plant biosecurity data. The document summarises these aims through four strategic priorities:

---

<sup>3</sup> The Biosecurity Collective (2022); *About the Symposium*; <https://www.biosym.com.au/about/>; viewed 10/05/2022.

<sup>4</sup> Queensland Government (2022); *Better partnerships project*; <https://www.daf.qld.gov.au/business-priorities/biosecurity/enhancing-capability-capacity/better-partnerships>; viewed 10/05/2022.

<sup>5</sup> The Hon David Littleproud MP (2022); *Indigenous Rangers celebrated on World Ranger Day*; <https://minister.awe.gov.au/littleproud/media-releases/indigenous-rangers-celebrated-world-ranger-day>; viewed 10/05/2022.

<sup>6</sup> Plant Health Australia (2022); *National Plant Biosecurity Strategy*

1. Stronger together
2. Sustained support
3. Future ready toolkit
4. Impact through innovation.

Crucially, the strategic priority of ‘sustained support’, the ability to manage plant biosecurity risks and retain Australia’s favourable biosecurity status, ‘relies on skilled and responsive participants across the entire system’. The skills and knowledge within the national biosecurity system must therefore be ‘enhanced, retained and shared’.

As part of a bottom-up approach, a suite of sub-strategies, including on preparedness, surveillance and diagnostic capabilities, has also been published to support implementation of the *National Plant Biosecurity Strategy*. The strategy maps how these sub-strategies relate to each of its four strategic priorities, including key actions relating to skills and knowledge.

**Figure 2: The strategic priority of ‘sustained support’ and its relationship with the sub-strategies**

<p><b>2.3</b> Develop the skills and knowledge required to support the ongoing needs of the national plant biosecurity system.</p>	<p><b>National Plant Biosecurity Preparedness Strategy</b></p> <ul style="list-style-type: none"> <li>▪ <b>Action 2.4</b> Develop and deliver training and simulation exercises to test preparedness to biosecurity incidents</li> </ul> <p><b>National Plant Biosecurity Surveillance Strategy</b></p> <ul style="list-style-type: none"> <li>▪ <b>Action 2.2</b> Coordinate training and professional development pathways to support the ongoing needs of the national surveillance system</li> <li>▪ <b>Action 2.3</b> Increase national surveillance biometric capability and build data literacy across surveillance practitioners</li> <li>▪ <b>Action 2.5</b> Establish and maintain diagnostic skills, expertise and resources to support surveillance</li> </ul> <p><b>National Plant Biosecurity Diagnostic Strategy</b></p> <ul style="list-style-type: none"> <li>▪ <b>Action 2.1</b> Address current and emerging gaps in the capacity of the national diagnostic system</li> <li>▪ <b>Action 2.2</b> Deliver professional development pathways for diagnosticians</li> </ul>
--	---

Source: *Plant Health Australia (2022); National Plant Biosecurity Strategy; p.30*

## Sustaining Plants and Animals

Sustaining plants requires the development of sophisticated skills and knowledge. Depending on what is being grown and where, workers need to be able to monitor plant and turf health, implement propagation plans, carry out soil sampling and testing, apply irrigation techniques, and control pests, diseases and weeds. There are also areas that require additional skills for navigating business management and regulatory system challenges. The complex care of plants and animals associated with conservation and ecosystem management is addressed under ‘**Ecosystem and Biodiversity Management**’ below.

## Ecosystem and Biodiversity Management, and Climate Adaptation

Workers in the Amenity Horticulture, Landscaping, and Conservation and Ecosystem Management industries are critical for sustaining Australian biodiversity. They undertake work in Australia's vast conservation estate, which includes natural areas and bushlands, sites owned and managed by Defence and state agencies (national parks, extensive areas managed by water authorities), local government areas, private land (nature refuges, Indigenous Protected Areas), islands, creeks, rivers, beaches, Great Barrier Reef national and state parks, public gardens, and green spaces (e.g. rooftop gardens), as well as the facilitation of domestic gardening and growing activities.

Biodiversity helps to regulate climate, water quality, pollination, animal health and habitats, flooding and storm surges. It has socio-cultural value because it enhances wellbeing as people walk through forests, along rivers, or spend time in green spaces in the city<sup>7</sup>. Any loss or continued deterioration in the condition of biodiversity can have severe impacts on societies because it is intrinsic to material welfare, the security of communities, the resilience of local economies, relations among groups in communities, and human health (please see the *Agribusiness, Food and Fibre Industries Skills Report* for discussion of the *Australia State of the Environment 2021* report). Biodiversity is also critical to the culture and lifestyles of Aboriginal and Torres Strait Islander people. The concept of connection to country encompasses people, animals, plants, land and water in a unified cultural environment, of which First Nations people are traditionally custodians and stewards.

In Australia, the importance and complexity of managing biodiversity is especially challenging because of the sheer number of native and unique plants and animals. There have been numerous biodiversity-related successes in areas with explicit conservation and ecosystem management protections; for example, Indigenous Protected Areas, wherein biodiversity and conservation is managed by Aboriginal and Torres Strait Islander groups, account for around half of Australia's National Reserve System (74 million hectares). Recognition of and support for the rights and aspirations of Aboriginal and Torres Strait Islander peoples in caring for country has proven critical to Australia's conservation and biodiversity commitments.

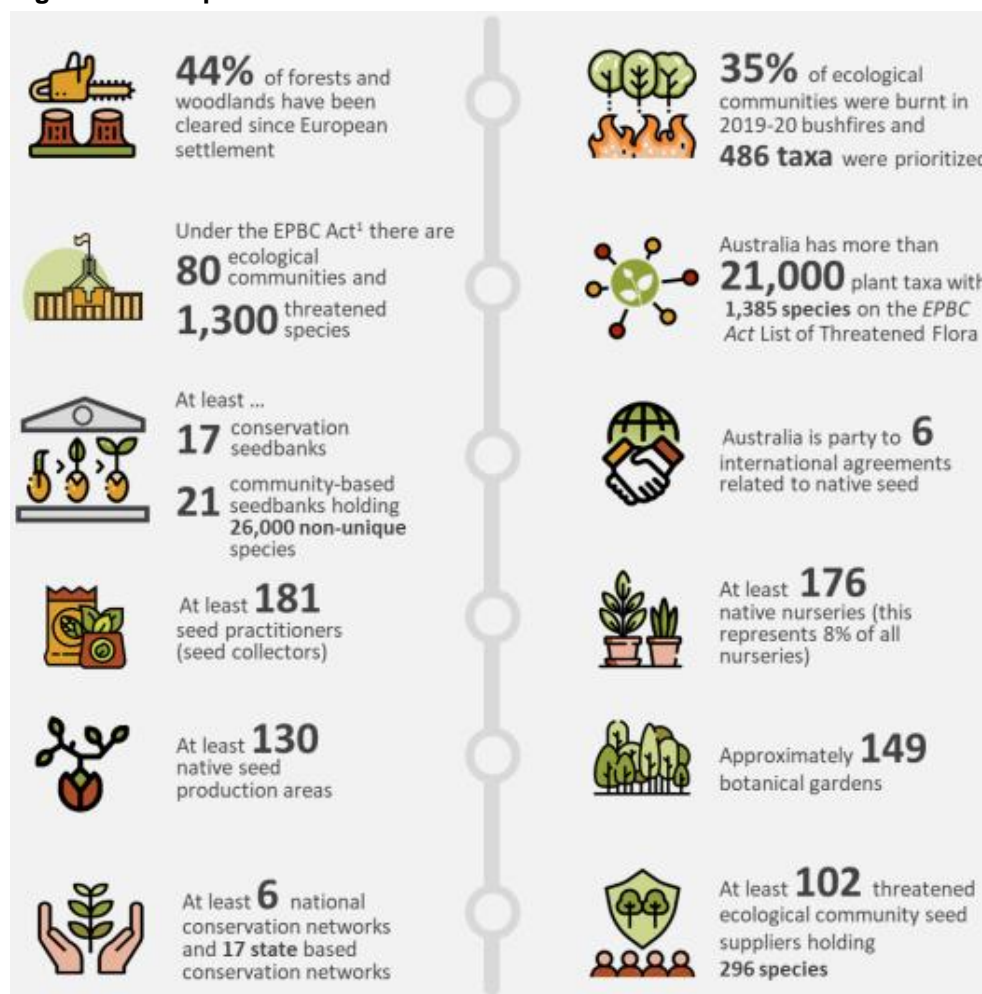
Approaches to better manage the restoration and rehabilitation of landscapes and support biodiversity conservation include the *Strategy for the Australian Native Seed Sector*, a ten-year plan published in late 2021<sup>8</sup>. With over 21,000 different species of native plants, the strategy seeks to help safeguard the different species and their genetics for future generations. Some species are in common use in Australia, while others are protected by law, notably threatened species that occur in endangered ecological communities.

---

<sup>7</sup> The Guardian (2019); *Biodiversity touches every aspect of our lives – so why has its loss been ignored?*; <https://www.theguardian.com/environment/2019/sep/19/biodiversity-touches-every-aspect-of-our-lives-so-why-has-its-loss-been-ignored>; viewed 17/02/2022.

<sup>8</sup> ACIL Allen (2021); *A Strategy for the Australian Native Seed Sector*

**Figure 3: A snapshot of the native seed sector**



Source: ACIL Allen (2021); *A Strategy for the Australian Native Seed Sector*; p.25

Native seeds are utilised for native foods, novel products and in gardens, which creates opportunities for communities (notably Traditional Owners), industry sectors (including conservation and landcare), and occupations (seed collectors, restoration practitioners and rehabilitation practitioners). The *Strategy for the Australian Native Seed Sector* states that the capacity for commercial and not-for-profit organisations to invest in workers' skills and capabilities is currently limited by a lack of data on the demand for native seed, as well as on seed production areas, seed banks and storage requirements. One of the key goals of the strategy is to support the leveraging of workforce skills and capabilities to enact efficiencies in the use of limited resources.

To build the capacity of the sector, as well as improve employee retention and attraction, the strategy focusses on making education and training more accessible. Specifically, there are objectives to 'work with providers and potential providers of native seed education and training to strengthen the range and quality of education and training provided'; and to engage with the sector 'to identify existing education and training programs that can be expanded and any gaps where new programs should be developed'<sup>9</sup>.

<sup>9</sup> ACIL Allen (2021); *Implementing the Strategy for the Australian Native Seed Sector: Action Prospectus*



## Aboriginal and Torres Strait Islander Custodianship

Traditional land and sea management strategies play an important role in the preservation and maintenance of natural ecosystems, parks, reserves, Indigenous culture and heritage, and wildlife habitats. There is growing demand for effective training to help the conservation and ecosystem management industry develop the skills and knowledge to implement these strategies.

Many claims relating to Aboriginal and Torres Strait Islander custodianship of, and rights to, Australia's land and water have been finalised. With this has come a change in the way that work is being undertaken to protect and conserve natural areas. For example, there is a growing movement for land rehabilitation in mining areas, where land and habitat recovery are key strategies for minimising or even reversing negative human impacts on biodiversity. Mining operations are carried out predominantly in regional areas, where there are generally small settlements, including Aboriginal communities, whose concerns are not always accounted for when resource companies implement strategies for the closure of mines. There have been various calls for improving understanding of, and skills for, rehabilitation processes, especially in monsoonal tropics, where large mining proposals continue to be an option for developing northern Australia. In response, the Amenity Horticulture, Landscaping, Conservation and Land Management Industry Reference Committee (AHLCLM IRC) partnered with industry members to develop training package products for the hands-on skills required to restore mined land<sup>10</sup>.

Aboriginal and Torres Strait Islander communities, business enterprises and individuals are also now major employers of workers or service providers in ecosystem management. For example, a commercial property in Esperance, WA, has become the new headquarters for the business activities of the Esperance Tjaltjraak Native Title Aboriginal Corporation (ETNTAC), with support from an Indigenous Land & Sea Corporation (ILSC) grant. The 300 Indigenous member corporation represents several thousand Esperance Nyungar Native Title holders and employs 44 staff, of which 90% are Indigenous, to run its expanding business and land management services. This permanent base is allowing ETNTAC to implement plans to employ additional Indigenous Rangers and other staff as part of its Tjaltjraak land and sea enterprise programs, which aim to grow the value and productivity of country using sustainable methods<sup>11</sup>.

Various industry stakeholders have recognised the importance of developing closer working relationships with Aboriginal and Torres Strait Islander communities and business enterprises. This is likely to be an ongoing priority for the skills and VET system because many potential opportunities, including for ecosystem management, can be unlocked with traditional ecological knowledge and practices.

Skills standards relating to savanna burning carbon farming projects, including projects carried out on Aboriginal land, have already been developed under the guidance the AHLCLM IRC<sup>12</sup>.

## Climate and carbon

The Amenity Horticulture, Landscaping, and Conservation & Ecosystem Management industries are central to Australia's climate action. Positive impacts for environmental, animal and human health are reported from various activities, including:

- Restoring ecosystems and planting and conserving native vegetation provides a natural water filtration system and reduces run-off and erosion (which helps lessen the impact of extreme weather

---

<sup>10</sup> Skills Impact (2021); *Skills for Land Rehabilitation (Mined Land)*; <https://www.skillsimpact.com.au/horticulture-conservation-and-land-management/training-package-projects/skills-for-land-rehabilitation-mined-land/>; viewed 22/05/2022.

<sup>11</sup> Australian Government (2021); *New home for Esperance Indigenous corporation more than just a building, WA*; <https://www.transparency.gov.au/annual-reports/indigenous-land-and-sea-corporation/reporting-year/2020-21-40>; viewed 22/05/2022.

<sup>12</sup> Skills Impact (2021); *Carbon & Agribusiness Management Project*; <https://www.skillsimpact.com.au/agriculture/training-package-projects/carbon-agribusiness-management-project/>; viewed 31/08/2022.



events such as floods)<sup>13</sup>.

- Creating urban green spaces helps reduce the impacts of air pollutants in cities and can help improve human health.
- Trees can significantly reduce urban temperatures (including 'heat island' effects), which helps lower carbon emissions because of lower energy use (e.g. through air conditioners)<sup>14</sup>.
- Green roofs in urban environments are established tools for creating cooler, more biodiverse and liveable cities, and require skills for plant selection, green roof management and maintenance<sup>15</sup>.

Research and development is both informing the industry and supporting businesses in enacting efficiencies. For example, the Hort Innovation Nursery Fund has invested in various projects to develop knowledge on the suitability of different plant species under current and future environmental conditions and climate scenarios in different places. Numerous educational workshops have presented findings from these projects and explored associated skills and opportunities for greenlife businesses across Australia<sup>16</sup>.

The 'More Trees for a Cooler, Greener West' program in Victoria is seeking to offset climate change, expand green spaces, reduce pollution and create jobs with the planting of 210,000 mature and young trees along trails, in parks, outside schools, and on residential streets across six local council areas by November 2022<sup>17</sup>. Tree coverage addresses the urban 'heat island' effect by providing shade, filtering pollution and providing oxygen, and can reduce ground-level temperatures by 10-25°C. The program is also intended to improve biodiversity by creating more homes and food for wildlife.

The national not-for-profit campaign Country Needs People has welcomed the federal government's 2022 budget pledge to double Indigenous Ranger jobs across Australia by 2028<sup>18</sup>. Country Needs People Executive Director Patrick O'Leary states that the \$636 million dollar commitment will 'assist traditional owners to 'build and re-build' their communities in the face of climate change'<sup>19</sup>.

## Water

Water and soil issues remain at the forefront of Amenity Horticulture, Landscaping, Conservation & Ecosystem Management planning. Water is a crucial but scarce resource, exemplified by Australia's status as the driest inhabited continent on earth. This has led to rising water prices, as well as unequal and inconsistent access to water at different times and under different conditions for different businesses.

In a market analysis by ACIL Allen<sup>20</sup>, water security is ranked as the third most significant issue for the greenlife industry. Water access and use is acknowledged as 'a critical part of the greenlife industry across the entire supply-chain starting from a production input for the growers, maintaining the production as it goes to market and to the enjoyment and success for the end consumers.'. In the Australian context, where there is drought and policy uncertainties across different states, tighter water restrictions can lead to higher rates of plant failure, which is a significant risk for nursery businesses. Water security therefore reduces risk and helps drive business expansion.

---

<sup>13</sup> Society for Ecological Restoration Australasia (2018); *National standards for the practice of ecological restoration in Australia*

<sup>14</sup> Greenlife Industry Australia (2022); *Greenlife in Urban Australia*;  
<https://www.greenlifeindustry.com.au/static/uploads/files/greenlife-stats-19-20-wfhhbpuqteod.pdf>; viewed 11/05/2022.

<sup>15</sup> Greenlife Industry Australia (2021); *Nursery papers: Accelerating uptake and removing barriers to green roofs in Australia*;  
<https://www.greenlifeindustry.com.au/static/uploads/files/211115-nursery-papers-nov-21-03-wfivvjhlhlsfk.pdf>; viewed 13/05/2022.

<sup>16</sup> ACIL Allen (2021); *Greenlife market analysis: market commentary*; p.34

<sup>17</sup> Premier of Victoria (2022); *Over 200,000 Trees For The West*; <https://www.premier.vic.gov.au/over-200000-trees-west>; viewed 10/05/2022.

<sup>18</sup> Country Needs People (2022); *Doubling Indigenous Ranger Funding Is A Globally Significant Step For Australia*;  
[https://www.countryneedspeople.org.au/doubling\\_indigenous\\_ranger\\_funding\\_2022](https://www.countryneedspeople.org.au/doubling_indigenous_ranger_funding_2022); viewed 10/05/2022.

<sup>19</sup> ABC News (2022); *Federal budget 2022: Winners and Losers*; <https://www.abc.net.au/news/2022-03-29/federal-budget-2022-winners-and-losers/100914858>; viewed 10/05/2022.

<sup>20</sup> ACIL Allen (2021); *Greenlife market analysis: market commentary*

Greenlife Industry Australia describe how water quality sensors are driving production nursery decision-making<sup>21</sup>. Using a combination of water quality sensors and desktop photometers, nursery managers can observe water quality fluctuations and the rate of the leaching of nutrients from plant containers. This helps managers make decisions about daily irrigation practices and production processes, resulting in healthier plant development. It also allows nurseries to safeguard local waterways by ensuring that the levels of phosphates and nitrates in nursery water discharges, especially during heavy rain or flooding events, are within acceptable limits.

## Digital & Automation Practices

Please see the *Agribusiness, Food and Fibre Industries Skills Report* for additional information and data on digital and automation practices, including the *Agricultural Workforce Digital Capability Framework*, drone usage, digital ecosystems (including connectivity issues in regional areas) and digital and automation skills delivery.

In the greenlife industry, technological solutions are being implemented from the fields of robotics/automation and biology/genetics. However, more research is required to assess the extent of these trends and the various opportunities that wider adoption of technologies may unlock in the Amenity Horticulture, Landscaping, and Conservation & Ecosystem Management industries<sup>22</sup>.

## Environmental Regulations, Codes of Practice and Guidelines

Sectors within Amenity Horticulture, Landscaping, Conservation & Ecosystem Management face specific environmental regulations, codes of practice and guidelines which need to be addressed through skills development. Notably, the *Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)*<sup>23</sup>, the Australian Government's central piece of environmental legislation, which provides a legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities and heritage places, is being reviewed by the federal Environment Minister, with the aim of introducing new legislation in 2023<sup>24</sup>.

Please see the *Agribusiness, Food and Fibre Industries Skills Report* and *AHC Training Package Companion Volume Implementation Guide*<sup>25</sup> for more details on conservation legislation; environmental regulations; industry codes of practice; and information on regulated occupations.

## Workplace and Value Chain Risk Management and Safety Culture

Across the Amenity Horticulture, Landscaping, Conservation & Ecosystem Management industries, numerous strategies are being implemented to support and improve workplace safety outcomes. Workplace safety is of particular concern in these industries due to the specific environments, tools and animals that people work with; for example, in consideration of the heightened safety precautions that arborists need to apply when working at height and using chainsaws.

---

<sup>21</sup> Greenlife Industry Australia (2022); *How water quality sensors are helping with production nursery decisions*; <https://www.greenlifeindustry.com.au/communications-centre/how-water-quality-sensors-are-helping-with-production-nursery-decisions>; viewed 10/05/2022.

<sup>22</sup> ACIL Allen (2021); *Greenlife market analysis: market commentary*; p.37.

<sup>23</sup> Australian Government (2022); *Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)*; <https://www.dcceew.gov.au/environment/epbc>; viewed 29/09/2022

<sup>24</sup> ABC News (2022); *Questions over land clearing in North Queensland where vulnerable species are thought to live*; <https://www.abc.net.au/news/2022-09-28/questions-over-land-clearing-in-north-queensland/101478962>; viewed 29/09/2022

<sup>25</sup> Australian Government (2022); *VETNet*; <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=c6399549-9c62-4a5e-bf1a-524b2322cf72>; viewed 10/05/2022.

## Natural disaster planning, response and recovery

Drought, floods and bushfires create extreme safety issues as well as social and economic challenges that threaten the continuity of industry sectors, businesses and workforces, and severely impact on peoples' mental health. During such times, there is increased demand for workers to carry out response and recovery work to help businesses re-establish disrupted operations; yet many of the casual or seasonal workers who populate the AHLCLM-related industries may have moved on to guarantee continued income.

There are also implications for workforce skills because training delivery may be discontinued when RTOs' property and employees are similarly affected by events such as floods. Workplace training delivery is also likely to be halted when businesses are grappling with the response and recovery from extreme events; and affected stakeholders' ability to participate in training package review and development work is curtailed. This situation is exacerbated because fewer workers or trainers will choose to relocate to the affected areas, especially when housing and food supplies are disrupted.

Responses to these situations requires a well-trained workforce and public awareness. Improving risk management strategies and enhancing the overall safety cultures across industries, especially in regional, rural and remote Australia, is likely to mitigate some of the devastating effects of future natural disasters on both populations and industries. Industry Reference Committees have advised that the Australian skills and training system can do more to ensure the critical skills for planning, response and recovery, including through the creation of skills sets for swift and targeted upskilling of impacted workers.

## Floods

Greenlife Industry Australia describe how:

'Throughout February and March this year [2022], the east coast of Australia has been battered with severe thunderstorms, flash flooding and king tides. Many businesses, including nurseries, have been impacted by flood damage, landslips, ceiling collapses and evacuation orders.'  
<https://www.greenlifeindustry.com.au/communications-centre/wild-weather-trading-through-emergency>

The Amenity Horticulture, Landscaping, and Conservation & Ecosystem Management industries have reported on the extent of the impact caused by flooding on numerous businesses across sectors:

- Nursery businesses were decimated by floods in areas such as Lismore in northern NSW. One nursery lost around 30,000 trees.
- Extreme weather, including torrential rain, and wet conditions with little sunshine, have exacerbated pest and disease management issues.
- Weed growth across natural areas, combined with the inability to access areas due to washed out tracks, tree falls and sodden ground, meant that many weed infestations significantly increased (in species diversity, density and distribution).
- Waterlogging caused major problems for landscapers and landscape construction in NSW and QLD.
- Community sports grounds and golf clubs experienced multiple flooding events, subsequently requiring extensive clean-up operations to re-establish service provisions.
- Turf farms were damaged by floods and associated debris beyond repair. Businesses had to re-start from scratch.
- In many cases, it was not possible to undertake maintenance on turfed sites because waterlogging was too extensive and it was too cold for grass, which had gone into dormancy.

- Grass was also ruined because businesses were unable to acquire tractors or mowers, which were in shortage due to high demand coinciding with production factories having been closed during COVID-19. In many cases, businesses' machinery had been washed away by the floods, with resulting loss or need for repairs, which would take many months to be fulfilled due to demand.

Recovery efforts by industry stakeholders are continuing and have created significant additional pressures compared to normal business operations. The demand for new training delivery, or continuing established programs, has been impacted, and affected stakeholders' ability to offer time to support training package development work has diminished.

The need for relevant skills and knowledge has become even more crucial in these uncertain and challenging times, necessitating that more proactive – rather than reactive – training is delivered in anticipation of these increasingly frequent disasters.

# Industry Summary and Trends

## Workforce, Business and Market Summary

The Amenity Horticulture, Landscaping, Conservation & Ecosystem Management industries work with and protect Australia's environmental assets, now valued at more than \$6.5 trillion according to the ABS<sup>26</sup> and CSIRO<sup>27</sup>.

In total, the Agriculture, Horticulture and Conservation and Land Management industries account for almost half a million employees. Around 184,000 individual businesses operate and trade in locations spanning all states and territories, and comprise a variety of small, medium and large enterprises. The sectors across these industries are extremely varied, with large agribusinesses, as well as niche, specialist and regional operators. Overall, the Agriculture, Horticulture and Conservation and Land Management industries have a total revenue of over \$171 billion and contribute almost \$43 billion to overall GDP ('industry value added').

**Table 1: Industry Financial Activity**

Training Package-Related Industries	Revenue (\$billion)	Industry Value Added (\$billion)	Businesses	Employment
Agriculture, Horticulture and Conservation and Land Management	\$171.18	\$42.78	184,186	499,054

Source: IBISWorld Industry Wizard, 2022

As with all industries since the start of 2020, Amenity Horticulture, Landscaping, Conservation & Ecosystem Management has experienced disrupted supply chains and labour supplies because of the COVID-19 pandemic; however, the robust adaptations, innovations and evolution of these 'essential industries' mean that, in spite of on-going challenges, they are thriving<sup>28</sup>.

There has been an unprecedented demand for nursery, landscaping and gardening services and products as a result of both new and experienced customers renovating their gardens and veggie patches while spending greater amounts of time at home. The nursery industry has reported a sustained rise in plant sales since the start of COVID-19-related restrictions. ACIL Allen<sup>29</sup> found that:

- There has been an overall 26% increase of sales by the greenlife industry overall, with over 2.2 billion plants produced and sold in Australia in 2019–2020
- Indoor plants accounted for 13% of these sales, compared to 9% the previous year
- While there have been stock shortages (e.g. of plastic pots), 88% of growers are confident in the future of the industry
- 67% of all nursery industry businesses are currently investing in business infrastructure. A significant proportion of this investment will be directed to new technology to improve productivity,

<sup>26</sup> ABS (2019); 4655.0 - Australian Environmental-Economic Accounts, 2019; <https://www.abs.gov.au/ausstats/abs@.nsf/Latestproducts/4655.0Main%20Features22019?opendocument&tabname=Summary&pr odno=4655.0&issue=2019&num=&view=>; viewed 22/02/2022.

<sup>27</sup> CSIRO (2020); *Australia's Biosecurity Future*

<sup>28</sup> R. Heath (2021); Editorial: Ag thriving in disruption; *Farm Policy Journal Vol. 18, No.2, Winter Quarter 2021*

<sup>29</sup> Greenlife Industry Australia (2022); *Nursery Papers: March 2022*;

<https://www.greenlifeindustry.com.au/static/uploads/files/nursery-paper-march-2022-fostering-innovation-within-production-nurseries-wfdvvcvmond.pdf>; viewed 22/06/2022.

profitability and sustainability. Such developments raise demand for additional digital, management and business strategy skills<sup>30</sup>.

Please see the *Agribusiness, Food and Fibre Industries Skills Report* for additional information on industry workforce demographics, including diversity and educational attainment.

## Shortage of skilled workers and skills priorities

There are widespread skills shortages across all sectors of the Amenity Horticulture, Landscaping, Conservation & Ecosystem Management industries, jeopardising the short- and long-term viability of many businesses. Such issues are reflective of both the impacts of COVID-19 on international workers' entry to Australia and longstanding concerns associated with an ageing workforce.

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 shortages, when 'employers are unable to fill or have considerable difficulty filling vacancies for an occupation or cannot meet significant specialised skill needs within that occupation, at current levels of remuneration and conditions of employment and in reasonably accessible locations'<sup>31</sup>. Occupational shortages designated by the NSC for Amenity Horticulture, Landscaping, Conservation & Ecosystem Management are:

**Table 2: Skills Priority List Occupations**

ANZSCO Code	Occupation	Current national shortage overall?	Future demand (five-year period)
362212	Arborist	Yes	Strong
362213	Landscape Gardener	Yes	Strong
362311	Greenkeeper	Yes	Moderate
362411	Nurseryperson	Yes	Moderate
362211	Gardener (General)	No (shortage in NSW & NT)	Strong
121218	Turf Grower	No (shortage in NT)	Soft
139912	Environmental Manager	No	Strong
232112	Landscape Architect	No	Strong
841913	Pest Controller	No	Strong
234311	Conservation Officer	No	Moderate
234312	Environmental Consultant	No	Moderate
234314	Park Ranger	No	Moderate
234515	Botanist	No	Moderate
362111	Florist	No	Moderate
121212	Flower Grower	No	Soft

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

<sup>30</sup> Greenlife Industry Australia (2022); *Nursery papers: Learn more about your business with industry data*; <https://www.greenlifeindustry.com.au/static/uploads/files/nursery-paper-april-2022-learn-more-about-your-business-with-industry-data-nursery-wfxyzwvlocyz.pdf>; viewed 13/05/2022.

<sup>31</sup> National Skills Commission (2021); *Skills Priority List Methodology*; p.5.



Members of the AHLCLM IRC also report from their extensive networks that there is an extreme shortage of qualified or experienced bush regenerators and ecological restoration practitioners across Australia. This current shortage is likely to create strong future demand given the increased national emphasis on climate change mitigation and other topics covered in this report.

## Workforce attraction and retention strategies

Navtej Bal, Chief Executive Officer of Ironwood Institute, which delivers qualifications with career pathways for roles in plant propagation, land conservation and restoration, landscaping and garden design, has addressed the future of the labour market<sup>32</sup>. He recommends that positive change could further be stimulated by:

- More effective promotional activities in schools, including improved career advice
- The development of more entry-level micro-credentials that can lead to further training and qualifications
- More agile education models that allow individuals, in consideration of their current skills and prior learning, to participate in training that focusses on areas in which they need to upskill and develop.

With the development of Industry Clusters as part of the Australian Skills system, industry stakeholders are beginning to formulate attraction methods based on workplace-based experience and training opportunities for transferable skills that may be applied across multiple industries. While the Amenity Horticulture, Landscaping, Conservation & Ecosystem Management industries wish to attract new entrants into specific occupations, there have been difficulties attracting initial interest, which may be overcome through strategies such as showcasing industry careers during public events, including flower and garden shows, and developing resources that speak to young people.

To promote the greenlife industries, for example, Landscaping Victoria Master Landscapers (funded by the now-superseded Victorian Skills Commissioner) have commissioned videos on industry careers and opportunities. In addition to information about apprenticeship opportunities, various sectors have videos on the YouTube channel to promote careers in:

- Landscape construction
- Landscape design
- Landscape gardening and maintenance
- Sports turf
- Arboriculture
- Nurseries<sup>33</sup>.

Industry stakeholders have welcomed these resources as valuable for attracting the next generation of skilled workers, including people still at school and considering their future careers. The videos are part of an industrywide effort to reframe popular conceptions of hard labour with the satisfaction of completing projects that grow trees and plants, require skills in new technologies, expand the green economy, and contribute to climate change mitigation. Similar initiatives have been developed in agriculture and horticulture, including through NELLEN workforce development projects<sup>34</sup>.

---

<sup>32</sup> Greenlife Industry Australia (2022); *Industry speaks: The future of our labour market*; <https://www.greenlifeindustry.com.au/communications-centre/industry-speaks-the-future-of-our-labour-market/>; viewed 11/05/2022.

<sup>33</sup> Landscaping Victoria Master Landscapers (2021); *YouTube: Careers in Landscaping*; <https://www.youtube.com/playlist?list=PLkpDriu1Qz8xuGFpgzgIKLPJuJI9fPMi>; viewed 11/05/2022.

<sup>34</sup> Nellen (2022); *Workforce Development*; <https://www.nellen.org.au/projects/workforce-development-project/>; viewed 11/05/2022.

## Training Summary

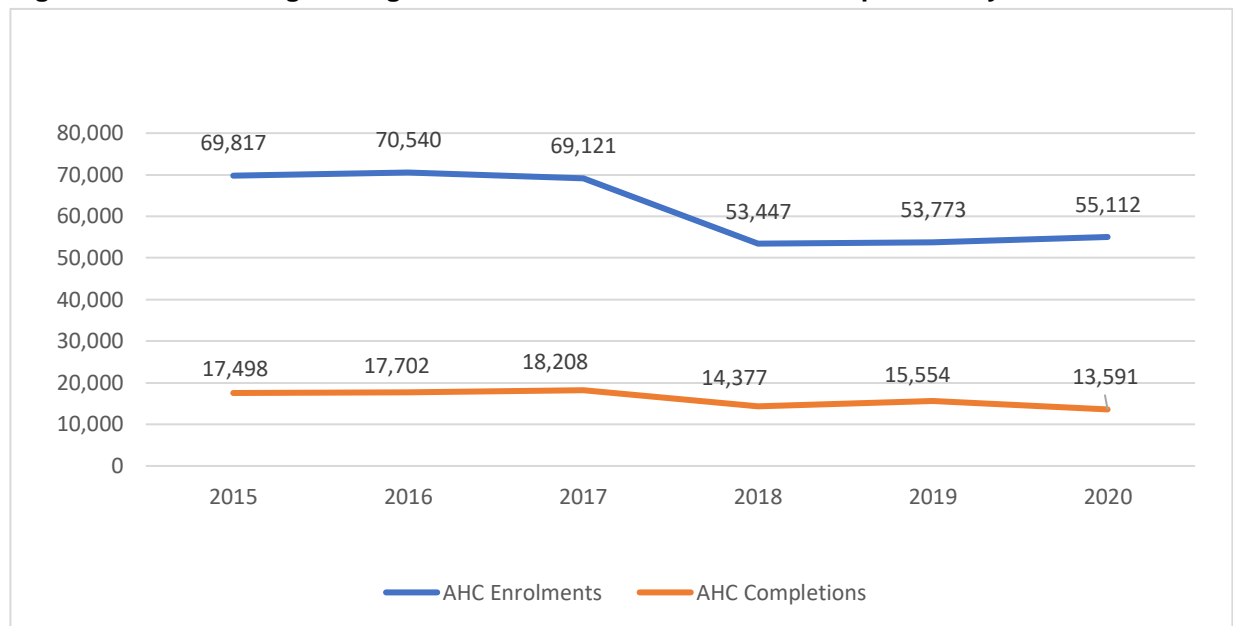
### VET participation

#### AHC Qualifications

In 2020, there were 55,112 enrolments in *AHC Training Package* qualifications.

There were 13,591 qualification completions in 2020.

**Figure 4: AHC Training Package Qualification Enrolments and Completions by Year**



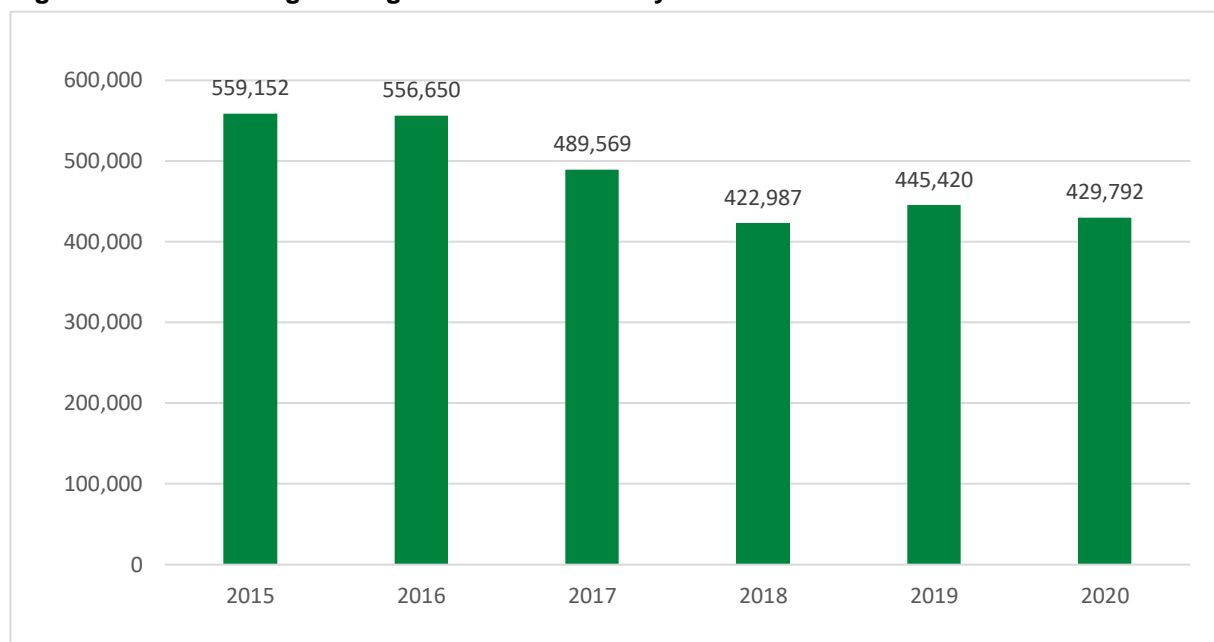
Source: NCVET VOCSTATS, TVA program enrolments 2015-2020

The greatest number of qualification enrolments in 2020 were in Queensland (16,377), followed by New South Wales (14,959) and Victoria (12,211).

#### AHC Units of Competency

In 2020, there were 429,792 enrolments in AHC units of competency (hereafter 'units'). This includes enrolments through qualifications (in any training package), apprenticeships and non-apprenticeships, skill sets and micro-credentials.

**Figure 5: AHC Training Package Unit Enrolments by Year**



Source: NCVET VOCSTATS, TVA subject enrolments 2015-2020

*AHC Training Package* units are developed with multiple industries and delivered by the training providers servicing those multiple industries, because of their capacity to be contextualised. This transferability ensures the training system supports individuals to move easily between related occupations and sectors. Such is the relevance and portability of *AHC Training Package* products, there are 752 instances of AHC units being imported into non-*AHC Training Package* qualifications.

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

### Employers' use and views of nationally recognised training

Please see the *Agribusiness, Food and Fibre Industries Skills Report* for additional information on employers' tendency to adopt mixed models of training, comprising formal VET, extension, and informal workplace-based capabilities development. Employers' choice of training provider is influenced by such variables as local availability of training services, training provider reputation, time constraints, capital (associated with business size and sector) and seasonality. There are also barriers to engaging in nationally recognised training, including difficulties establishing and clarifying the value proposition of VET, preferences for engaging in flexible and shorter-form training that addresses immediate and practical workplace needs, and RTOs' challenges with delivering in thin markets (where supply and demand is imbalanced, often due to the practical challenges of operating in regional areas).

### Regional, Rural & Remote Summary

Please see the *Agribusiness, Food and Fibre Industries Skills Report* for additional information on the many and intersecting challenges of stimulating industry growth and communities in regional, rural and remote areas. It is described that how many enterprises are located in regional locations where access to skilled workers, and resources for inexperienced workers' development, is limited. A lack of infrastructure, housing,

public transport, health services, broadband and mobile connectivity, and access to education and skills training 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<sup>35</sup>.

Implementing the recommendations of the *National Regional, Rural and Remote Tertiary Education Strategy* ('the Napthine Review')<sup>36</sup>, as has been asked of Australia's first Regional Education Commissioner, will complement the VET reform agenda as well as efforts by regional industries to improve productivity and profitability. The Transition Advisory Group<sup>37</sup> 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.

## Aboriginal & Torres Strait Islander Peoples Summary

Aboriginal and Torres Strait Islander cultures possess skills and knowledge that are crucial to land and sea management activities, including conservation and cultural heritage roles. Some of these skills are described in nationally endorsed qualifications, skill sets and units that are used by registered training organisations (RTOs) to equip learners for jobs as Indigenous rangers, conservation field officers, cultural and heritage officers, land council site officers and tourism operators and guides.

Reviewing the 2022 Federal budget, the ABC classified Indigenous Rangers as 'winners', citing the Minister for Indigenous Australians pledge to grow the Aboriginal and Torres Strait Islander ranger's workforce by an extra 2,000 jobs by 2028. This \$636.4 million investment includes provisions to encourage more Aboriginal and Torres Strait Islander women to commence working as rangers on land and sea country<sup>38</sup>.

National ranger initiatives are complemented by state-based programs. In Western Australia, the Aboriginal Ranger Program was developed in 2017-18 to create training, jobs and community development opportunities for Aboriginal people across regional and remote communities<sup>39</sup>. Through the program Aboriginal people continue to be trained and employed as rangers to undertake land and sea management activities, including biodiversity monitoring, fire management, pest animal and weed management and traditional knowledge transfer. Rangers undertake supplementary activities across the value chain, including visitor experiences such as talks, guided tours and education. The Aboriginal Ranger Program has additional social, cultural and economic value in that, as an Aboriginal-led initiative, it builds leadership in regional, rural and remote communities, enhances community wellbeing, and helps reduce poverty through occupational opportunities. Over 600 ranger jobs have been created since the program's inception and, in February 2022, the Government of Western Australia announced a new \$22 million Expansion Fund for on-country ranger positions and career development opportunities<sup>40</sup>.

Aboriginal and Torres Strait Islander people are leading and guiding the review and development work of national skills standards for Indigenous Land Management and Aboriginal Sites Work so that they reflect current skill needs and terminology. It is important to retain the integrity of these training package products and protect Aboriginal and Torres Strait Islander rights to be able to utilise these knowledge and skills for

---

<sup>35</sup> Infrastructure Australia (2022); *Regional Strengths and Infrastructure Gaps Overview*

<sup>36</sup> Commonwealth of Australia (2019); *National Regional, Rural and Remote Tertiary Education Strategy*.

<sup>37</sup> Transition Advisory Group (2021); *Final Advice – New Industry Engagement Arrangements*; Australian Government Department of Education, Skills and Employment; p.2.

<sup>38</sup> ABC News (2022); *Federal budget 2022: Winners and Losers*; <https://www.abc.net.au/news/2022-03-29/federal-budget-2022-winners-and-losers/100914858>; viewed 10/05/2022.

<sup>39</sup> Government of Western Australia (2022); *Aboriginal Ranger Program*; <https://www.dbca.wa.gov.au/parks-and-wildlife-service/aboriginal-ranger-program>; viewed 10/05/2022.

<sup>40</sup> Government of Western Australia (2022); *\$22 million boost to Aboriginal Ranger Program as funding round opens*; <https://www.mediastatements.wa.gov.au/Pages/McGowan/2022/02/22-million-dollar-boost-to-Aboriginal-Ranger-Program-as-funding-round-opens.aspx>; viewed 10/05/2022.

their communities and for personal vocations. It is also important to ensure that these critical knowledge and skills can be recognised by employers for job opportunities, and that any skills gaps are identified and addressed.

A Project Working group of Aboriginal and Torres Strait Islander people and representatives has been formed to discuss the job roles and functions required for this work. They have looked at existing units of competency and qualifications and discussed skill requirements. Some key considerations have included:

- appropriate language and consistent terminology
- protection of cultural IP and the sharing of knowledge
- clarifying the target cohort and job outcomes
- qualification structures and pathways connected to conservation and ecosystems management
- foundational skills are considered and incorporated in the qualification
- awareness and understanding of the different legislation, regulations, local laws and community lore.

Such partnership working contributes to the critical economic and social need for training and employment that keeps young Aboriginal and Torres Strait Islander people motivated, engaged and occupied in worthwhile learning and jobs. Educational opportunities, including school-based traineeships and apprenticeships, contribute to Closing the Gap targets (please see the *Agribusiness, Food and Fibre Industries Skills Report* for more information), which are further supported through delivery of courses and qualifications, as illustrated in the case study below.

#### **Case study: Building skills and knowledge in Aboriginal Land Management at Tocal College**

For over five years, Tocal College has been developing and delivering training for Aboriginal Land Management groups in the NSW Hunter region. New offerings include an Introduction to Land Management pathway program and the *Certificate III in Conservation and Ecosystem Management*, with a specialisation in Indigenous Land Management, which are designed for people wanting to work with Local Aboriginal Land Councils and other organisations as part of the green team or ranger work groups.

To ensure the appropriateness of training delivery methods and curricula, the program is delivered in partnership with Hunter Local Land Services and is informed by subject matter experts, including Elders, Local Aboriginal Land Councils, Traditional Owner Organisations, and the Firesticks Alliance.

Courses are designed to equip people with the entry level skills needed for joining the land management workforce, while promoting caring for country and activities for maintaining culture and heritage. This is supporting employment opportunities for local Aboriginal communities and building the capabilities of Aboriginal Land Management workers in carrying out on-ground works, meeting industry standards and delivering funded and commercial projects.

Training is delivered to enable participants to develop the skills to be safe and productive in the workplace, including content on WHS, ecological and cultural site inspections and assessments, working with Community organisations, following cultural protocols, implementing cultural fire practices, coordinating site resources, seed collection and maintaining native areas.

*Provided by Georgina Mason, Education Officer, Tocal College.*