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Invasive Animals Cooperative Research Centre

Scoping study: training and capacity building in vertebrate pest management

Malcolm Brown and Carolyn Munckton

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Scoping Study: Training and Capacity Building in Vertebrate Pest Management

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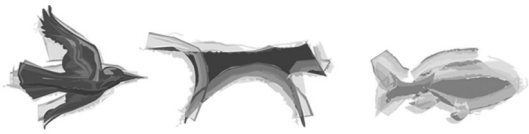

Scoping Study: Training and Capacity Building in Vertebrate Pest Management

Report prepared for the Invasive Animals Cooperative Research Centre's Education Program project 11.E.19:Scoping study on training and capacity building in vertebrate pest management.

The publishers have prepared this report for the Training Working Group of the National Vertebrate Pests Committee.

Disclaimer: The scoping study has focussed on exploring training in vertebrate pest management across Australia. The study is a snapshot in time of the main approaches taken in Australia to training in vertebrate pest management. It is not a complete and exhaustive analysis. It has primarily been developed through consultation with stakeholders. The information is considered current at the time of final report in September 2010 and is based on sources that are believed to be reliable.

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Executive Summary

In Australia, pest animals have major economic, environmental and social impacts. They cause significant damage to agricultural industries and create severe land degradation. Many vertebrate pests prey on native animals, compete for or destroy their habitat, and generally threaten the survival of many of Australia's animals and plants.

Vertebrate pest management is an integral part of the sustainable management of natural resources for the benefit of the economy, the environment, human health and amenity as identified in the *Australian Pest Animal Strategy*, 2007[1].

In response to a perceived reduction in appropriate vertebrate pest management training over the past decade — which is impacting on the capacity of agencies to appropriately manage the damage these animals cause — the Training Working Group of the National Vertebrate Pests Committee (VPC) initiated this scoping study into past and present pest animal training and capacity building. The Invasive Animals Cooperative Research Centre (IA CRC) provided funding for this study through its Education program.

The study has identified significant variation in the content and modes of delivery of vertebrate pest management training across Australia.

Training in vertebrate pest management needs to focus on strategic management rather than eradication programs. It also needs to have a stronger practical component than it currently does.

The study also identified the need for all training in vertebrate pest management to be codified and consistent with the National Training Framework with qualifications readily transferable between jurisdictions.

Whilst there are a small number of specialist training courses in vertebrate pest management the more generic Vocational Education and Training (VET) sector Certificate and Diploma qualifications in the Conservation and Land Management Training Package may comprise as little as 50 nominal contact hours on vertebrate pest management — and often none — due to a lack of training provider expertise in vertebrate pest management. The proposed new Agriculture, Horticulture and Conservation Training Package would have a similar level of exposure to vertebrate pest management.

Under the Skilling Australia for the Future initiative, the Australian Government has funded the Productivity Places Program (PPP), which will deliver 711,000 qualification commencements over five years. These qualifications are being delivered in an industry-driven system, ensuring that training is more responsive to the needs of businesses and participants. The Federal Department of Education Employment and Workplace Relations (DEEWR) funds PPP. VET sector training for vertebrate pest management is eligible for PPP and other DEEWR funding through Registered Training Organisations.

If all vertebrate pest management training were moulded into the national qualifications framework then training would be eligible for funding under PPP and the capacity to increase the skill level of the sector could be improved significantly.

Recommendations

The National Vertebrate Pest Committee should, in association with Agrifood Skills Australia, develop a national training strategy within the Vocational Education and Training (VET) framework

The national pest training strategy should:

- focus on mixed-mode delivery of training and assessment (particularly focussing on the strengths of each system) such as online training, field training, workshop and

[1] Principle 1 of the *Australian Pest Animal Strategy*, 2007.

conference training, face-to-face courses, workplace assessment and skills recognition — these must all be blended together to get the best and most cost-effective outcomes of training

- include recognition of the need to have technical staff trained in the Training and Assessment Program as part of the VET training process
- give special consideration to the high-risk areas of vertebrate pest training, particularly regarding the use of firearms, poisons and actions which may draw in unnecessary media attention
- include a business model so that funding can be sought from the Department of Education, Employment and Workplace Relations (DEEWR)
- be complementary to existing state initiatives but realistic regarding the continuing capacity of the state jurisdictions to undertake training given limited resources
- enable both public and private personnel to undertake the same training, particularly where vertebrate pest control may be outsourced to private sector land management organisations
- include articulation from the VET sector into the university sector so that those with strong field skills are able to gain graduate status despite distance and lack of opportunities for formal study.

1. Key findings

1.1 Training

1. There is significant variation in the content and modes of delivery of vertebrate pest management training across Australia. Fieldwork is an important component of a successful training program. Online training and intensive units or workshops are a feature of some of the current training programs.
2. Training in vertebrate pest management needs to focus on strategic management rather than eradication programs.
3. There is a need for all training in vertebrate pest management to be codified and consistent with the National Training Framework with qualifications readily transferable between jurisdictions.
4. Whilst there are a small number of specialist training courses in vertebrate pest management the more generic VET sector Certificate and Diploma qualifications in the Conservation and Land Management Training Package (RTD02) may comprise as little as 50 nominal contact hours on vertebrate pest management — and often none — due to a lack of training provider expertise in vertebrate pest management. For example, vertebrate pest management is included at only two of the seven South Australian TAFE campuses offering the Conservation and Land Management Training Package.
5. Students undertaking qualifications in the proposed new Agriculture, Horticulture and Conservation Training Package (AHC09) would have a similar level of exposure to pest animal management training as current RTD02 students.
6. Some states and territories have developed more comprehensive vertebrate pest management courses than others. This report recommends a better sharing of successful approaches.
7. The Queensland Department of Primary Industries and Fisheries (Qld DPIF) works closely with local government and provides, free-of-charge, a three-day training program to local government officers involved with pest management.
8. Effective vertebrate pest management requires an improved skills base with a focus on the processes involved in vertebrate pest management. People need a robust skill set, not just a few units here or there. Effective training needs to include real case studies and fieldwork.

1.2 Demand for training and workplace recognition

9. There is an increasing demand for training in vertebrate pest management, particularly in South Australia where the demand is coming from the Natural Resource Management (NRM) Boards.
10. There is an increasing demand for postgraduate-level education in vertebrate pest management. This need is being met by a new Graduate Certificate and Graduate Diploma course at the University of Canberra which will commence in 2011. Attainment of these qualifications could be written into staff work performance plans.
11. Quality training courses need professional recognition and should be included as part of Employee Performance Plans and Workplace Agreements.
12. There is a need for greater participation and training of Indigenous land managers (ILMs) in vertebrate pest management. ILMs manage 14 per cent of Australia's landmass.
13. There is a need for a special course supporting prerequisite literacy for Indigenous Land Managers. This is illustrated in the Northern Territory where a permit to use 1080 will only be issued to people with 1080 qualifications and SMARTtrain chemical user qualifications. The two-day SMARTtrain course is a Certificate Level III course that requires high-level reading and writing skills. This precludes some participants from attaining a 1080 qualification.

14. This study identified that there is currently no Certificate IV level course available in New South Wales for supervisors of the participants in the Industry and Investment NSW (I&I NSW) Certificate III level course at Orange.

15. In Victoria, DPI Pest Management Officers are now required to have an appropriate degree in agricultural science, science or natural resource management, or an equivalent qualification. However, these degrees may have placed little emphasis on vertebrate pest management. Interviewees expressed concern at the level of practical knowledge held by new staff about vertebrate pest management.

1.3 Succession planning and loss of expertise

16. A number of interviewees commented that "we are living on past capital". That is, many vertebrate pest experts have either left the field or retired in recent years and there is an urgent need for succession planning in vertebrate pest management training.

17. Vertebrate pest management is no longer a mandatory subject in the Bachelor of Science (Natural Resource Management) course at the University of Adelaide and possibly other similar degree courses. This is a threat to succession planning in vertebrate pest management.

18. Science education in primary and secondary schools provides an opportunity to inform students about vertebrate pests and how they are managed, and to communicate the range of exciting and challenging careers in vertebrate pest management. The website www.feral.org.au and the associated curriculum resources (www.pestales.org.au and www.feralfocus.org.au) are helping to address this situation. This is an important aspect of future capacity building.

1.4 Future opportunities

19. The future of successful vertebrate pest management is inextricably linked to integrated noxious weed management. There is a growing demand for training in weed management among the NRM peak bodies and Catchment Management Authorities (CMAs). The current limited provision of training courses is inadequate to meet this need.

20. There is a need to protect the intellectual property of the people and organisations delivering the vertebrate pest management courses across Australia. There is also perceived to be a strong international market for vertebrate pest management training.

21. Peak NRM boards/CMAs play differing roles in states and territories in relation to strategic pest animal management and onground control, however many staff have had only minimal training in vertebrate pest management.

22. Staff working in vertebrate pest management training across Australia expressed the sentiment that they belonged to a loose collective of like-minded people. There is potential for a more formal and purposeful national network to which all vertebrate pest management training staff could belong. Whilst the IA CRC partly meets this need, there is also an opportunity to embrace the National Conservation and Land Management Training Providers Network.

23. The Australian Pest Animal Strategy, along with related state and territory strategies, provides an ideal framework for future vertebrate pest management training. Future courses provide an important opportunity to communicate changes to the Standard Operating Procedures (SOPs) and Codes of Practice (COPs) for the humane control of vertebrate pest species.

24. The 15th Australasian Vertebrate Pest Conference: Security from the impact of vertebrate pest animals, to be held in Sydney 20–23 June 2011, is an opportunity to announce a national, cohesive capacity building strategy for future training in vertebrate pest management.

25. Consideration of alternative and nationally cohesive funding models for the future, such as those in the building and construction industry, make it clear that if all vertebrate pest management training were moulded into the national qualifications framework then training would be eligible for funding under the Federal Government's Productivity Places Program (PPP) and the capacity to increase the skill level of the sector would improve significantly.

1.5 Recommendations

The National Vertebrate Pest Committee should, in association with Agrifood Skills Australia, develop a national training strategy within the VET framework.

The national pest training strategy should:

- focus on mixed mode delivery of training and assessment (particularly focussing on the strengths of each system) such as online training, field training, workshop and conference training, face-to-face courses, workplace assessment and skills recognition. These must all be blended together to get the best and most cost-effective outcomes of training
- include recognition of the need to have technical staff trained in the Training and Assessment Program as part of the VET training process
- give special consideration to the high-risk areas of vertebrate pest training, particularly regarding the use of firearms, poisons and actions which may draw in unnecessary media attention
- include a business model so that funding can be sought from the Department of Education, Employment and Workplace Relations (DEEWR)
- be complementary to existing state initiatives but realistic regarding the continuing capacity of the state jurisdictions to undertake training given limited resources
- enable both public and private personnel to undertake the same training, particularly where vertebrate pest control may be outsourced to private sector land management organisations
- include articulation from the VET sector into the university sector so that those with strong field skills are able to gain graduate status despite distance and lack of opportunities for formal study.

2. Introduction

In Australia, pest animals have major economic, environmental and social impacts. They cause significant damage to agricultural industries and create severe land degradation. Pest animals prey on native animals, compete for or destroy their habitat, and generally threaten the survival of many of Australia's native animals and plants.

Vertebrate pest management is an integral part of the sustainable management of natural resources for the benefit of the economy, the environment, human health and amenity as identified in the Australian Pest Animal Strategy, 2007[2].

According to this Strategy it has been estimated that 11 of Australia's major vertebrate pests have negative impacts in Australia valued at more than $720 million[3].

Education and Training is identified as one of the five major challenges in this Strategy.

It is estimated that the vertebrate pest management industry employs more than 2500 people covering Federal, state/territory and local Government agencies and authorities responsible for pest animal management (such as the Australian Pest Animal Management Program, Natural Resource Management regions, CMAs and Livestock Health and Protection Agencies) and private contractors. In addition to this figure, there are also people employed in vertebrate pest control by lands, parks and wildlife and Indigenous land management sectors.[4]

2.1 About this study

The Training Working Group of the Vertebrate Pests Committee (VPC) perceived a significant reduction in appropriate training for pest animal managers, which is therefore having a major impact on the capacity of agencies to appropriately manage the damage caused by pest animals.

The Training Working Group identified the need for a scoping study into past and present pest animal training and capacity building. The authors of this report were engaged to develop this scoping study.

The IA CRC, through its Education program, provided funding for this scoping study.

2.2 Scope of the study

The project brief requested a report that:

1. Identifies past (2000) and present (2009) agency training in pest animal management including:
    - formal training links to the VET sector and informal training programs
    - source of funds for training and approximate duration and costs of course
    - skills and experience of the trainers
    - general form of the training (online, intensive short courses or a mixture of online and hands-on)
    - levels of training (in line with the Conservation and Land Management Training Package for Pest Animal Management)

[2] *Australian Pest Animal Strategy*, 2007, Natural Resource Management Ministerial Council, developed by the Vertebrate Pests Committee

[3] Gong W et al, 2009, *The economic impacts of vertebrate pests in Australia*, Invasive Animals CRC, Canberra

[4] National Training Information Service website, www.ntis.gov.au

2. Identifies future (by 2015) needs in training and capacity building, drawing on:
    - the *Australian Pest Animal Strategy* and related state and territory strategies and their implementation
    - Standard Operating Procedures (SOPs) and Codes of Practice (COPs)
    - an assessment of the past and current training collected during the study
    - consideration of alternative and nationally cohesive funding models for the future
    - the increasing age of experienced trainers and operation staff
3. Recommends appropriate structures for development and delivery of the future training and capacity building at the national and state levels, including links to relevant pest animal research bodies and government and private Registered Training Organisations.

2.3 Methodology

The scoping study was conducted and prepared in two main ways:

1. Desktop research into Registered Training Organisations (RTOs) offering the Conservation and Land Management Package – Pest Animal Management.
2. Phone interviews and email correspondence with relevant officers involved in training within state and territory agriculture and environmental agencies, and representatives of RTOs as appropriate.

A list of people interviewed as part of this study is included in Appendix 1.

2.4 History

1970s	The Vertebrate Pest Control Authority in South Australia initiates a vertebrate pest management course. The Animal and Plant Control Commission then takes responsibility for the course. The University of Adelaide takes over delivery of the course in the mid-1980s. Phil Stott still runs the course today.
1985	Terry Korn, former National Parks and Wildlife Service (NPWS) Regional Manager, runs a one-week vertebrate pest management (VPM) course in Dubbo.
1990–96	Mike Braysher (now University of Canberra) • Reviews both current and potential pest management training • Develops principles and guidelines focusing on outcomes – managing the damage not the pest • Develops core competencies • Vertebrate Pest Committee (VPC) embraces principles and approaches • Workshops are held in field (National goals are developed over the next four to five years.)
1998	NSW Agriculture signs a Memorandum of Understanding with Livestock Health and Pest Authorities (LHPAs) to provide training in the use of 1080 (a week-long course)
2002	Primary release of the Conservation and Land Management Training Package
2003	Braysher develops a Diploma-level course based on agreed VPC principles
2003	Queensland Department of Natural Resources and Mines introduces Weed and Pest Animal Management Competency Standards for Local Government Officers, based on the National Competency Standards, and delivers training via the Conservation and Land Management Training Package through Dalby Agricultural College and the Australian College of Tropical Agriculture
2004	Queensland Department of Natural Resources and Mines produces a Vertebrate Pest Manual as a resource for the course in Weed and Pest Animal Management for Local Government

2005	NSW DPI introduces a Vertebrate Pest Management short course
2006	Queensland DPI introduces a three-day vertebrate pest training workshop specifically for local government
2008	Diploma-level course in vertebrate pest management commences at University of Canberra
2009	Conservation and Land Management Training Package reviewed results in decision to combine with Agriculture and Horticulture Training Packages
2010	Validation Draft of Unit mapping document for AHC10 Agriculture, Horticulture and Conservation and Land Management released March 2010
2011	Graduate Certificate in Vertebrate Pest Management to commence Semester 1 at University of Canberra Graduate Diploma in Vertebrate Pest Management to commence Semester 2

3 VET training in pest animal management

A Vocational Education Training Package (VET) Training Package is an integrated set of nationally endorsed competency standards, assessment guidelines and Australian Qualifications Framework (AQF) qualifications for a specific industry, industry sector or enterprise.

The Training Package relevant to vertebrate pest management is the Conservation and Land Management (CLM) Training Package – RTD02.

There are six qualifications in the CLM Training Package:

- Certificate I
- Certificate II
- Certificate III
- Certificate IV
- Diploma
- Advanced Diploma.

The CLM competencies are packaged together into combinations that represent meaningful work-related foci for key industry sectors or areas of specialisation in natural resource management. The eight sector specialisations or occupational streams are:

- General Land Management
- Conservation Earthworks
- Community Coordination and Facilitation
- Indigenous Land Management
- Lands, Parks and Wildlife
- Natural Area Restoration
- Weed Management
- Vertebrate Pest Management.

Appendix 2 outlines all of the competencies listed in the Conservation and Land Management RTD02 Training Package.

Only Registered Training Organisations (RTOs) can issue qualifications according to the Australian Quality Training Framework (AQTF).

The CLM Training Package was completed and endorsed in 2002 after considerable work and consultation by the various CLM sectors. In the 1990s, there was a changing emphasis from legislative enforcement to encouragement of appropriate management practices for dealing with pest animals. Education and Training was seen as an important part of this new approach.

The development of a Vertebrate Pest Management Training Package started in 1995 at a two-day workshop organised by the VPC. This workshop began the planning process for national competency standards, national curriculum and training resources for the vertebrate pest management industry. Initially it was envisaged as a stand-alone package, but ultimately it became part of the wider CLM Training Package in order to incorporate all industries involved in land management, conservation and related areas.

3.1 Methodology

The National Training Information Services (NTIS) website (www.ntis.gov.au) lists the training providers that offer the CLM Training Package.

The number of RTOs in each state or territory that offer qualifications within the CLM training Package are as follows.

State	No. of RTOs offering CLM Training Package
NSW	66
Vic	68
Qld	58
SA	30
WA	20
Tas	26
NT	26
ACT	23

Because the CLM Training Package is very wide, not all qualifications offered by these RTOs offer pest animal management units. For example, the focus might be on natural area restoration and revegetation.

Currently in NSW there are no TAFE colleges that offer any of the CLM (Vertebrate Pest Management) courses from Certificate II to Diploma level.

Some RTOs offer qualifications in more than one state.

The CLM Training Package competencies that relate specifically to pest management are:

- RTD2101A Apply animal trapping techniques
- RTD2116A Muster pest animals
- RTD2402A Clear features that harbour pest animals
- RTD2403A Conduct vertebrate pest activities from aircraft
- RTD2405A Tag and locate Judas animals
- RTD3132A Survey pest animals
- RTD3405A Monitor and evaluate the local pest management action plan
- RTD4402A Define the pest problem in a local area
- RTD4403A Develop a pest management action plan within a local area
- RTD4404A Develop monitoring procedures for the local pest management strategy
- RTD4405A Coordinate the local pest management strategy
- RTD4406A Implement pest management action plans
- RTD4407A Investigate a reported pest treatment failure
- RTD5401A Define the pest problem in a regional or broader context
- RTD5402A Develop a strategy for the management of target pests
- RTD5403A Develop a system for monitoring the pest management strategy
- RTD5404A Coordinate the pest management strategy in a regional or broader context
- RTD5405A Evaluate the pest management strategy.

Other competences relevant to vertebrate pest management include:

- RTD2125A Use firearms to humanely destroy animals
- RTD2126A Recognise animals
- RTD3501A Assist in the implementation of legislation
- RTD5910A Contribute to regional planning process
- RTD6502A Review management plans and strategies
- RTD6504A Coordinate the preparation of a regional resource management plan
- PUAFIR601A Develop and administer agency policy, procedures and practices.

The last five competencies have a holistic natural resource management and policy focus and are pertinent for strategic vertebrate pest management within a broader NRM framework.

3.2 VET statistics

The National Training Information Services (NTIS) website (www.ntis.gov.au) lists the training providers that offer the CLM Training Package.

The National Centre for Vocational Education Research (NCVER) is Australia's principal provider of vocational education and training (VET) research and statistics.

NCVER regularly collates and publishes statistics about the VET sector.

A recent publication, *Historical time series of vocational education and training in Australia from 1981*[5] presents a summary of training activity in VET for the period 1981–2008. Statistics show that the number of students enrolled in 'Agriculture, Environmental and Related Studies', dropped significantly over the seven-year period 2002 to 2008 (no figures are reported prior to 2002). The Conservation and Land Management Training Package would be included in the 'Agriculture, Environmental and Related Studies' field of education. The number of students dropped from 95,200 in 2002 to 67,700 in 2008 — a total decrease of 27,500.

NCVER's *Australian Vocational Education and Training Statistics: Students and Courses 2008* publication indicates that the RTD Conservation and Land Management Training Package does not come in the top 20 training packages in terms of numbers of students.[6]

3.3 Review of the Conservation and Land Management Training Package

AgriFood Skills Australia [ASA] (formerly the Agri-Food Industry Skills Council) is one of 11 Industry Skills Councils that provide accurate industry intelligence on current and future skill needs and training requirements.

The Australian Government funds ASA under contract through the Department of Education, Employment and Workplace Relations. ASA supports and gives leadership to the development, implementation and continuous improvement of quality, nationally recognised training products and services, including training packages. Its purpose is to:

- provide industry intelligence and advice to Skills Australia, government and enterprises on workforce development and skills needs
- actively support the development, implementation and continuous improvement of high quality training and workforce development products and services, including training packages
- provide independent skills and training advice to enterprises, including matching identified training needs with appropriate training solutions

[5] NCVER, 6 May 2010. *Historical time series of vocational education and training in Australia from 1981,* Table 10

[6] NCVER, 7 July 2009. *Australian vocational education and training statistics: Students and courses 2008*, Statistical Report. Table 10.

- work with enterprises, employment service providers, training providers and government to allocate training places.

For the past two years, ASA has been working to simplify the structure and increase the level of flexibility within agrifood training packages, to respond to the evolving nature of job roles with the industry.

One current major review is the Agriculture, Horticulture and Conservation and Land Management Training Package AHC09 — which is a merger of the Rural Production Training Package (RTE03), Amenity Horticulture (RTF03) and Conservation and Land Management (RTD02).

In early 2010, ASA completed incorporating feedback into the proposed new AHC10 Agriculture, Horticulture and Conservation and Land Management Training Package. The proposed qualification and units of competency for this training package were downloadable from www.agrifoodskills.net.au at the time of writing this report.

Significant industry and stakeholder consultation has been conducted to produce the new training package, which incorporates qualifications for Agriculture, Production Horticulture, Horticulture, Conservation and Land Management and Services industry sectors.

It is anticipated that ASA will submit the training package for endorsement to the National Quality Council by mid-2010.

Appendix 3 outlines all of the competencies listed in the proposed new Agriculture, Horticulture and Conservation and Land Management Training Package AHC09.

3.4 Participation in the Conservation and Land Management Training Package

Figure 1 shows the changing enrolments for the Conservation and Land Management (CLM) Training Package in the different Australian jurisdictions. The graph shows an increase in participation in the Northern Territory, relatively stable enrolments in Western Australia and Victoria, but declining enrolments in other jurisdictions. The total number of enrolments nationally in the CLM Training Package increased by 19 per cent between 2004 and 2008 but dropped by 19 per cent between 2006 and 2008.

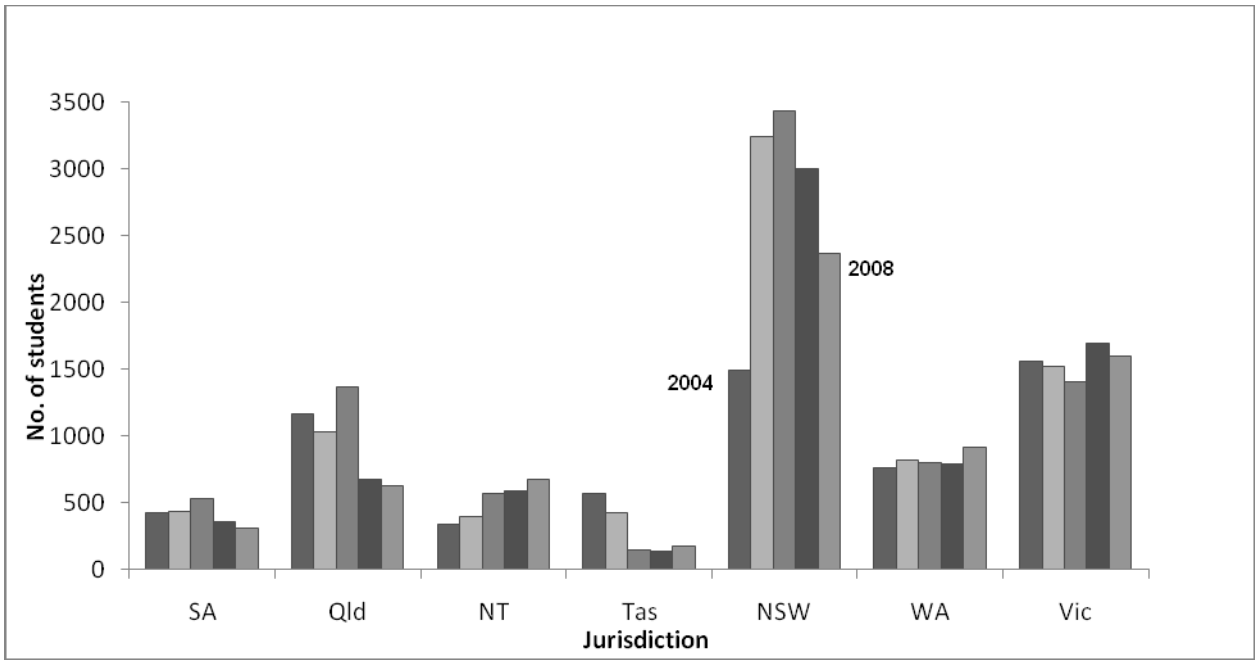

Figure 1: Enrolments in Conservation and Land Management courses by jurisdiction 2004–08 (source www.ncver.edu.au *Note: NSW data includes ACT participants)

The below table illustrates Number of students completing a CLM Training Package Qualification from 2004–07.

CLM Training Package qualification completions	2004	2005	2006	2007
South Australia	132	75	152	76
Queensland	116	149	113	111
Northern Territory	26	67	57	94
Tasmania	11	35	48	55
New South Wales	441	545	545	571
Western Australia	251	232	173	260
Victoria	137	230	188	293
Total	**1114**	**1333**	**1276**	**1460**

3.5 Recognition of prior learning

Recognition of prior learning or RPL is an assessment process that acknowledges the skills and knowledge obtained through learning achieved from work or life experiences that is outside the formal education and training system.

It is recognised that many land management practitioners have extensive management in the field, but may not have undertaken any formal training course in the past. Vocational training (ie VET) in Australia can now recognise 'prior learning' for accreditation towards achieving formal qualifications.

For example, credits toward a Diploma of Conservation and Land Management can also be obtained by participating in a program run out of I&I NSW's Tocal College. Participants can achieve nationally-recognised certification at Certificate III, IV and Diploma levels, depending on experience.

Each candidate is independently assessed against common national criteria, and a Certificate can be used for career progression. Additional training needs and units for individual candidates can also be identified during the assessment.

The first graduates were awarded their Certificates in March 2008. Interest in the program is increasing and more candidates will be assessed on an ongoing basis.

Dr Peter Fleming, Vertebrate Pest Research Unit, I&I NSW has been involved in RPL in vertebrate pest management for many years. Peter recalls one elderly aboriginal woman at a Tanami Desert mine site who had no formal training but unbelievable tracking skills.

Vocational training in Australia can now recognise 'prior learning' for accreditation towards achieving formal qualifications.

4 New South Wales

4.1 Recognition of prior learning

Vertebrate Pest Management Training started in NSW in the mid-1970s, specifically for Rabbit Inspectors. The training was field based and very hands-on, right up until the mid-1990s.

Prior to 1996 each of the five Agricultural Protection Officers would run the course in their own area with the assistance of one other Officer. Courses were run in Wagga, Tumut, Goulburn, Dubbo, Armidale and other centres. Terry Korn was the Officer-in-Charge of the five Agricultural Protection Officers within the NSW Department of Agriculture.

By 2000 the Agricultural Protection Officers had refined the course and mapped the competencies so that a registered training provider could deliver it.

The course was delivered annually at the Orange Agricultural Institute and ran for one week. David Croft and Susie Ballogh coordinated the course, and a professional range of resource materials including notes and PowerPoint presentations were developed.

The Agricultural Protection Officers running the course used the Vertebrate Pest Research Group as guest presenters. This group included Glen Saunders, Peter Fleming, Matt Gentle, John Tracey, Chris Lane, Steve McLeod and others.

The course was seen as a compulsory part of the 1080 and pest management induction for Rangers who were handling vertebrate pesticides.

Participants

By 2000, participants from the agency preceding the Livestock Health and Protection Authority (LHPA) — the Rural Land Protection Board (RLPB) — had been joined by staff from National Parks and Forestry. Around 2002, local government pest management officers and private pest controllers began enrolling.

In 2004–05 participants included managers of projects such as Scotia Sanctuary and the Lake Victoria Management Authority, which faced significant vertebrate pest animal problems.

In the 1970s the course was limited to 20 participants (sometimes 22). By 2007, the number of participants had grown to 65, but since 2009, the course has been capped at 48 despite high demand.

Funding

In the early days the Department of Agriculture had a Training Vote (source of funding). Participants would be charged a small fee to cover the printing of course notes and they would pay for their own accommodation. By 2000 it had become a 'user pays' course.

Course content

In the mid-1970s the course covered rabbits, foxes, wild dogs and pigs. Management of goats was added to the course in the late 1970s.

Courses were also run at Mungo and Willandra Lakes National Parks so that participants could get hands-on experience controlling goats and pigs.

In the early 1990s rodent management was added to the course. In 2000 urban wildlife was introduced to the course, followed soon after by birds, and then deer.

4.2 Vertebrate Pest Management short course

This is the main short course in vertebrate pest management in NSW for agency staff.

Lead agency	Vertebrate Pest Research Unit, I&I NSW
Location	Orange Agricultural Institute, Orange
Commenced	2005
Duration	1 week
Participants	48 (capped)

Nature	Residential and field excursions
Course contact	Cathy Crawford
Cost	$1327 (GST free)
Funding source	I&I NSW and participant course fees
Accreditation	This course has been mapped to the national units of competency of RTD2101A Apply animal trapping techniques RTD3132A Survey pest animals RTD4403A Develop a pest management plan within a local area.

This course is designed for people implementing vertebrate pest management programs.

Course aims: To provide high quality training for those implementing vertebrate pest management for agricultural protection and conservation.

Learning outcomes:

- Describe basic pest animal biology, behaviour and control.
- Design surveys to assess pest animal abundance.
- Identify methods for live trapping and holding, releasing or humanely destroying animals.
- Describe the process of developing an action plan for the management of target pests in a local area.

Attendance numbers of participants have been as follows:

Year	No. of participants
2005	~ 55
2006	60
2007	65
2008	56
2009	47 (capped at 48)
2010	48 (capped)

Classification	Participants	%*
Commonwealth Government	Department of Agriculture, Fisheries and Forestry Department of Defence	2%
NSW or ACT Government agencies	I&I NSW / DPI Dept Environment Conservation and Climate Change and Water (DECCW) Forests NSW National Parks and Wildlife Service (NPWS) ACT Parks Conservation and Lands	53%
Statutory authorities	Livestock Health and Pest Authorities (LHPAs) Catchment Management Authorities Land and Property Management Authority NSW	23%
Local Government	Local Government	11%

Peak bodies	Wild Dog Board Game Council NSW	2%
Private	Private pest management contractors	6%

* Percentages based on 2009 course enrolments

Course program/structure:

Day 1

Topic	Presenter
Introduction	Nathan Cutter
IA CRC	Chris Lane
Principles of vertebrate pest management	Peter Fleming
Principles of monitoring	Phil Gardner
Using handheld GPS units	Ian McGowen
Practical surveying – Field Activity	Ian McGowen/Peter West
Principles of vertebrate pest management	Mike Braysher
The why, where and how of sandplots	Peter Fleming
Sandplots and laying baits	Peter Fleming/ Guy Ballard
View spotlighting track	Col Comerset, Brian Lukins, Guy Ballard

Day 2

Topic	Presenter
Livestock Health and Pest Authority and the Rural Lands Protection Act	Tim Seears
Feral goat biology and control	Peter Fleming
Fox biology and control	Glen Saunders
Group fox programs	Lynette McLeod
Wild dog biology and control	Lynette McLeod
Feral pig biology and control	Jason Neville
Game Council NSW	Troy Hogarth
Wild deer biology and control	Andrew Moriarty
Wild dog biology and control	Phil Gardner
Case study activity – developing a management plan	Cathy Crawford
Post mortems – fox/rabbit	John Boulton

Day 3

Topic	Presenter
1080, other poisons, deterrents and markers	Mark Scott
Animal welfare	Trudy Sharp/Angela Thompson
GPS and GIS	Peter Worsley
An example of practical use of GPS	Phil Gardner
Urban pests	Mel Hall
Feral cats biology and control	Mark Geyle
Field Activity: Pig and cage traps	Jason Neville
Field Activity: Wild dog and fox leg hold traps	Mark Goldspink

Day 4

Topic	Presenter
Kangaroo biology and control	Steven McLeod
Impacts of pest animals on the environment	Ben Russell
Management of pest animals for biodiversity conservation	Ben Russell
Pesticides Act	Roger DeKeyzer
Group facilitation and communication	Lloyd Kingham
Pesticide Control Orders and compliance	Roger DeKeyzer
Field activities: PPE, site inspection, abundance estimates, fumigation, laying baits, harbour destruction	

Day 5

Topic	Presenter
Feral Animal Aerial Shooter Training (FAAST)	Ben Russell
Bird pests	John Tracey
Mouse biology and control	Lisa Thomas
Engaging indigenous communities	Jason Ford

Experience of NSW Vertebrate Pest Management short course presenters

Presenter	Title	Skills and Experience (years)			
		1–10	11–20	21–30	30+
Angela Thompson	A/Resource Management Officer, DPI NSW	■			
Ben Russell	NSW Department of Environment, Climate Change and Water (DECCW)	■			
Brian Lukins	Vertebrate Pest Research Unit I&I NSW		■		
Chris Lane	Coordinator I&I NSW node of IA CRC		■		
Col Comerset	Ranger: Tablelands LHPA		■		
Dr Andrew Moriarty	REACH Officer (Research Education. Advisory Conservation Hunting) Game Council NSW		■		
Dr Mike Braysher	Adjunct Professor, NRM, University of Canberra				■
Glen Saunders	I&I NSW Research Leader Vertebrate Pests and Weeds				■
Guy Ballard	Wild Dog Management Researcher, I&I NSW	■			
Ian McGowen	Research Officer: I&I NSW	■			
Jason Neville	DECCW		■		
Mandi Carr	District Vet: Tablelands LHPA		■		
John Tracey	I&I NSW Research Officer Vertebrate Pests and Weeds		■		
Lisa Thomas	Senior Pest Animal Manager, Central West LHPA			■	

Lynette McLeod	Vertebrate Pest Research Unit, I&I NSW				
Mark Geyle	DECCW				
Mark Goldspink	Forests NSW				
Mark Scott	Agricultural Chemicals Officer: I&I NSW				
Martin May					
Mel Hall	DECCW				
Nathan Cutter	Agricultural Protection Officer: I&I NSW				
Peter Fleming	Senior Research Scientist				
Peter West	I&I NSW Research Officer Vertebrate Pests and Weeds				
Phil Gardner	Program Development Officer: I&I NSW				
Steve McLeod	Research Scientist: Vertebrate Pest Research Unit I&I NSW				
Roger DeKeyzer	Senior Technical Policy Officer: DECCW				
Tim Seers	State Management Council LHPA				
Troy Hogarth	Game Council NSW				
Trudy Sharp	I&I NSW Project Officer Vertebrate Pests and Weeds				

4.3 University of Sydney – Masters of Applied Science (Wildlife Health and Population Management)

Vertebrate Pest Management is one of 12 units in this Masters of Applied Science degree. Each unit is taught intensively for one week. The VPM unit is an intensive one-week field-based course taught at 'Arthursleigh', a University-owned property,nearly Marulan, NSW.

There were nine students in 2008 and 2009. When the course first commenced there was a maximum intake of 20 students. Tony Buckmaster teaches the VPM unit.

The course provides a professional qualification to biologists and veterinarians working in private practice, industry, research and education. It is a unique combination of the veterinary and biological sciences and emphasises the need for a multidisciplinary team approach in the development of wildlife management strategies.

The units of study in this course bring together the disciplines of animal health and wildlife population management, providing students with a coordinated approach to recognising and solving problems in both wild and captive populations.

Most fieldwork in the program is conducted at the 7800 hectare property 'Arthursleigh', involving periods from several days to a week. Some units are conducted in the Royal National Park and at Western Plains Zoo in Dubbo.

Graduates attain scientific skills to detect and diagnose ill-health and other problems in wildlife populations, integrated understanding of animal health and management, conceptual understanding of issues in conservation and pest management, practical application of field and laboratory methods, appreciation of ethical issues in wildlife studies with emphasis on animal welfare, detailed understanding of the ecology and status of Australian wildlife and experience relevant for employment in government, non-government agencies and private industry.

Lead	University of Sydney
Location	• on campus at Sydney University, Camperdown • the university's rural property near Marulan, NSW, the Royal National Park and the Western Plains Zoo at Dubbo
Commenced	2001
Duration	1 year full time or 2 years part time
Participants	varies between 9 and 20 — on average 12 each intake
Nature	Campus and fieldwork
Course Leader	Dr Matthew Crowther Institute of Wildlife Research University of Sydney
Cost	$505 per credit. 48 credits for completion $24,240 in total
Accreditation	Masters of Applied Science

The 12 units in this Masters degree course are:

- Australasian wildlife: introduction
- Australasian wildlife: field studies
- Wildlife health
- Vertebrate pest management
- In situ wildlife management
- Ex situ wildlife management
- Sustainable use and stewardship of wildlife
- Research project
- Science communication
- Commercialisation of science
- Modern ecology
- Structure and management of research projects

Vertebrate Pest Management unit

This unit outlines the impact invasive species and overpopulated native species have on the environment. The unit:

- discusses the impacts of introduced species of vertebrate pests on Australian wildlife, agriculture and habitat
- reviews effectiveness, unintended consequences and animal welfare issues associated with control
- focuses on mammals including horses, goats, pigs, rabbits, mice, foxes, dingos/dogs.

Most students either have a BSc or BVetSc. Some have worked in this field or a related one for some time, whilst others are straight out of an undergraduate degree. There are also international students from all over the world. Some students have neither a BSc nor BVet Sci qualification, but have some form of equivalence (ie, have worked in a related field).

Successful graduates have gone on to work for government agencies (ie, National Parks), non-government organisations such as World Wildlife Fund, zoos, universities and private consultancies. Some graduates have also continued into doctorate-level studies.

4.4 University of Canberra Diploma of Conservation and Land Management (Vertebrate Pest Management)

The Education Program of the IA CRC has developed a Diploma level (Level V) training course in best practice pest management under the Australian Qualifications Framework. It aims to increase the capacity of those involved in planning and implementing strategic, cooperative invasive animal management.

The course is based on the core competencies for pest management that were developed under the auspices of the Vertebrate Pests Committee (VPC) in the mid-1990s. These resulted in the Conservation and Land Management Training Package (pest animals). The course complements the pest animal training course being run by I&I NSW / DPI for Levels I–IV. It is consistent with and will help meet the adoption aims of VPC's National Vertebrate Pest Management Strategy.

The course draws on PESTPLAN and its Toolkit – *A guide to setting priorities and developing a management plan for pest animals*, developed by Braysher and Saunders (2003). State and territory pest agencies as well as managers of pest programs were consulted to determine the key requirements for effective pest planners and managers. It aims to provide field officers with the skills needed to develop and implement strategic vertebrate pest management plans.

Four successful pest management programs were assessed and packaged as case studies to illustrate the desired approach and to support the problem-based approach to learning that is the basis of the course. The following key principles underpin the course:

- a pest is a human construct
- all key stakeholders need to be consulted and actively engaged in the development and implementation of the plan
- rarely can pests be eradicated (that is every last individual eliminated)
- pest management needs to focus on the outcome — ie, what is desired from the management of pests?
- managing the damage due to pests requires a whole-of-system approach
- our understanding of these complex and dynamic systems is imperfect — hence planning needs to incorporate the management of risk
- it is essential to monitor the result of the intervention and evaluate the results against the stated outcomes (as objectives) and evaluate them and the program.

Called *Pest Animals, New Solutions to Old Problems*, the Diploma is delivered by the University of Canberra — a Registered Training Organisation.

The course commenced in 2008. In 2009, 10 scholarships of $3500 were offered to suitable students. The majority of students are from state and territory pest management agencies. Some course participants are from beyond ACT/NSW.

Course leader, Adjunct Professor Mike Braysher, tracks where students are employed after the course and has found that 90 per cent of participants are employed in the field of pest management. Student feedback indicates that it is a very demanding course.

The IA CRC (and Bureau of Rural Sciences) is subsidising the course for four years and $300,000. The course has three years to run. This funding is also allowing the University to employ Tony Buckmaster to write a Graduate Certificate and a Graduate Diploma course (see 4.4 and 4.5).

Lead	University of Canberra (the RTO)
Location	Canberra
First run	2008
Duration	One year course over 2 semesters (4hrs/wk) including a major project
Participants	~ 10* (course targeted to agency staff)
Nature	3 residential workshops plus online delivery
Course Leader	Mike Braysher, Institute for Applied Ecology, University of Canberra
Cost	$7000

Funding source	IA CRC, Bureau of Resource Sciences, student fees
Accreditation	Diploma of Conservation and Land Management specialising in Vertebrate Pest Management (RTD50102)

Course requires 20 participants to cover costs.

Participants	**No.**
I&I NSW / DPI	3
Livestock Health and Pest Authorities (LHPAs)	5
ACT Parks Conservation and Lands	3
CMAs and NRMs including NSW, Qld, and SA	6
WA Department of Agriculture and Food	2
Non-aligned students	4
Department of Primary Industries, Parks, Water and Environment Tasmania (DPIPWE)	1
Department of Sustainability and Environment (DSE) Victoria	1
IA CRC	2

CLM Training Package competencies

RTD5401A	Define the pest problem in a regional or broader context
RTD5402A	Develop a strategy for the management of target pests
RTD5403A	Develop a system for monitoring the pest management strategy
RTD5404A	Coordinate the pest management strategy in a regional or broader context
RTD5405A	Evaluate the pest management strategy
CHCCD4A	Develop and implement community programs
RTD5806A	Promote group formation and development
RTC5913A	Collect and manage data
RTC5914A	Prepare reports
TDTR398B	Negotiate a contract

These competencies have been incorporated into the following modules:

- An introduction to strategic pest management
- Underpinning principles of strategic pest management
- Develop a strategy for management of target pests
- Monitoring and evaluating the pest management strategy
- Program implementation and funding

Course structure

Three-day introductory residential workshop (February)

This workshop provides students with the opportunity to meet each other and university staff. There is a keynote speaker and the online learning platform is demonstrated.

Semester 1 (15 weeks)

- Understanding the pest problem
- An Introduction to strategic pest management

- Underpinning principles of strategic pest management
- Develop a strategy for management of target pests
- Group formation and development
- Implementation of programs
- Promotion and communication

Five-day mid-year residential workshop (July)

This workshop covers face-to-face aspects of the course (eg group facilitation) and assessment items.

Semester 2 (15 weeks)

- Monitoring and evaluating the pest management strategy
- Why, what and how to monitor
- Evaluation of results
- Program coordination and funding
- Understanding the funding system
- Writing good proposals
- Program management, coordination and reporting

Two-day final residential workshop (November)

Presentation of work-based projects.

Case studies

The four case studies used during the course are:

1. Cooperative wild dog/fox control in the Brindabella and Wee Jasper catchments (Rob Hunt, Ranger NSW NPWS)
2. Cooperative fox management at Goonoo, Dubbo, NSW
3. Cooperative fox management on South Australia's west coast (Eyre Peninsula)
4. The Shorebird Recovery Program – NSW South Coast from Wollongong to the NSW/Victoria border.

4.5 Proposed University of Canberra Graduate Certificate in Vertebrate Pest Management

The proposed Graduate Diploma in Vertebrate Pest Management should commence in 2011.

It is targeted at pest management practitioners with a degree who wish to further their studies/qualifications in this specific field.

The aim of the course is to increase the capacity of those involved in planning and implementing strategic and cooperative invasive animal management.

Lead	University of Canberra
Location	Canberra
Anticipated Commencement	Semester 1, 2011
Duration	Six-month intensive (approx 3–4 contact hours per week) + a one-week residential workshop
Participants	Approximately 10-15
Delivery	1 residential workshop and online using MOODLE and SPLI (Scenario based Learning Interface) package
Course Leader	Mike Braysher Adjunct Professor, Natural Resource Management Institute for Applied Ecology, University of Canberra

Cost	Likely to be $7500
Accreditation	Graduate Certificate in Vertebrate Pest Management The course will give students credits towards the proposed Graduate Diploma in Pest Management.

4.6 Proposed University of Canberra Graduate Diploma in Pest Management

The focus of this Graduate Diploma is the management of invasive species — both vertebrate and invertebrate pest animal and pest plant.

It is targeted at pest management practitioners with a degree who wish to further their studies/qualifications in this specific field.

The target audience is not the on-ground operator, it is Australia-wide management level (from base grade to top level), particularly mid- to senior-level government bureaucrats.

The aim is to get consistent training across the country in pest management.

The international student market is also being explored. Alex Bagnara, Communications Manager, IA CRC, is undertaking a marketing course where her major project is to develop a marketing strategy for the Graduate Certificate and Graduate Diploma courses into North America.

Lead	University of Canberra
Location	Canberra
Anticipated Commencement	Semester 2, 2011
Duration	1 year (approx 3–4 contact hours per week) + 2 one-week residential workshops
Participants	Approximately 10–15
Delivery	1 residential workshop and online using MOODLE and SPLI (Scenario based Learning Interface) package
Course Leader	Mike Braysher Adjunct Professor, Natural Resource Management Institute for Applied Ecology, University of Canberra
Cost	Likely to be $15,000
Accreditation	Graduate Diploma in Pest Management

4.7 Firearm Safety and Training Council NSW Feral Animal Pest Control course

The Firearm Safety and Training Council NSW offers a full-day course on feral animal pest control. It is designed for both public and private sector firearm operators for the control of feral and pest animals on private and public land. The Firearm Safety and Training Council NSW is a Registered Training Organisation and completion of the course earns credits in the Certificate II in Conservation and Land Management (Vertebrate Pest Management). The course covers:

- firearm safety
- risk management and task planning
- humane destruction protocols
- legislation relating to the use of firearms and related OH&S issues
- shooting accreditation test for both rimfire and centrefire rifles.

The course incorporates both theoretical and practical elements of training which are designed to produce a well-rounded, balanced and safe operator.

Course participants include staff from the NSW National Parks and Wildlife Service and NSW LHPAs.

Contact: Gary Bryant, phone (02) 9486 3077.

www.firearmtraining.com.au

4.8 NSW Department of Environment, Climate Change and Water

1080 is the common name for sodium fluoroacetate, the poison used as a vertebrate pesticide in NSW and other Australian states and territories to control specific pest animals: wild dogs, foxes, feral pigs and rabbits. All 1080 pesticide products including 1080 baits are classified as 'restricted pesticides' and as such can only be used in accordance with directions given in a NSW Pesticide Control Order (PCO). 1080 pesticides include liquid concentrate products and ready-to-use bait products.

Only an Authorised Control Officer (ACO) can use 1080 liquid concentrate products. Only an ACO from a Livestock Health and Pest Authority (LHPA) or public authority can supply 1080 baits to a farmer or land manager wanting to undertake pest animal control.

There is a range of training available to suit all types of pesticide users. In most cases the training involves a two-day course, based on the CLM Training Package.

Authorised Control Officers undergo specific training and receive accreditation in the preparation and use of vertebrate poisons such as 1080. The NSW Department of Environment, Climate Change and Water (DECCW) encourages people who must be trained to seek training that is appropriate for their level of work and experience. This means people who are working as unsupervised operators/farmers should seek training at Australian Qualifications Framework Level 3 (AQF3). The minimum level of competency in pesticide use required under the Regulation is Australian Qualifications Framework Level 2 (AQF2).

Contact: Rob Hunt, phone (02) 6229 7047.

4.9 Training issues in NSW

The demand for the Vertebrate Pest Management Short Course at Orange grew to a peak of 65 in 2007, but the number of participants was capped in 2009 and 2010 to just 48, despite strong demand. There may be some people who are missing out on undertaking this course due to the cap.

The content of many courses is less hands-on than 10 years ago so that people are not getting as much experience in the field, which may lead to a knowledge vacuum in the coming years.

Like the situation in many others jurisdictions, many personnel with extensive knowledge and hands-on experience in pest animal management will be retiring in the next five years and there has probably been insufficient knowledge transfer to younger agency officers or new staff.

5 The Australian Capital Territory

The Vertebrate Pests Coordinator with ACT Parks, Conservation and Lands (PCL) (which is part of the Department of Territory and Municipal Services) coordinates and liaises with six district areas within ACT to ensure programs are coordinated at the landscape-scale and in priority areas. There are approximately 70 Parks, Conservation and Lands (PCL) agency staff involved in some way with vertebrate pest animal control in ACT.

The ACT does not have a course on pest management for Agency staff. Key staff involved in vertebrate pest management attend the NSW Vertebrate Pest Management Course at Orange.

The current Vertebrate Pests Coordinator completed the University of Canberra (UCAN) Diploma course in 2008). One other PCL staff member has done this UCAN course on a self-funded basis. One PCL staff member is currently doing this course (also self-funded).

Rabbit management

Rabbit control used to be done 'in-house' by PCL with 'on the job' training for new staff. Contractors have been used in the last three years to tackle large rabbit infestations in several reserves. There is currently a minimum qualification requirement for staff of Chemcert III for handling pre-mixed pindone and 1080 bait. Staff who prepare bait using restricted chemicals (1080 and pindone concentrate) must hold accreditation under the following training:

- NSW Vertebrate Pest Management Course at Orange
- Industry and Investment NSW 1080 accreditation
- Chemcert IV.

Field staff and contractors conducting Aluminium Phosphide fumigation of rabbits will soon be required to attend the SMARTtrain On Farm Fumigation course or a similar course. Murrumbidgee Rural Studies Centre have been approached to conduct the course for the ACT.

Fox and wild dog management

Fox and wild baiting is conducted by PCL staff. Staff handling pre-prepared and shelf stable baits require Chemcert III. Currently all 1080 meat baits are obtained from one of the local Livestock Health and Pest Authorities in neighbouring NSW, although PCL staff who have attended the NSW 1080 training course, hold Chemcert IV and have attended the NSW Vertebrate Pest Management Course at Orange are permitted to prepare 1080 meat baits if required.

PCL acts as the equivalent authority to the Livestock Health and Pest Authorities in NSW and is the only source of 1080 baits for ACT landholders. Staff holding the above three accreditations are able to issue baits and provide advice to ACT landholders.

Pig management

PCL conducts an annual pig control program in National Parks. Until 2009 the program was conducted using warfarin grain baits but the ACT has now switched to 1080 baiting using commercial, shelf stable baits. As with pre-prepared rabbit and fox baits, staff handling these baits must hold Chemcert III.

5.1 The situation in 2000

In 2000, ACT agency staff involved in vertebrate pest management were undertaking the DPI NSW Orange Vertebrate Pest Management course and may also have been involved in some 1080 training with NSW DPI.

5.2 Training issues in the ACT

The main constraints on vertebrate pest training in the ACT are lack of available courses, cost of attending interstate courses, and competition with other training priorities for staff. The cost and difficulty of obtaining enough places on the NSW Vertebrate Pest Management Course has been a particular limitation.

The ACT Environment Protection Authority (EPA) has determined minimum levels of competency for a Vertebrate Pest Control Officer and contractors undertaking vertebrate pest controls:

- completion and assessment components of the NSW DPI Vertebrate Pest Management course at Orange along with Certificate Level IV (Staff Supervision)
- completion of the training and assessment components of a Chemical Accreditation training program assessed at AQF levels III and IV and a current statement of attainment (in the previous five years) by an RTO for the level IV training competences covered by the course(s).

However, there is still a gap in practical skills, for example, PCL used a contractor who held Environmental Authorisation from ACT EPA to conduct rabbit management but the contractor lacked practical experience in fumigation or poisoned baiting. There is a definite need for practical and relevant training courses.

5.3 Proposed training course for ACT Parks, Conservation and Lands staff and potential contractors

A course was designed by the Vertebrate Pest Coordinator in the hope of addressing the need for practical training (focussing on rabbits and foxes) for ACT Parks, Conservation and Lands (PCL) staff and potential contractors. This course has never been established as the EPA preferred option was for staff to attend the NSW Vertebrate Pest Management Course.

Part A – Conducting a vertebrate pest control program

The nationally recognised unit — *Implement vertebrate pest control program* (RTE3406A) http://www.ntis.gov.au/?/trainingpackage/RTE03/unit/RTE3406A — is structured to cover all the essential information that staff or contractors would require:

- Planning an integrated pest control program
- Monitoring pests
- Implementing a vertebrate pest control program
- Safe use of vertebrate pest chemicals – handling, PPE, non-target effects, environmental effects, record keeping, MSDS, signage, disposal, legislation etc.

Note: Coverage of firearms safety would not be required as PCL staff undertake regular firearms safety training.

To make the course as relevant as possible to the vertebrate pest control that staff and contractors will be required to conduct in the ACT, the course would need to include examples to focus on rabbits and foxes and specifically cover:

<u>Rabbits</u>

- Safe use of vertebrate pest chemicals – handling, PPE, non-target effects, environmental effects, record keeping, MSDS, signage, disposal, legislation etc.
- Biology (basics that are relevant to pest control)
- Monitoring
- Use of Agmurf machine with diesel for identification of burrow entrances
- Fumigate rabbit warrens with phosphine gas tablets
- Pindone baiting (preparing bait with pindone concentrate and pre-prepared baits)
- 1080 baiting
- RHDV baiting

- Ripping rabbit warrens
- Information on the new carbon monoxide fumigator

Note: The use of 'Rid-a-rabbit' is currently banned in ACT Parks due to the number of minor accidents that have occurred with its use, the likelihood of starting fires and doubts about its effectiveness and humaneness. Therefore training in this technique would not be required.

Chloropicrin is not used in the ACT so instruction on pressure fumigation would not be required.

Foxes

- Biology (basics that are relevant to pest control)
- Monitoring
- Fumigate fox den with 'Dencofume' (CO) cartridge
- Ground baiting with 1080 baits

Vertebrate pest chemical handling

This section would be designed to complement the Chemcert Level III course since all PCL staff and contractors are required to complete Chemcert III training. This section would therefore be a recap of the main points from Chemcert III applicable to vertebrate pest control chemicals, focussing specifically on 1080, Pindone, Aluminium Phosphide and carbon monoxide (as used in Dencofume).

Risk assessment

Both contractors and staff will be expected to carry out risk assessment for vertebrate pest control programs. Pindone baiting of rabbits in a peri-urban reserve could be used as an example.

Part B – Legislation

This would be delivered by relevant ACT Government staff.

Environment Protection Officer:

- *Environment Protection Act 1997* as it applies to vertebrate pest control in the ACT
- Environmental authorisation (EA) under the above Act for commercial use of Agvet chemicals
- How to apply for EA

Animal Welfare Officer:

- Environment Protection Act 1997 as it applies to vertebrate pest control in the ACT
- Any relevant sections eg Part 6 trapping – Division 6.2 Application for a commercial trapping permit.

Vertebrate Pests Coordinator or Environment Protection Officer

- Vertebrate pest chemical permits – Australian Pesticides and Veterinary Medicines Authority (APVMA) off-label permit for FOXOFF

Part C – In-field demonstration of techniques

This would be delivered by NSW DPI or similar experts.

Techniques used (PCL to supply consumables) and Personal Protective Equipment required for:

Rabbit control

- Identification of signs of rabbit activity — active burrows, dung, scrapes, feeding lawns, dung heaps
- Use of Agmurf machine with diesel for identification of burrow entrances (if available from PCL)
- Fumigation of rabbit warrens with phosphine gas tablets
- Mixing of pindone concentrate onto bait (registered chemical – authorised staff only)
- View example of pre-prepared pindone oat bait (RABBAIT)

- Disc or bait laying machine (if available from PCL)
- View examples of rabbit bait station cages.

Fox control:

- Fox scat and fox footprint identification (from pictures or example scats if possible)
- Fumigation of a fox den with CO cartridge
- Establishment of 1080 fox bait stations (using FOXOFF baits)

Assessing landscape for the best location of bait stations.

6 Queensland

6.1 The situation in 2000

In 2000, the Queensland Department of Natural Resources and Mines (DNR&M) signed a Memorandum of Understanding to deliver Pest Animal Management Training for Local Government Officers. In 2002 the Department developed Weed and Pest Animal Management Competency Standards for Local Government Officers. Training courses commenced in early 2003.

DNR&M engaged Dalby Agricultural College and the Australian College of Tropical Agriculture (with colleges at Townsville, Burdekin and Mareeba) to deliver the Conservation and Land Management Training Package. Recognition of Prior Learning (RPL) was an important part of the training process. DNR&M developed an excellent resource titled "Vertebrate Pest Manual" released in 2005. The 173-page manual developed by John Cross provided a guide to pest animal management in Queensland. It covered the biology, ecology and impacts of vertebrate pests; Monitoring the presence of vertebrate pests; animal welfare; strategies for controlling vertebrate pests; identifying exotic pests; and exotic diseases.

6.2 Local government pest training workshop

Qld DPIF runs a three-day vertebrate pest training workshop specifically for local government and for new staff members joining.

This course was developed to address a need for trapping and 1080 bait preparation for local government officers and new Departmental staff. The practical and theory sessions were designed for feral pigs and wild dogs.

In 2009, 44 people participated in the course, which is provided at no cost to Queensland local government representatives (they only pay for their own meals and accommodation).

The course is a combination of classroom and field demonstrations.

The course is only run when a significant number of people require this training at the one time. Normally new staff would undergo training on a one-to-one basis.

Lead	Qld DPIF
Location	Eungella, Queensland (near McKay)
Commenced	2006 and again in 2009 following Queensland local government amalgamations
Duration	3 days
Participants	Local government officers
Delivery	Residential for 3 days
Course Leader	Caroline Sandral Extension Officer – Land Protection Biosecurity Queensland
Cost	No cost to Queensland local government staff
Accreditation	CLM Training Package competency units: RTD3132 – Survey Pest Animals RTD2101A – Apply animal trapping techniques RTC2706A – Apply chemicals under supervision

Course content

Topic	**Presenter and experience**
Pest Animal Monitoring	Lee Allen
New 1080 manual: Toxin 1080	Kevin Strong
1080 calibration	Garry Pidgeon
Field activities: 1. Wild dog monitoring exercise+ trap placement 2. Trapping demonstrations/techniques – Dogs	 Lee Allen Damian Byrne/ Kevin Strong

3. Feral pig trap construction and 1080 preparation + rabbit baiting + trap alerts	Bernie Shore/ Garry Pidgeon
Pig Out, Mouse Off and Doggone	Michelle Smith, Animal Control Technologies
Other chemical control and impact	Bob Parker
Too much strychnine is not a good thing!	Andrew Jones, Qld Health
Trap alert systems – how do they work	Michael Dickinson
Commercial harvesting of pest animals	Tony Pople
Animal Welfare/Ethics: • Humane destruction • Correct trap selection • Off target capture – how can we minimise? Obligations and legislation	Frank Keenan
Freshwater feral fish	Matt Moore
Latest research from Animal Control Technologies: • Papp – field trials and foxes • Hoggone – sodium nitrite bait	Michelle Smith, Animal Control Technologies
Declared pest species – deer and upcoming declared species	Frank Keenan
Rabbits – hopping mad	Michael Brennan
Conflict resolution – dealing with difficult landholders and clients	Rob Nielsen
Results of 1080	Rob Nielsen
Red eared slider turtles	Corey Bell
Open forum New ideas Suggestions How can we work more effectively?	Rob Nielsen

6.3 Pest animal symposium

The Queensland Pest Animal Symposium is held every two years. In 2010, this symposium will be held in Gladstone and 150–250 delegates are anticipated to attend from across Queensland and from a range of agencies and organisations involved with pest management.

The 2010 theme is “Managing pest animal impacts – prevention, containment and monitoring”.

Symposium presenters include researchers from the Vertebrate Pest Research Centre, Robert Wicks Centre along with Regional Biosecurity Officers. It also involves baiting station training by DPI staff.

Participants include NRM students and Biosecurity Officers.

Frank Keenan is Chair of the Organising Committee.

More information is available at www.pestanimalsymposium.com.au

6.4 Proposed online Vertebrate Pest Management course

In Queensland, the four Agriculture Colleges merged 12 months ago with the Department of Primary Industries and Fisheries (now the Department of Employment, Economic Development and Innovation, or Qld DEEDI).

John Cross, Senior Biosecurity Officer with Biosecurity Queensland, is currently liaising with Dalby and other Agricultural Colleges to develop a course that covers the theory of pest animal management control in an online format and then the course is completed under supervision by a mentor or accredited trainer. This would allow students to concurrently work and study online and then have the benefit of an experienced practitioner to oversee a hands-on field project. This course is only in the preliminary stages of development.

6.4 Training issues in Queensland

Not identified in Queensland.

7 South Australia

7.1 The situation in 2000

The University of Adelaide offers the only course on pest management in South Australia. The University's Ecology and Management of Vertebrate Pests Training School (details below) has been running since the mid-1980s. Phil Stott has coordinated the course for many years.

7.2 Ecology and management of vertebrate pests training school

The University of Adelaide's Ecology and Management of Vertebrate Pests Training School course is the longest running course in Australia, set up by the Vertebrate Pest Control Authority in the 1970s and later run by the Animal and Plant Control Commission until it became a University of Adelaide course in the 1980s.

While the course covers the various vertebrate pests found in south-eastern Australia (wild dogs, foxes, pigs, goats, cats, starlings, mice and others) it concentrates on rabbits.

Training participants include university students who take the course as a subject in animal science, natural resource management or agriculture programs. Other participants are state or local government officers, national park rangers, foresters, water catchment managers or private consultants and contractors. An average of four Victorian government officers participate each year. The course is rated highly by participants because of the mix of presenters with both academic and practical experience in vertebrate pest management.

Assessment can be arranged if the participants and their employers request. Participants who wish to work towards qualification as an Authorised Officer under South Australian legislation will be assessed.

Lead	University of Adelaide
Location	First week at the Roseworthy Campus of the University. Second week comprises mainly field demonstrations held in the Coorong region.
Commenced	1970s (initiated by the then Vertebrate Pest Control Authority)
Duration	2 weeks
Participants	31 students in 2010 (capped at 36)
Delivery	Residential and Field Work
Course Leader	Phil Stott, University of Adelaide, Ph: (08) 83037838
Cost	The tuition fee is $1000 Additional assessment and certification fee is $170. Accommodation for week one at Roseworthy is approximately $220. Accommodation for week two is $340.
Funding source	The University heavily subsidises this course. The fee for non-University students is $2800 to sit the course without assessment. NRM Boards have remarked that they would be unlikely to send staff if they had to pay the full cost. Full cost recovery per participant is considered to be $2800.
Accreditation	On completion participants are accredited to use 1080.

Course participants

- staff from NRM Boards (16)
- Bachelor of Science students from the University of Adelaide (studying Vertebrate Pest Management as an elective)
- National Parks and Wildlife Service staff
- private contractors
- other external participants, including three Victorian DPI staff in 2010.

Enquiries for enrolment for 2011 indicate about 75 per cent are from NRM Boards and 25 per cent are private contractors.

Course content

Week one:

Topic	Presenter
Strategic Management of Vertebrate Pests	Mark Williams
Legislation	Mark Williams
Lagomorph taxonomy; rabbit history	Phil Stott
Rabbits – Biology and Behaviour	Phil Stott
Rabbits – Population Ecology	Phil Stott
Rabbits – Damage	Phil Stott
Rabbits – Diseases and Immunity	Phil Stott
Foxes – biology and behaviour	Phil Stott
Rabbits – physical and chemical control	Vicki Linton
Rabbit control – economics and planning	Vicki Linton
Fox control	Vicki Linton
Hares – Biology	Phil Stott
Field exercise – assessing a rabbit problem	Mark Williams
	Phil Stott
	Vicki Linton
	Keith Cowley
Feral pigs – biology and management	Steve Lapidge (IA CRC Adelaide)
Off-target risks in pest control	Dave Peacock (DWLBC)
	Usually Ron Sinclair (retired)
Birds – biology, damage and control	Dave Peacock
Goats – biology, damage, management	Robert Henzel (retired)
Implications of climate change	Robert Henzel

Week two:

Integrated rabbit control at the local level (trailing, ripping, explosives demonstration, mixing 1080 poison, role of local officers, fumigation)	Ian Qualman
	Robin Hood
	Keith Cowley
Feral dogs	Phil Stott
Fox control – Practical Exercise	Vicki Linton
	Peter Bird
	Dave Peacock
RCD update – Inspection of exclosures – Coorong NP (site set up by Brian Cooke)	Greg Woodsy
Rats – biology and control	Phil Stott
Herbivore research – Coorong NP	Greg Mutze
Dingoes – biology, damage, and management	Peter Bird
Mice – biology, damage, and management	Greg Mutze
Camels	Phil Stott
Check fox baits	
Feral deer – biology, damage and management	Dave Peacock

Feral Cats – biology and management	Phil Stott
Reptiles, cane toad	Phil Stott
Exotic disease risk	Phil Stott
Squirrels	Phil Stott
Global perspectives and risk assessment	Phil Stott
Characteristics of invasive species	Phil Stott
Invasiveness, invasibility and risk assessment	Phil Stott

Experience of SA Vertebrate Pest Management short course presenters

Presenter	Title	Skills and Experience (years)			
		1–10	11–20	21–30	30+
Mark Williams				■	
Phil Stott					■
Vicki Linton					■
Keith Cowley					■
Robert Henzel (retired)					■
Dave Peacock			■		
Ron Sinclair (retired)					■
Steve Lapidge		■			
Greg Mutze				■	
Peter Bird					■
Greg Woodsy				■	
Robin Hood				■	
Ian Qualman					■

7.3 Bachelor of Science (Natural Resources) – University of Adelaide

Previously the University of Adelaide offered a Bachelor of Natural Resource Management which included a core subject on vertebrate pest management.

Now it is known as the Bachelor of Science (Natural Resources) and there is very limited education on pest management. *Vertebrate Pest Management* is no longer a mandatory subject.

The number of students in this degree has been falling in recent years, with low intakes threatening long-term viability.

7.4 SA TAFE Diploma of Conservation and Land Management

In South Australia the Conservation and Land Management Training Package can be studied at TAFE campuses in the Riverland, Port Augusta, Kadina, Mount Gambier, Port Lincoln, Urrbrae and Roseworthy.

7.5 Roseworthy – Vertebrate pest technical course

Pat Wake has been teaching at the Roseworthy campus for 10 years. Pat is the State Coordinator for the SA TAFE Vertebrate Pest Technical Course — a one-week course run on behalf of the SA Department of Health.

Department of Primary Industries and Resources of South Australia (PIRSA) staff and contractors must complete the course before they can purchase 1080 from NRM Boards and work as contractors for Local Government, for example. NRM Board staff must also complete the course before they can supply the 1080.

Thirty participants did one of two courses in 2009. Eleven people are enrolled for the course in September 2010.

Pat Wake works with two other experienced practitioners to deliver the one-week course. One is a specialist contractor (trapping, body traps, encouragements, techniques to get animals to come to 1080). The other is a specialist in fumigation and the safe handling of 1080.

7.6 Roseworthy – Conservation and Land Management Package

Pat Wake also teaches the Certificate III, Certificate IV and the Diploma of Conservation and Land Management courses. Vertebrate pest management is covered in these courses.

Roseworthy is a rural campus and the student numbers in the CLM courses are smaller than at Urrbrae. The 2010 Certificate III course has 25 part-time and 10 full-time students. There are 15 part-time students doing the Certificate IV or Diploma course in 2010.

Roseworthy offers a mixed certificate course with options including CLM/Horticulture, OHS Industry priorities and revegetation. Not all streams cover vertebrate pests.

Certificate III students cover the units *Survey Pest Animals* and *Understand Vertebrate Pests*. Fieldwork is conducted at both a heritage site (Calperum Station) and a private site. Survey information is passed back to the property owner.

Certificate IV and Diploma level students write a management plan for vertebrate pests.

7.7 Urrbrae – Conservation and Land Management Package

This course has been taught by Nick Crouch at Urrbrae TAFE campus for the past five years.

The Certificate III course largely covers weeds, in response to industry demand. (Industry includes Forestry SA and the National Parks Service).

Usually 8–12 students are enrolled in the Diploma course. 90 per cent of the 2010 students enrolled in CLM are doing the Diploma level unit *Develop a Strategy for Managing a Pest Species*. (Half of this unit is spent on weeds and half on vertebrate pests. Fifty nominal contact hours are spent on vertebrate pest management.) Approximately 30 students enrol in the Certificate III course, and approximately one-third go on to do the Diploma course.

7.8 Training by Rural Solutions SA

Rural Solutions SA delivers a range of pest animal training courses for government agency and NRM Board staff. Rural Solutions SA is fee for service consultancy business and a Registered Training Organisation. It was originally part of the PIRSA (formerly Department of Agriculture), and was formed as a private business in 1998.

This consultancy business has a mix of expertise in a wide range of disciplines associated with the environment and natural resources management including a dedicated Pest Animal Team with four accredited, qualified trainers plus five other staff who are involved with training depending on the client's requirements.

In particular, Rural Solutions SA delivers 1080 training and accreditation.

Rural Solutions' Pest Animal Team is primarily involved with strategic planning and management, and provides both accredited and non-accredited training. Services can be either site specific or pest specific. Clients include Indigenous land managers. The Pest Animal Team is a regular point of contact for agencies seeking specialist advice, for example, on surveying of feral animals.

University graduates who start working in the pest animal management field often come to Rural Solutions for more specific knowledge and training not covered by their undergraduate degrees.

Typically, Rural Solutions SA is involved with two to four training courses per year in pest animals. These may vary in duration, topic and location.

7.9 National CLM Training Providers Network

Pat Wake from SA TAFE also chairs the National CLM Training Providers Network. The Network had significant input to the recent revision of the training package and made sure Certificate I and III units including *Identifying Animals* were not taken out. The National CLM Training Providers' Network annual conference holds annual conferences. This is an opportunity to communicate vertebrate pest management training opportunities to an important network.

7.10 Training issues in SA

Currently, the University of Adelaide subsidises the Ecology and Management of Vertebrate Pests training course at Roseworthy. Government agencies would be unlikely to send staff to this training course if they had to pay the full cost of $2800. This may become an unsustainable situation if the University determines it cannot continue to subsidise non-University students.

8 Western Australia

8.1 The situation in 2000

In 1996, the Western Australian Department of Agriculture and Food (DAFWA) assumed the service responsibilities of the Agriculture Protection Board and ceased to provide Certificate III in Agriculture training to staff and this has not been replaced with any other AQF training.

The number of Biosecurity Officers has decreased over the past 10 years. Currently there are about 50 full-time or equivalent (FTE) staff members statewide.

Over the past decade the Department has gradually withdrawn from active, on-ground pest animal control programs. The emphasis is now on educating and supporting landholders and land managers to undertake control as is required under WA legislation. Biosecurity Officers have a facilitation and coordination role in landholder education and training regarding use of baits and chemical substances.

9.2 WA Department of Agriculture and Food

The WA Department of Agriculture and Food (encompassing Biosecurity) provides in-house training to agency staff, but this is mainly only conducted when new staff are inducted and focuses on legislative responsibilities in relation to pest plant and pest animal management. Training is provided for the authorised use of firearms, 1080 and strychnine — both theoretical and practical — to ensure Biosecurity Officers are fully aware of their responsibilities and competent in the use of these control methods.

Biosecurity Officers currently have access to the Declared Animal Control Handbook (APB, 1990) and various Farmnotes / Pestnotes as reference guides to assist with information regarding declared animal control. The Farmnotes and Pestnotes are developed and maintained by Vertebrate Pest Research Services in conjunction with suitably experienced field staff.

DAFWA's Operational Procedures for Declared Animal Management are awaiting final approval before publication in the Invasive Species Operations Manual. The procedures describe the processes that may be followed by landholders to undertake control activities, and are documented by Biosecurity Training and Operational Standards in consultation with operational staff and Vertebrate Pest Research Services.

There is currently no requirement for WA Biosecurity Officers to have a relevant degree qualification. Experience or qualifications are desirable but not a requirement.

In WA local government is considered a land manager and has responsibilities for pest animal management control like other landholders and managers. Local government Environment Officers are only responsible for managing local government land and not for education or enforcement.

DAFWA Biosecurity runs two Landholder Training Packages (LHTP) with associated disclaimer/copyright. These packages are designed for DAFWA Biosecurity staff to conduct landholder training for private 1080/Strychnine on a one-to-one basis. Importantly, this means that training is standardised throughout the state — both for pastoral and agricultural regions.

DAFWA maintains statewide database records of the training completed by landholders which are accessible to all authorised staff. The database allows staff other than the local Biosecurity staff member to check details/currency and process applications for poison products, in the local staff member's absence. This has been a major issue in the past, as records of authorisation were kept in local offices and if the local biosecurity officer was away the landholder application for poison products couldn't be processed. The database has alleviated this problem to some extent. The database covers:

1. landholder details (name, property ID, contacts etc)
2. type of training authorisation eg 1080 or Strychnine or both (Strychnine limited to some shires in agricultural areas, available in all shires in pastoral regions)
3. currency of training

4. comments/restrictions
5. authorised DAFWA training officer

Frequency and Format

Individual landholder training is provided when approval to use restricted chemical products is sought by a landholder with no previous training and experience. To support the development of skills in the use of restricted products in areas where the need to bait is a recent development (ie for wild dogs in the Northern Agricultural region), DAFWA will provide practical one-day workshops to demonstrate the necessary skills to landholders. These are hosted by the relevant Biosecurity Officer, with support from Biosecurity Training as required.

9.3 WA Certificate II Conservation and Land Management for professional doggers

Until mid 2010, DAFWA provided a Certificate II for professional Doggers. As the staff in question are no longer with the agency, the qualification is now offered by VET providers (i.e. TAFE) in regional areas.

Experience of Biosecurity Training and Operational Standarsd staff

The Biosecurity Training project has four FTEs engaged in development and delivery of internal training and operational standards for regulatory activities, including the use of restricted chemical products.

Presenter	Title	Skills and Experience (years)			
		1–10	11–20	21–30	30+
Anita Wintje	Manager	■			
David Lund	Senior Biosecurity Officer			■	
Lyn Cameron	Project Officer	■			
Mandy Dearden	Project Officer	■			

Experience of Biosecurity Training and Operational Standarsd staff

The DAFWA Vertebrate Pest Research Section comprises three research scientists and seven technical officers.

Presenter	Title	Skills and Experience (years)			
		1–10	11–20	21–30	30+
Dr Andrew Woolnough	Research Scientist and Section Manager		■		
Susan Campbell	Research Scientist	■			
Ken Rose	Technical Officer			■	
Gary Martin	Technical Officer		■		
Win Kirkpatrick	Technical Officer			■	
Gary Gray	Technical Officer			■	
Amanda Page	Technical Officer	■			

9.4 WA Department of Environment and Conservation

The WA Department of Environment and Conservation (DEC) runs 1080 courses for staff who are required to have the authority to use and possess 1080. It is a Department of Health approved course that is based on the WA Code of Practice finalised in April 2009. This Code specifies that staff must to do a refresher course every three years. The introduction/induction course duration for new staff is 1.5 days and the refresher course is a half-day course.

DEC's main vertebrate pest animal management focus is the statewide Western Shield nature conservation program that commenced in 1996 and is working to bring at least 13 native animal species back from the brink of extinction by controlling introduced predators — foxes and feral cats. The Western Shield Program is the largest wildlife conservation program in Australia and covers 3.9 million hectares — 3.6 million hectares targeting fox control and 0.3 million targeting feral cats.

Relevant DEC staff also undertake firearms training to national competency levels in order to conduct aerial shooting.

9.5 Training issues in WA

Some WA Department of Agriculture staff went on the pilot training program run in South Australia by the University of Adelaide, but subsequently staff have not been sent from WA to this course. Staff find the amount of travel and time commitment required for interstate courses is generally prohibitive.

Western Australia, like other states, is facing the issue of considerable knowledge leaving the Department as many experienced biosecurity officers near retirement. The Department has tried to review and document procedures in order to manage this risk.

Currently the WA Government is undergoing a reform program that will see government departments restructure and refocus their activities, which will inevitably have a major effect on the way biosecurity services operate.

9 Victoria

9.1 The situation in 2000

There has been limited engagement in specific training in vertebrate pest management for agency staff in Victoria for the past 15–20 years.

A number of Victorian DPI staff members have done the University of Adelaide short course over the past 15 years. On their return each staff member provides a short report/presentation to colleagues covering course material and its relevance, field exercises and their relevance, etc.

The focus has primarily been on mentoring for new staff, but this has been done in an ad hoc way with no formal or strategic mentoring program. There is now an acknowledgement that this approach is insufficient and there is a major gap in this area. DPI Victoria is developing a Certificate III or IV in Pest Management — see below — to address this gap.

9.2 Vermin control course

Northern Metropolitan Institute of TAFE (NMIT) offers a Vermin Control Course run by ex-DPI staff member Tim Bloomfield. This course is designed for Pest Control Operators who require a Vermin Control Licence to use toxic control substances. This course covers four national competencies and its main focus is rabbit and fox control. Participants are primarily pest controllers or local government officers. Some staff members from Parks Victoria have also done the course as well as staff from the Tasmanian and NSW Parks and Wildlife Services.

9.3 Training issues in Victoria

Victoria currently has no specific course on vertebrate pest management for staff involved in pest management.

Historically, predecessors of Biosecurity Victoria Invasive Plant and Animals Operations Branch (BV IPAOB) trained through an Advanced Certificate of Applied Science course that housed units in both pest plant and animal management. Prior to the commercialisation of 1080 bait management in Victoria, staff involved in bait management and supply were required to complete a departmental course, *Preparation and Use of Vertebrate Pesticides*, incorporating a 1080 Quality Management system.

The entry level to BV IPAOB field staff and authorised officers is an appropriate degree in agricultural science, science, natural resource management or an equivalent qualification.

DPI Victoria traditionally employed staff with sound agricultural and communication backgrounds; now with the shift to a strongly science and compliance-based organisation, new employees must hold a minimum entry-level degree qualification. Even so, some recruits may not have covered pest animal management in their chosen subjects.

BV IPAOB is experiencing generational change and gaps in organisational capacity, so a course targeting the identified gaps is being developed.

Proposed certificate III or IV in pest management

DPI Victoria intends to develop its workforce to become technical specialists in vertebrate pest management.

However, DPI Victoria is experiencing the same widening gap in technical knowledge and specialist competency as older, more experienced staff leave the department.

Victoria is currently developing a new training course targeted at specialist technical skills to bridge this ever-evolving skills gap. The course will be shaped from units of the Certificate III or IV level from Conservation and Land Management Training Package, and will consist of both theory and practical sessions. It will be delivered by AgTrain, a Biosecurity Victoria Business Unit and Registered Training Organisation.

Another aim is to build capacity and expertise within the Department to maintain the governance, content and future direction of the course. DPI will establish a training team to deliver the course and conduct the necessary workplace assessments.

Like many other agencies, BV IPAOB is experiencing an increased turnover in staff, particularly over the past eight years. There is an immediate need to train and increase staff capability. The majority of recruits understand the science, rationale and investment principles of vertebrate pest management in Victoria, but what is diminishing is the practical and technical knowledge — for example, what is best practice rabbit control and how is it implemented, how to manage and lay baits, etc.

It is imperative in an extension, compliance and science-based environment that staff are able to clearly and concisely articulate the expectations of the program to land managers.

The training budget is an inbuilt component of each state-wide vertebrate pest control program. The proposed training course, once accredited, will also extend training opportunities to Department of Sustainability and Environment and Parks Victoria staff.

Biosecurity Victoria recognised the need for this new course around two years ago when experienced vertebrate pest managers took on roles as project and program managers, retired or changed employment.

BV IPAOB has identified training resources, sites and staff to be involved in the training package development. New Codes of Practice and Standard Operating Procedures for the management of vertebrate pests in Victoria, as well as appropriate science and best practice, will assist BV IPAOB context and shape the development of the course.

Extension programs are based on providing the most accurate and technically sound advice available in accordance with best practice. The new course will establish shared and consistent understanding across DPI Victoria's field services programs.

Staff can be challenged on technical expertise during legal challenges and court appearances. It is imperative that staff expertise, policy and actions can be defended.

The course is most likely to be run over one week with around 10 to 15 participants. The course will be advocated and supported by the BV IPAOB Staff Performance Management Scheme.

Trainers/technical specialists will be involved as course developers and presenters. These people may include:

- Brian Cooke, formerly of CSIRO, and current rabbit control researcher
- Steve McPhee, subject matter expert, rabbit control researcher
- John Matthews, project leader Established Invasive Animals, 1080 Trainer, and
- a number of BV IPAOB subject matter and adult education experts.

The expected core competencies to be attained are:

- understand biology and ecology of a range of vertebrate pest animals
- understand and demonstrate a range of vertebrate pest animal monitoring and control techniques according to best practice
- assess, record and analyse vertebrate pest animal populations
- understand the legislative environment and framework regarding the management of vertebrate pests in Victoria
- sound working knowledge of Codes of Practice and Standard Operating Procedures for pest management on public land in Victoria
- conduct spotlight monitoring transects
- methodology and practical exercises – ripping, fumigation, managing and laying baits
- Implement and administer a 1080 baiting program consistent with the directions for use of 1080 vertebrate pest animal bait products in Victoria ie, *Understanding modes of action – 1080*.

The units of competencies have been mapped to the CLM Training Package:

- RTD3132A Surveying pest animals
- RTE34068 Implementing vertebrate pest control

- VBQU736 Minimising the Risks in the Use of 1080 Pest Animal Bait in Victoria.

In addition to this course some specialist roles may require staff to complete the DPI nationally accredited firearms training program which consists of the units:

- RTD2125A Use firearms to humanely destroy animals
- SROFAS00A Demonstrate knowledge of firearms legislation, firearms and community safety
- SROFA002A demonstrate use of Category A and B firearms safely
- SROFA003A Demonstrate use of Category C firearms safely.

10 Tasmania

Information regarding pest animal management training for Tasmanian agency staff was unavailable.

11 Northern Territory

11.1 The situation in 2000

Information was not provided by interviewees in the Northern Territory.

11.2 1080 training course

Landholders wishing to conduct a 1080 baiting program on their property must obtain an approval from the Chemical Services section of the Department of Resources, plus a Permit to Take Protected Wildlife from the Department of Natural Resources, Environment, The Arts and Sport (NRETAS).

The training needed to undertake 1080 baiting in the NT involves a ChemCert Certificate Level 3 or SmartTrain Chemical Application Course (AQF3) through an accredited training provider, and completion of the 1080 training program through an accredited training provider (RTE3406A: Implement a Vertebrate Pest Control Program).

Danie Luttig, Acting Team Leader, Agriculture and Rural Operations Team, and SMARTtrain Trainer and Assessor, at Charles Darwin University (CDU), runs a half-day 1080 Training Qualification course at the CDU Katherine Rural Campus.

The course only requires a half-day because it must be preceded by completion of the two-day SMARTtrain Chemical User course.

The course is based on the unit of competency RTE3406A — *Implement a vertebrate pest management program* — and covers laying baits, signs of poisoning, transport and storage etc.

Although the course is still developing, a pilot course was run in December 2008 with the first official course run in January 2009. In 2009 approximately 200 participants completed one of 15 courses with an average of 10–15 participants per course.

A maximum of approximately 20 participants are involved when the course is being run specifically for cattle companies. Most participants are farmers, although a number of Indigenous land managers also do the course.

The approximate course cost is $80 for the half day. Administration of the 1080 permit system is extremely complex and there are additional costs for individual authorisation numbers, permits etc.

The course is advertised on government websites, by NPWS staff, and through the Cattlecare program. Participants contact the CDU, Katherine office.

The SmartTrain course costs approximately $240. As a Certificate III level course it requires good reading and writing skills.

Prior to 1 September 2009 NRETAS carried out fresh meat 1080 pest animal baiting at no cost to landholders. NRETAS now charges for this service.

11.3 Certificate IV Conservation and Land Management, Charles Darwin University

This course helps to develop competencies required by a wide range of sectors within the conservation and land management industry, including natural area restoration, weed management, vertebrate pest management, conservation earthworks, lands, parks and wildlife, community coordination and facilitation and Indigenous land management.

The course includes 100 nominal hours of study for the core unit of competency RTD4402A Define the pest problem in a local area. It also includes two elective units of competency RTD4403A Develop a pest management action plan within a local area and RTD4404A Develop monitoring procedures for the local pest management strategy. Each of these two units require 100 nominal hours of study. There is a total of 950 nominal hours required for the qualification.

11.4 Diploma of Conservation and Land Management, Charles Darwin University

The Diploma caters to staff in the same sectors as the Certificate IV course. It includes 200 nominal hours of study for the core unit of competency RTC5504A *Develop a management plan for a designated area*. A total of 1290 nominal hours is required for the qualification.

11.5 Training issues in NT

Information was not provided by interviewees in the Northern Territory.

12 National wild dog management

A strategic approach to wild dog management is currently promoted across Australia by government agencies and enunciated in management strategies. The focus is on proactive planning to prevent future stock losses rather than reacting to immediate stock attacks. The planning process needs to ignore property boundaries so that management focuses on wild dog ecology, impacts and the environment (ie, nil tenure) within a local area. Success requires cooperation amongst groups of landholders and other stakeholders who often have varying objectives, capabilities and resources. While state and local governments have brought many groups of stakeholders together, some are incomplete or fail to reach agreement on key issues, resulting in a breakdown of the planning process.

In response to a growing need for the coordinated and strategic management of wild dogs (including dingoes) the IA CRC project *Facilitating Strategic Management of Wild Dogs throughout Australia* was developed.

A National Wild Dog Facilitator, Greg Mifsud, was appointed in 2009 to raise the profile of wild dog management, highlight priority areas for management and research, create communication networks amongst managers and researchers across states and to promote the development of strategic and coordinated wild dog management programs. The emphasis of the project is on the broad implementation of strategic management of wild dogs, rather than addressing particular research questions.

Operating in a similar fashion to coordinators of Weeds of National Significance, the National Wild Dog Facilitator operates between state and local government agencies, landholder groups and non-government organisations to broker agreement between these parties to implement wild dog management programs. At a local level the facilitator provides support and complements the skills of regional coordinators and local pest control authorities as management plans are developed and implemented. To this end the facilitator can also operate between local management groups, shires and the states to develop wild dog management programs consistent with guidelines which have been developed but are yet to be implemented nationally.

Greg's responsibilities include:

- raising the profile of wild dog management across the country
- highlighting the importance of integrated and strategic management of wild dogs on a regional and local scale
- documenting a series of successful and unsuccessful case studies for wild dog management
- highlighting priority areas for management, research and dingo conservation
- promoting the development of communication networks between wild dog management groups, managers and researchers within and across states
- identifying current training programs for the control of vertebrate pests including wild dogs
- promoting the development of a nationally-accredited training scheme which provides a standardised approach to vertebrate pest control across the country.

Progress

Greg has met with industry groups in Queensland as well as attending various wild dog advisory group and local government meetings throughout Queensland and interstate.

The first integrated wild dog management plan using the nil-tenure approach was the Brindabella-Wee Jasper Cooperative Wild Dog/Fox Management Plan. Greg will be using this as a model for developing similar plans in Queensland.

Greg Mifsud, National Wild Dog Facilitator
Queensland Department Primary Industries and Fisheries
PO Box 102 Toowoomba Qld 4350

Phone (07) 4688 1333
Email greg.mifsud@dpi.qld.gov.au

The National Wild Dog Working Group approached the Vertebrate Pest Committee in 2008 regarding national competencies for wild dog management. This was referred to the VPC Training Working Group. This initiative has not been progressed at this stage.

State	Course status	Contact
Vic	No accredited training in wild dog management	
Qld	No accredited training in wild dog management	
NSW	Cert III introductory course	Ken Ryall
	Cert IV accredited course with Recognised Prior Learning (RPL)	Peter Fleming
WA	Cert II and Cert III accredited course	Geoff Thomas
SA	No accredited training in wild dog management	
Tas	No wild dogs	

Professional doggers need a basic skill set, along with other bush craft skills, to catch young naïve dogs. Doggers need the next level skill set to catch the older, wiser dogs.

A dogger should not just be a trapper. Reactive trapping where dogs are known to have been will not effectively reduce the negative impacts of wild dogs.

The required skill set includes:

- laying traps
- maintaining traps
- using scents to trap dogs
- use of GPS with dataloggers (and easy to use buttons eg 1: trap set 2: dog shot 3: bait laid etc)
- managing data sheets and downloading datalogger information
- firearm competency
- humane destruction of animals.

There are different requirements for trap types in each jurisdiction. There is a definite need for state and territory consistency on traps.

effectiveness is a reduction in the number of stock being killed rather than the number of dead dogs (ie, reporting on outcomes of the program).

Other National Initiatives

A dingo destruction audit is currently under way, as well as a general biosecurity audit.

12.1 Invasive Animals CRC wild dog demonstration site (Qld)

The IA CRC has set up wild dog demonstration sites to demonstrate strategic integrated control in wild dog affected areas. The strategic approach involves defining and quantifying the regional wild dog problem, identifying all stakeholders and working out the management, research, demonstration, training and education requirements.

12.2 Traineeships

NSW DPI offered traineeships for three wild dog controllers in 2000–2002. These trainees spent time in the USA with US Department of Agriculture coyote control officers looking at various control techniques employed for coyote management. These skills were then applied to

controlling wild dogs in Southern NSW by the NSW National Parks and Wildlife Service and the Livestock Health and Pest Authority.

The three trainees to graduate from that program and their current positions are:

- Scott Guthrie, NSW NPWS (Bombala)
- Mick Davis, South Coast LHPA
- Andrew McDougall, Private contractor ACT

It is understood that all three have attained the Certificate IV course through Tocal where their prior learning was acknowledge and certified.

12.3 AgForce Queensland

The Queensland farmers' organisation, AgForce, received funding under the Queensland State Government's Blueprint for the Bush 'Pest Offensive' to conduct a three-year wild dog management project focussed on regionalised incentives for coordinated dog control. This education and awareness program is aimed at encouraging a coordinated approach to wild dog mitigation throughout the grazing industries.

A series of field days — attracting more than 700 landholders — at Isisford, Blackall, Hughenden, Quilpie, Charleville, Morven, Gympie, Warwick, Emerald, Ravenshoe and Cunnamulla showcased alternative methods as well as baiting and trapping to demonstrate how every landholder can participate in the coordinated control of wild dogs.

AgForce has developed a four-day training package for eight landholders already involved in wild dog management at Board or other level.

AgForce commissioned an Economic Impact study in to the effects of wild dogs which found that dogs impact cattle as well as sheep.

12.4 Murweh Shire, Qld

Murweh Shire in Western Queensland has a nil tenure approach to wild dog management and uses GPS and dataloggers. The council has subdivided the community based on groups similar to the old 'dog syndicates'. It has funding of $200,000 over three years which is subsidising trappers.

Currently, there is community objection to the use of 1080. There are a number of livestock producers who do not recognise that wild dogs have a negative impact on cattle as well as sheep — they actually moved away from sheep production into cattle in the belief that their cattle would be safe from wild dog predation. This was preventing effective broad-scale management so the project offered a trapping subsidy to get landholders involved in the program. Many took part in baiting program when they realised how much it was worth to them.

There are a few very experienced trappers in the area and the younger trappers are getting some good experience by being involved in the project and working alongside these experienced practitioners.

12.5 NSW National Parks and Wildlife Service

Stuart Boyd-Law, Pest Management Officer for NSW National Parks and Wildlife Service (NPWS) currently runs one or two training courses a year for up to dozen livestock producers and NPWS staff. Run over two days, these courses provide landholders with the basic information on two trap types and their maintenance, tuning and setting, as well as the knowledge about wild dog ecology and behaviour needed to improve catch rates and basic animal welfare requirements under NSW legislation.

Stuart is keen to see the information provided in this course developed into a stand-alone wild dog control specific training course or subject at the tertiary level.

12.6 Western Australia

The WA State Government Pastoral Lease levy funds a wild dog management operations manager in that state (Geoff Thomas DAFWA). Geoff says there is an increasing demand for trappers. He runs a Certificate III Rural Operations course designed for industry people with no

experience. This course started in 2004 following a state wild dog review. The course has been marketed interstate and it runs as needed.

The course is run through Durack Institute of Technology (formerly Central West TAFE). So far 23 people without any experience as doggers have been trained and about the same number with experience in order to meet the Department of Health's licensing requirements.

A further 30 licensed people have been trained as pest control operators, allowing them restricted use of 1080 and strychnine. The 2005 Poison Regulations requires all persons (doggers) to be licensed by the WA Department of Health.

The three units of competency are:

- Modify environment to manage pests
- Prepare and apply chemicals
- Transport handle and store chemicals

The WA Minister for Agriculture recently announced four-year funding for doggers who will be employed by Regional Biosecurity Groups to work with community groups. These groups will decide on the employment arrangement and the wild dog control strategy with their coordinator. Doggers will probably be employed on a one or two-year basis.

Doggers will be paid $450/day, but will supply their own vehicle and equipment. They will use GPS and dataloggers and be expected to download the data and manage the information.

WA has also put together an information pack on the use of strychnine and 1080.

12.7 Victoria

The Victorian Department of Primary Industries (Vic DPI) has 24 staff involved in wild dog control.

Victoria also has a number of private vertebrate animal controllers. Vic DPI requires these private controllers to go through a skills competency recognition process.

Contact Vaughan Kingston (03) 5155 8121 M 0427 554 219

Frank Gigliotti, Vic DPI, oversees wild animal controllers.

12.8 Private operators

There are a number of private operators who run training in feral animal trapping and sell traps. Although there is no qualification attached to such training.

Western Trapping Supplies, Toowoomba Qld

Western Trapping Supplies (WTS) aims to make the control of feral animals and trapping in Australia more humane and more affordable. WTS wants to see more Australians capable of successful wild dog trapping, fox trapping, feral cat trapping, and rabbit trapping. Western Trapping Supplies sells a large selection of books and training DVDs covering the subject of wild dog trapping.

Contact: Damian at WTS, phone (07) 4635 1828
Email damian@trapping.com.au
www.trapping.com.au

Inglewood trapping workshop, Qld

Andrew Granzotto, a professional trapper in the Inglewood area in Queensland, runs a wild dog trapping workshop. Andrew completed the one-week course on Vertebrate Pest Management run at Orange by I&I NSW. This workshop covers decoys and lures, trap cleanliness and preparation, setting traps and trap locations.

Contact: Andrew Granzotto
Mobile 0407 670 194
Email: zotto72@bigpond.com

12.9 Issues

The Murweh Wild Dog Management plan highlighted the overall lack of experienced trappers across Queensland.

Some of the doggers employed by NSW LHPAs don't have accreditation and are not experienced or trained in managing data sheets

13 Codes of Practice and Standard Operating Procedures

The new national Codes of Practice and Standard Operating Procedures for the humane control of feral animals , developed through an extensive public consultative process, have been presented to the VPC for finalisation for national adoption by Australian states and territories.

Future training in vertebrate pest management could build the COPs and SOPs into mandatory course content.

For more information see: http://www.daff.gov.au/animal-plant-health/welfare/model_code_of_practice_for_the_welfare_of_animals

14 Invasive Animals CRC NRM liaison project

The IA CRC NRM Liaison Project now has a national focus.

Jessica Gibson is the Natural Resource Management (NRM) Liaison Officer. Initially, her role was to assist the IA CRC and NSW DPI to implement best practice invasive animal control through strategic planning and knowledge transfer to Australia's 56 NRM regions.

The NRM Liaison Officer activities include:

- being the initial point of contact for brokering information between NSW DPI, the IA CRC and the NRM regions
- assisting with implementing best practice invasive animal control through strategic planning and knowledge transfer
- investigating the potential for collaborative research, placement of post-graduate students and demonstration sites within NRMs
- developing information packages appropriate to NRM needs
- assisting with and advise on relevant training opportunities
- assisting with negotiation of agreements between the IA CRC programs and NRM regions for joint studies and control programs
- facilitating the roll-out of IA CRC products where they can assist NRMs to more effectively manage their invasive animals.

By late November 2008 the NRM Liaison Project had assumed a national focus. The NRM Liaison Project and Facilitator assisted NRM organisations across Australia to plan and develop pest animal management project proposals for the Commonwealth Government's Caring for our Country 2009/10 funding round.

IA CRC NRM Liaison Officer Jessica Marsh (nee Gibson)
Email jessica.gibson@dpi.nsw.gov.au

14.1 Building future capacity – the role of schools' education

A number of interviewees in this project commented on the poor science education at both primary and secondary school levels. In response to this issue the IA CRC created 'Feral Focus' and 'PestTales' — teaching resources aimed at both secondary and primary school children, available on the website: www.feral.org.au

The material used in the University of Canberra Diploma course was simplified for secondary students (www.feralfocus.org.au) and further for the primary school students (www.pestales.org.au).

Student activities, interactive scenarios and further reading all reinforce several strands of learning including: Life and Living; Working Scientifically; Science and Society; Science at Work; Sustainability of Life and Wise Resource Use; Time, Continuity and Change; Place and Space; Natural and Social Systems; Environments; Care of Places; and Natural and Social Systems.

Contact: Joanne Keogh, Education Officer
Invasive Animals CRC
University of Canberra
Email jo.keogh@canberra.edu.au
Note: Jo is the ACT representative on the National Science Curriculum Committee.

Acronyms

APVMA	Australian Pesticides and Veterinary Medicines Authority
AQTF	Australian Quality Training Framework
CMA	Catchment Management Authority
DAWA	Department of Agriculture Western Australia
DECC&W	Department of Environment, Climate Change and Water (NSW)
DEEWR	Department of Education, Employment and Workplace Relations
FAAST	Feral Animal Aerial Shooter Training
IA CRC	Invasive Animals Cooperative Research Centre
I&I NSW	Industry and Investment NSW
LHPA	Livestock Health and Pest Authority
NCVER	National Centre for Vocational Education Research
NPWS	National Parks and Wildlife Service
NRETAS	(Northern Territory) Natural Resources, Environment, The Arts and Sport
OH&S	Occupational Health and Safety
PIRSA	Department of Primary Industries and Resources of South Australia
Qld DEEDI	Queensland Department of Employment, Economic Development and Investment
Qld DPIF	Queensland Department of Primary Industries and Fisheries
RPL	Recognition of Prior Learning
RTO	Registered Training Organisation
Vic DPI	Victorian Department of Primary Industries
VPC	Vertebrate Pests Committee
VPM	Vertebrate Pest Management

Appendix 1 – Relevant people interviewed involved with pest animal management

NSW

Cathy Crawford, Program Development Officer Primary Industries, I&I NSW

Robert Williamson, I&I NSW

Tony Buckmaster, University of Sydney

Mike Braysher, University of Canberra

Peter Fleming, I&I NSW

Ken Ryall, TOCAL College

Nathan Cutter, I&I NSW

David Croft, retired, formerly of Department of Agriculture (I&I NSW)

Chris Lane, IA CRC

ACT

Nicola Webb, Vertebrate Pests Coordinator, ACT Parks, Conservation and Lands

David Power, ACT Environment Protection Authority

Victoria

John Burley, Director, Invasive Plants and Animals, Biosecurity Victoria, Vic DPI

John Matthews, Project Leader, Established Invasive Animals, Vic DPI and Victorian member of the VPC Training Working Group

Alison Head, Graduate Recruit, DPI Vic

Queensland

John Cross, Senior Biodiversity Officer Invasive Plants and Animals, Department of Employment, Economic Development and Innovation

South Australia

Phil Stott, Course Leader

Pat Wake, SA TAFE Roseworthy

Nick Crouch, SA TAFE Urrbrae

Western Australia

Anita Wyntje, Biosecurity Training and Operational Standards, WA

Northern Territory

Danie Luttig, Acting Team Leader: Agriculture and Rural Operations Team, SMARTtrain Trainer and Assessor, Charles Darwin University

Appendix 2 – Conservation and Land Management RTD02 Training Package competencies

RTD2004A Collect, prepare and preserve plant specimens
RTD2022A Carry out natural area restoration works
RTD2101A Apply animal trapping techniques
RTD2116A Muster pest animals
RTD2125A Use firearms to humanely destroy animals
RTD2126A Recognise animals
RTD2202A Conduct erosion and sediment control activities
RTD2206A Install aggregate paths
RTD2312A Inspect machinery for plant, animal and soil material
RTD2313A Clean machinery of plant, animal and soil material
RTD2402A Clear features that harbour pest animals
RTD2403A Conduct vertebrate pest activities from aircraft
RTD2405A Tag and locate Judas animals
RTD2501A Maintain cultural places
RTD2502A Maintain wildlife habitat refuges
RTD2703A Operate in isolated and remote situations
RTD2802A Record information about country
RTD2803A Observe and report plants and/or animals
RTD3034A Implement revegetation works
RTD3125A Respond to wildlife emergencies
RTD3132A Survey pest animals
RTD3202A Construct access tracks
RTD3205A Construct conservation earthworks
RTD3212A Implement erosion and sediment control measures
RTD3315A Transport machinery
RTD3405A Monitor and evaluate the local pest management action plan
RTD3501A Assist in the implementation of legislation
RTD3502A Carry out inspection of designated area
RTD3505A Maintain natural areas
RTD3507A Undertake sampling and testing of water
RTD3508A Perform diving for scientific purposes
RTD3509A Collect and preserve biological samples
RTD3703A Respond to rescue incidents
RTD3706A Maintain biological cultures
RTD3707A Release biological agents
RTD3709A Handle and store explosives
RTD3710A Identify and select explosive products
RTD3711A Prepare and use explosives
RTD3802A Provide appropriate information on cultural knowledge
RTD3804A Supervise park visitor activities
RTD3811A Coordinate board/committee elections
RTD3812A Coordinate fund-raising activities
RTD3813A Coordinate social events to support group purposes
RTD3814A Present proposed courses of action to meeting
RTD3815A Represent group at functions
RTD3816A Service committees

RTD3817A Propose appropriate uses of traditional customs
RTD3903A Work in an Indigenous community or organisation
RTC1006A Support nursery work
RTC1201A Maintain the workplace
RTC1202A Support landscape work
RTC1301A Operate basic machinery and equipment
RTC1302A Assist with routine maintenance of machinery and equipment
RTC1701A Follow basic chemical safety rules
RTC1801A Prepare for work
RTC2005A Fell small trees
RTC2012A Plant trees and shrubs
RTC2016A Recognise plants
RTC2026A Undertake propagation activities
RTC2203A Conduct visual inspection of park facilities
RTC2209A Install, maintain and repair fencing
RTC2210A Maintain properties and structures
RTC2301A Undertake operational maintenance of machinery
RTC2304A Operate and maintain chainsaws
RTC2306A Operate vehicles
RTC2307A Operate machinery and equipment
RTC2309A Operate tractors
RTC2401A Treat weeds
RTC2404A Treat plant pests, diseases and disorders
RTC2701A Follow OHS procedures
RTC2702A Observe environmental work practices
RTC2704A Provide basic first aid
RTC2705A Work effectively in the industry
RTC2706A Apply chemicals under supervision
RTC2801A Participate in workplace communications
RTC3016A Provide information on plants and their culture
RTC3201A Conduct operational inspection of park facilities
RTC3206A Erect timber structures and features
RTC3209A Plan and construct conventional fencing
RTC3211A Implement a maintenance program for an aquatic environment
RTC3213A Implement property improvement, construction and repair
RTC3218A Undertake a site assessment
RTC3310A Operate specialised machinery and equipment
RTC3311A Perform specialised machinery maintenance
RTC3401A Control weeds
RTC3404A Control plant pests, diseases and disorders
RTC3701A Respond to emergencies
RTC3704A Prepare and apply chemicals
RTC3705A Transport, handle and store chemicals
RTC3805A Coordinate work site activities
RTC4024A Recommend plants and cultural practices
RTC4206A Supervise landscape project works
RTC4306A Supervise maintenance of machinery and equipment
RTC4701A Implement and monitor the enterprise OHS program
RTC4702A Minimise risks in the use of chemicals
RTC4703A Plan and implement a chemical use program

RTC4905A Cost a project
RTC4908A Supervise work routines and staff performance
RTC4911A Operate within a budget framework
RTC5011A Collect and classify plants
RTC5201A Conduct comprehensive inspection of park facilities
RTC5303A Manage machinery and equipment
RTC5504A Develop a management plan for a designated area
RTC5519A Conduct biological surveys
RTC5520A Manage parks and reserves
RTC5701A Establish and maintain the enterprise OHS program
RTC5702A Develop and manage a chemical use strategy
RTC5801A Provide specialist advice to clients
RTD4020A Plan the implementation of revegetation works
RTD4205A Set out conservation earthworks
RTD4207A Supervise on-site implementation of conservation earthworks
RTD4303A Prepare safe operating procedures for calibration of equipment
RTD4402A Define the pest problem in a local area
RTD4403A Develop a pest management action plan within a local area
RTD4404A Develop monitoring procedures for the local pest management strategy
RTD4405A Coordinate the local pest management strategy
RTD4406A Implement pest management action plans
RTD4407A Investigate a reported pest treatment failure
RTD4501A Contribute to the proposal for a negotiated outcome for a given area of country
RTD4502A Implement land and sea management practices
RTD4503A Inspect and monitor cultural places
RTD4504A Monitor biodiversity
RTD4505A Participate in assessments of project submissions
RTD4506A Process applications for changes in land use
RTD4507A Produce maps for land management purposes
RTD4508A Protect places of cultural significance
RTD4509A Report on place of potential cultural significance
RTD4510A Supervise natural area restoration works
RTD4802A Develop approaches to include cultural and human diversity
RTD4804A Develop community networks
RTD4805A Facilitate ongoing group development
RTD4806A Obtain and manage sponsorship
RTD4807A Obtain resources from community and group
RTD4808A Promote community programs
RTD4809A Record and document community history
RTD4810A Support individuals in resource management change processes
RTD4811A Provide information on environmental issues and policies
RTD4906A Develop work practices to accommodate cultural identity
RTD4907A Establish an office
RTD4909A Prepare project acquittal
RTD4910A Report on project
RTD4912A Contribute to association governance
RTD5003A Manage natural area restoration programs
RTD5102A Manage fauna populations
RTD5202A Design control measures and structures
RTD5203A Plan erosion and sediment control measures

RTD5204A Plan conservation earthworks
RTD5401A Define the pest problem in a regional or broader context
RTD5402A Develop a strategy for the management of target pests
RTD5403A Develop a system for monitoring the pest management strategy
RTD5404A Coordinate the pest management strategy in a regional or broader context
RTD5405A Evaluate the pest management strategy
RTD5501A Assess applications for legislative compliance
RTD5502A Conduct field research into natural and cultural resources
RTD5503A Design a natural area restoration project
RTD5507A Develop conservation strategies for cultural resources
RTD5508A Develop strategies for Indigenous land or sea management
RTD5509A Evaluate project submissions
RTD5510A Implement plans of management
RTD5511A Manage restoration of cultural places
RTD5512A Manage the implementation of legislation
RTD5513A Manage wildfire hazard reduction programs
RTD5517A Propose a negotiated outcome for a given area of country
RTD5518A Review assessments for legislative compliance
RTD5522A Plan river restoration works
RTD5802A Support group and community changes in resource management
RTD5803A Operate within community cultures and goals
RTD5805A Facilitate development of group goals and projects
RTD5806A Promote group formation and development
RTD5904A Map relationship of business enterprise to culture and country
RTD5907A Plan for successful cultural practice at work
RTD5910A Contribute to regional planning process
RTD5911A Manage the incorporation of a group
RTD5915A Investigate suspected breaches of NRM legislation
RTD6502A Review management plans and strategies
RTD6504A Coordinate the preparation of a regional resource management plan
RTD6505A Map regional issues and stakeholders
RTD6801A Manage cultural processes in an Indigenous organisation
RTD6902A Monitor projects in a program
BSBADM308A Process payroll
BSBADM502A Manage meetings
BSBADM504A Plan or review administration systems
BSBCMN205A Use business technology
BSBCMN206A Process and maintain workplace information
BSBCMN306A Produce business documents
BSBCMN308A Maintain financial records
BSBCMN405A Analyse and present research information
BSBCMN408A Report on financial activity
BSBFLM404A Lead work teams
BSBFLM501A Manage personal work priorities and professional development
BSBFLM510A Facilitate and capitalise on change and innovation
BSBHR604A Manage employee relations
BSBMGT503A Prepare budgets and financial plans
BSBMGT504A Manage budgets and financial plans
BSBMGT506A Recruit, select and induct staff
BSBMGT507A Manage environmental performance

BSBMGT603A Review and develop business plans
BSBMGT610A Manage environmental management systems
BSBSBM405A Monitor and manage business operations
BSZ404A Train small groups
CHCCD4A Develop and implement community programs
FPIFGM004A Manage seed collection
FPIFGM006A Extract seed
FPIFGM008A Conduct seed collecting operations
FPIFGM023A Store and dispatch seed
FPIFGM137A Manage road construction and maintenance
FPIFGM139A Operate 4x4 vehicle in off-road conditions
FPIFGM147A Read and interpret maps
FPIFGM162A Collect, treat and store seed
FPIL2191516A Reduce wildfire hazards
FPINCR033A Plan burning activities natural and cultural resource management
FPINCR034A Utilise burning for natural and cultural resource management
LGACOM502A Devise and conduct community consultation
MEM161BA Give formal presentations and take part in meetings
MNMOCC638A Undertake direct seeding
MNQOP20A Conduct grader operations
MNQOP21A Conduct front end loader operations
MNQOP22A Conduct shovel/excavator operations
MNQOP23A Conduct haul truck operations
MNQOP24A Conduct dozer operations
MNQOP25A Conduct scraper operations
PSPPM402A Implement projects
PSPPM502A Manage projects
PSPPM503A Finalise projects
PSPPOLD501A Develop organisation policy
PSPPOLI401A Support policy implementation
PSPPOLI601A Manage policy implementation
PUACOM012A Liaise with media at a local level
PUAFIR204A Respond to wildfire
PUAFIR303A Suppress wildfire
PUAFIR601A Develop and administer agency policy, procedures and practices
PUALAW001A Protect and preserve incident scene
PUAPRO001A Promote a learning environment in the workplace
SRXTEM004A Deal with conflict
TDTR298B Source goods/services and evaluate contractors
TDTR398B Negotiate a contract
THTFAT01B Provide on-site information and assistance
THTFTG01B Work as a guide
THTFTG07B Research and share general information on Australian indigenous cultures
THTFTG08B Interpret aspects of local Australian indigenous culture
THTFTG14A Prepare specialised interpretive content (cultural and heritage environments
THTPPD05B Plan and develop interpretive activities
THTPPD07B Plan and develop culturally appropriate tourism operations

Appendix 2 – Proposed competencies in the new Agriculture, Horticulture and Conservation and Land Management Training Package AHC09

AGRIBUSINESS

AHCAGB301A Keep records for a primary production business
AHCAGB401A Implement and monitor a property improvement plan
AHCAGB402A Analyse and interpret production data
BSBRSK401A Identify risk and apply risk management process
AHCAGB501A Develop climate risk management strategies
AHCAGB502A Plan and manage infrastructure requirements
AHCAGB503A Plan and monitor production processes
AHCAGB504A Plan production for the whole land farm based business
AHCAGB505A Develop a whole farm plan
BSBWOR501A Manage personal work priorities and professional development
AHCAGB601A Develop export markets for produce
AHCAGB602A Manage estate planning
AHCAGB603A Manage the production system
AHCAGB604A Analyse business performance
AHCAGB605A Manage business capital
AHCAGB606A Manage price risk through trading strategy

ARTIFICIAL INSEMINATION

AHCAIS201A Assist with artificial insemination procedures
AHCAIS301A Collect semen
AHCAIS302A Process and store semen
AHCAIS303A Artificially inseminate livestock
AHCAIS401A Supervise artificial breeding and or embryo transfer programs

ARBORICULTURE

AHCARB201A Apply a range of treatments to trees
AHCARB202A Fell small trees
AHCARB203A Perform above ground pruning
AHCARB204A Undertake standard climbing techniques
AHCARB205A Operate and maintain chainsaws
AHCARB206A Undertake stump removal
FPICOT2221 Trim and cross cut felled trees
FPIHAR2206A Operate a mobile chipper/mulcher
AHCARB301A Implement a tree maintenance program
AHCARB302A Conduct tree inspections
AHCARB303A Implement a tree pruning program
AHCARB304A Fell trees with advanced techniques
AHCARB305A Remove trees in confined spaces
AHCARB306A Undertake aerial rescue
AHCARB307A Undertake complex tree climbing
AHCARB308A Install cable and bracing
AHCARB309A Implement a tree protection program
FPIFGM2208A Fall trees manually basic
FPIFGM3204A Fall trees manually (intermediate)

FPIFGM3205A Fall trees manually (advanced)
AHCARB501A Assess trees
AHCARB502A Identify, select and specify trees
AHCARB503A Diagnose tree diseases
AHCARB504A Develop a tree protection program
AHCARB505A Document and audit tree work

BROAD ACRE CROPPING
AHCBAC101A Support agricultural crop work
AHCBAC201A Assist agricultural crop establishment
AHCBAC202A Assist agricultural crop maintenance
AHCBAC203A Assist agricultural crop harvesting
AHCBAC204A Prepare grain storages
AHCBAC205A Operate cane haulage vehicle
AHCBAC301A Conserve forage
AHCBAC302A Establish pastures and crops for livestock production
AHCBAC303A Prepare to receive grains seeds
AHCBAC304A Test grains seeds on receipt
AHCBAC305A Undertake preparation of land for agricultural crop production
AHCBAC306A Establish agricultural crops
AHCBAC307A Maintain agricultural crops
AHCBAC308A Undertake agricultural crop harvesting activities
AHCBAC401A Manage pastures for livestock production
AHCBAC402A Plan a pasture establishment program
AHCBAC403A Supervise agricultural crop establishment
AHCBAC404A Plan and implement agricultural crop maintenance
AHCBAC405A Supervise agricultural crop harvesting
AHCBAC406A Maintain grain quality in storage
AHCBAC407A Save, prepare and store agricultural seed
AHCBAC501A Manage agricultural crop production
AHCBAC502A Manage forage conservation
AHCBAC503A Manage integrated crop and pasture production
AHCBAC504A Plan and manage a stored grain program
AHCBAC505A Plan and manage long-term weed, pest and/or disease control in crops
AHCBAC506A Manage the harvest of crops

BEE KEEPING
AHCBEK201A Assist beekeeping work
AHCBEK202A Use a bee smoker
AHCBEK203A Open and reassemble a beehive
AHCBEK204A Construct and repair beehives
AHCBEK301A Manage honey bee swarms
AHCBEK302A Manipulate honey bee brood
AHCBEK303A Re-queen a honey bee colony
AHCBEK304A Remove a honey crop from a hive
AHCBEK305A Extract honey
AHCBEK306A Manage pests and disease within a honey bee colony
AHCBEK401A Collect and store propolis
AHCBEK402A Perform queen bee artificial insemination
AHCBEK403A Produce and harvest royal jelly

AHCBEK404A Provide bee pollination services
AHCBEK405A Select and establish an apiary site
AHCBEK406A Trap and store pollen
AHCBEK407A Rear queen bees
FDFCORQFS3A Implement quality and food safety programs

BIOSECURITY
AHCBIO201A Inspect and clean machinery for plant, animal and soil material
AHCBIO202A Follow site quarantine procedures
AHCBIO301A Work effectively in an emergency disease or plant pest response
AHCBIO302A Identify and report unusual disease or plant pest signs
AHCBIO303A Carry out emergency disease or plant pest control procedures at infected premises
AHCBIO304A Carry out movement and security procedures
AHCBIO305A Monitor and review biosecurity measures
AHCBIO401A Supervise activities on infected premises
AHCBIO402A Carry out field surveillance for a specific emergency disease or plant pest
AHCBIO403A Plan and implement a biosecurity program
AHCBIO501A Manage active operational emergency disease or plant pest sites
AHCBIO502A Manage the implementation of an emergency disease or plant pest control program
AHCBIO601A Plan and oversee an emergency disease or plant pest control program
AHCBIO602A Develop a plant pest survey strategy
AHCBIO603A Develop a plant pest destruction strategy

BUSINESS
AHCBUS301A Use hand held e-business tools
BSBCMN206A Process and maintain workplace information
BSBCMN306A Produce business documents
BSBADM311A Maintain business resources
BSBEBUS302A Use and maintain and electronic mail system
BSBEBUS303A Participate in a virtual community
BSBWOR204A Use business technology
BSBFIA301A Maintain financial records
BSBITU306A Design and produce business documents
BSBADM311A Maintain business resources
AHCBUS401A Administer finance, insurance and legal requirements
AHCBUS402A Cost a project
AHCBUS403A Support and review business structures and relationships
AHCBUS404A Operate within a budget framework
AHCBUS405A Participate in an e-business supply chain
BSBFIA402A Report on financial activity
BSBADM405B Organise meetings
BSBADM407B Administer projects
BSBSBM405A Monitor and manage business operations
BSBSBM406A Manage small business finances
BSBWOR402A Promote team effectiveness
BSBHRM402A Recruit, select and induct staff
BSBINM401A Implement workplace information system
BSBITU404A Produce complex desktop published documents

BSBCMM401A Make a presentation
AHCBUS501A Manage staff
AHCBUS502A Market products and services
AHCBUS503A Negotiate and monitor contracts
AHCBUS504A Prepare estimates, quotes and tenders
AHCBUS505A Develop a marketing plan
AHCBUS506A Develop and review a business plan
AHCBUS507A Monitor and review business performance
AHCBUS508A Prepare and monitor budgets and financial reports
TLIR307C Negotiate a contract
BSBADM504B Plan or review administration systems
BSBEBUS504A Implement an e-business strategy
BSBEBUS505A Implement new technologies for business
BSBEBUS506A Plan and develop a business website
BSBFIM501A Manage budgets and financial plans
BSBHRM506A Manage recruitment, selection and induction processes
BSBMGT501A Manage risk
BSBMGT507A Monitor environmental performance
BSBRES401A Analyse and present research information
BSBSUS501A Develop workplace policy and procedures for sustainability
TLIL1907C Implement and monitor transport logistics
TLIR207C Source goods/services and evaluate contractors
AHCBUS601A Manage capital works
AHCBUS602A Review land management plans and strategies
AHCBUS603A Develop and review a strategic plan
AHCBUS604A Design and manage the enterprise quality management system
AHCBUS605A Manage human resources
AHCBUS606A Develop a monitoring, evaluation and reporting program
AHCBUS607A Implement a monitoring, evaluation and reporting program
AHCBUS608A Manage risk

COMMUNITY COORDINATION AND FACILITATION

AHCCCF401A Prepare project acquittal
AHCCCF402A Report on project
AHCCCF403A Obtain and manage sponsorship
AHCCCF404A Contribute to association governance
AHCCCF405A Develop community networks
AHCCCF406A Facilitate ongoing group development
AHCCCF407A Obtain resources from community and group
AHCCCF408A Promote community programs
AHCCCF409A Participate in assessments of project submissions
AHCCCF410A Support individuals in resource management change processes
AHCCCF411A Develop approaches to include cultural and human diversity
AHCCCF412A Coordinate board committee elections
AHCCCF413A Service committees
AHCCCF414A Coordinate fund-raising activities
AHCCCF415A Coordinate social events to support group purposes
AHCCCF416A Present proposed courses of action to meeting
CHCCD404D Develop and implement community programs
LGACOM502B Devise and conduct community consultations

AHCCCF501A Evaluate project submissions
AHCCCF502A Facilitate development of group goals and projects
AHCCCF503A Promote group formation and development
AHCCCF504A Support group and community changes in resource management
AHCCCF505A Contribute to regional planning process
AHCCCF506A Manage the incorporation of a group
AHCCFC601A Map regional issues and stakeholders

CHEMICALS
AHCCHM101A Follow basic chemical safety rules
AHCCHM201A Apply chemicals under supervision
AHCCHM301A Conduct fumigation in enclosed spaces
AHCCHM302A Fumigate soil using chemicals
AHCCHM303A Prepare and apply chemicals
AHCCHM304A Transport, handle and store chemicals
AHCCHM305A Operate chemical application machinery and equipment
AHCCHM401A Minimise risk in the use of chemicals
AHCCHM402A Plan and implement a chemical use program
AHCCHM403A Prepare safe operating procedures for calibration of equipment
AHCCHM501A Develop and manage a chemical use strategy

COMPOSTING
AHCCOM201A Assess and receive raw materials for composting
AHCCOM202A Recognise and respond to fire emergencies on a composting site
AHCCOM203A Recognise raw materials, production processes and products on a composting site
AHCCOM301A Operate compost processing plant, machinery and equipment
AHCCOM302A Dispatch materials and composted product
AHCCOM303A Operate a compost bagging process
AHCCOM401A Develop a composting recipe
AHCCOM402A Plan and schedule compost production
AHCCOM501A Identify and secure raw materials supply for compost production

DEER
AHCDER401A Handle, store and grade deer velvet
AHCDER501A Comply with deer industry national velvet accreditation requirements
AHCDER502A Harvest deer velvet

DRAINAGE
AHCDRG201A Maintain drainage systems
AHCDRG301A Install drainage systems
AHCDRG302A Measure drainage system performance
AHCDRG303A Troubleshoot drainage systems
AHCDRG501A Design drainage systems

DAIRY
AHCDRY201A Carry out milking shed routines
AHCDRY202A Milk livestock
AHCDRY301A Coordinate milking operations
AHCDRY401A Manage milking shed routines

EXPLOSIVES
AHCEXP301A Handle and store explosives
AHCEXP302A Identify and select explosive products
AHCEXP303A Prepare and use explosives

FAUNA
AHCFAU201A Recognise fauna
AHCFAU301A Respond to wildlife emergencies
LGAREGS305A Undertake animal or reptile control duties
RUV3303A Monitor and maintain animal health and wellbeing
RUV3401A Rehabilitate and release native wildlife
RUV3408A Prepare animal diets and monitor feeding
RUV3409A Monitor and maintain animal health
RUV3410A Capture, restrain and assist in moving animals
RUV3411A Care for young animals
RUV3509A Maintain aquascapes and aquatic animals
THTFAT12B Rescue animals
RUV4204A Manage conflict situations in an animal control and regulation environment
RUV4207A Conduct community awareness programs
AHCFAU501A Manage fauna populations

FIRE
AHCFIR201A Assist with prescribed burning
FPIL2191516A Reduce wildfire hazards
PRMPFES05B Use portable fire fighting equipment
PUAFIR204B Respond to wildfire
PUAFIR303B Suppress wildfire
PUAFIR406A Develop prescribed burning plans
AHCFIR501A Manage wildfire hazard reduction programs

FIRST AID
HLTFA201A Provide basic emergency life support
HLTFA301B Apply first aid
HLTFA302A Provide first aid in remote situation
HLTFA402B Apply advanced first aid
HLTFA403A Manage first aid in the workplace
HLTFA404A Apply advanced resuscitation techniques

FOOD
FDFOPTWFS2A Work in a food handling area for non-food handlers
FDFOPTFST2A Maintain food safety when loading, unloading, and transporting food
FDFCORFSY2A Apply the food safety program and procedures
FDFHYCH2A Operate a creamed honey manufacture process
FDFOPTHCP3A Participate in a HACCP team
FDFOPTISP2A Implement sampling procedures
FDFZCSCIP2A Clean equipment in place
FDFZCSCS2A Clean and sanitize equipment
FDFZPKPP2A Operate a packaging process
FDFCORQFS3A Monitor implementation of Quality and Food Safety program

HORSE BREEDING
AHCHBR101A Support horse work
AHCHBR201A Monitor horse health and welfare
AHCHBR202A Handle young horses
AHCHBR203A Provide daily care for horses
AHCHBR204A Assist with mating procedures and parturition of horses
AHCHBR302A Carry out basic hoof care procedures
AHCHBR303A Carry out mare mating or artificial insemination procedures
AHCHBR304A Educate, ride and care for horses and equipment
AHCHBR305A Handle and care for stallions
AHCHBR306A Prevent and treat equine injury and disease
AHCHBR307A Assess suitability of horses for stock work
AHCHBR401A Carry out stud stable management duties
AHCHBR402A Supervise raising young horses

HYDROPONICS
AHCHYD301A Implement a maintenance program for hydroponic systems
AHCHYD302A Install hydroponic systems
AHCHYD501A Develop a plan for a hydroponic system

INDIGENOUS LAND MANAGEMENT
AHCILM201A Maintain cultural places
AHCILM202A Observe and report plants and or animals
AHCILM203A Record information about country
AHCILM301A Follow cultural protocols
AHCILM301A Propose appropriate uses of traditional customs
AHCILM302A Provide appropriate information on cultural knowledge
AHCILM303A Work in an Indigenous community or organisation
FPINCR034A Utilise burning for natural and cultural resource management
SITGDE009A Interpret aspects of local Indigenous culture
AHCILM401A Protect places of cultural significance
AHCILM402A Report on place of potential cultural significance
AHCILM403A Contribute to the proposal for a negotiated outcome for a given area of country
AHCILM404A Record and document community history
AHCILM405A Develop work practices to accommodate cultural identity
SITTGDE008A Research and share general information on Australian Indigenous cultures
AHCILM501A Conduct field research into natural and cultural resources
AHCILM502A Develop conservation strategies for cultural resources
AHCILM503A Manage restoration of cultural places
AHCILM504A Develop strategies for Indigenous land or sea management
AHCILM505A Map relationship of business enterprise to culture and country
AHCILM506A Operate within community cultures and goals
AHCILM507A Plan for successful cultural practice at work
AHCILM508A Propose a negotiated outcome for a given area of country
AHCILM509A Plan burning activities for natural and cultural resource management
SITTGDE009A Interpret aspects of local Indigenous culture
AHCILM601A Manage cultural processes in an Indigenous organisation

INFRASTRUCTURE
AHCINF201A Carry out basic electric fencing operations

AHCINF202A Install, maintain and repair fencing
AHCINF203A Maintain properties and structures
AHCINF204A Fabricate and repair metal or plastic structures
AHCINF301A Implement property improvement, construction and repair
AHCINF302A Plan and construct an electric fence
AHCINF303A Plan and construct conventional fencing

IRRIGATION
AHCIRG101A Support irrigation work
AHCIRG201A Assist with the operation of gravity fed irrigation
AHCIRG202A Assist with the operation of pressurised irrigation
AHCIRG203A Install micro-irrigation systems
AHCIRG204A Lay irrigation and or drainage pipes
AHCIRG205A Maintain gravity-fed irrigation systems
AHCIRG206A Maintain pressurised irrigation systems
AHCIRG301A Implement a maintenance program for an irrigation system
AHCIRG302A Install irrigation systems
AHCIRG303A Measure irrigation delivery system performance
AHCIRG304A Operate gravity fed irrigation systems
AHCIRG305A Operate pressurised irrigation systems
AHCIRG306A Troubleshoot irrigation systems
AHCIRG307A Recommend irrigation products and services
CPCPWT3007A Connect irrigation systems to potable water supply
CPCPCM2007A Carry out levelling
CPCPCM2014A Carry out simple concreting and rendering
AHCIRG401A Acquire resources for irrigation installation and construction
AHCIRG402A Determine hydraulic parameters for an irrigation system
AHCIRG403A Determine seasonal irrigation scheduling tasks
AHCIRG404A Implement an irrigation-related environmental protection program
AHCIRG405A Plan and co-ordinate gravity-fed irrigation systems
AHCIRG406A Plan on-site irrigation system installation and construction work
AHCIRG407A Supervise on-site irrigation installation and construction work
AHCIRG501A Audit irrigation systems
AHCIRG502A Design irrigation system maintenance and monitoring programs
AHCIRG503A Design irrigation, drainage and water treatment systems
AHCIRG504A Develop an irrigation and drainage management plan
AHCIRG505A Establish and maintain an irrigation-related environmental protection program

DESIGN
BSBDES305A Source and apply information on the history and theory of design
CUVCRS03A Produce computer aided drawings
CUVCRS04A Produce technical drawings
CUVVSP16A Research and experiment with techniques to produce drawings
BSBDES403A Develop and extend design skills and practice
PIL403A Design an urban permaculture system
PIL401A Provide advice on permaculture principles and practices
PIL404A Plan for the implementation of permaculture works
AHCLDE501A Design sustainable landscapes
AHCLDE502A Prepare a landscape project design
AHCLDE503A Assess landscape sites

AHCLDE504A Design for construction of landscape features
BSBDES501A Implement design solutions
BSBDES502A Establish, negotiate and refine a design brief
PIL505A Plan the implementation of a permaculture project

LANDS, PARKS AND WILDLIFE
AHCLPW301A Supervise park visitor activities
AHCLPW303A Construct access tracks
AHCLPW304A Carry out inspection of designated area
AHCLPW305A Perform diving for scientific purposes
AHCLPW306A Undertake sampling and testing of water
PUALAW001B Protect and preserve incident scene
SITTGDE001A Work as a guide
AHCLPW401A Process applications for changes in land use
AHCLPW402A Implement land and sea management practices
AHCLPW403A Inspect and monitor cultural places
AHCLPW404A Produce maps for land management purposes
AHCLPW405A Monitor biodiversity
SITTGDE010A Prepare specialised interpretive content on flora, fauna and landscape
SITTGDE012A Prepare specialised interpretive content on cultural and heritage environments
SITTPPD005A Plan and develop interpretive activities
SITXCCS001A Provide visitor information
PUACOM012B Liaise with the media at a local level
AHCLPW501A Develop a management plan for a designated area
AHCLPW503A Assess applications for legislative compliance
AHCLPW504A Review assessments for legislative compliance
AHCLPW505A Implement natural and cultural resource management plans
AHCLPW506A Investigate suspected breaches of NRM legislation
NWP512B Implement and manage catchment management plan
NWP513B Develop and review catchment management plan
NWP516B Implement and manage surface water management plan
NWP517B Develop and review surface water management plan
NWP518B Prepare and report on data related to flood mitigation
NWP519B Develop and report flood mitigation
PUAFIR406A Develop prescribed burning plans
PRMWM43B Develop an environmental management strategy
SRXRES007B Undertake open space planning
SRXRES010B Protect heritage and cultural assets
AHCLPW601A Coordinate the preparation of a regional resource management plan
AHCLPW602A Review land management plans and strategies

LANDSCAPING
AHCLSC101A Support landscape work
AHCLSC201A Assist with landscape construction work
AHCLSC202A Construct low-profile timber or modular retaining walls
AHCLSC203A Install aggregate paths
AHCLSC204A Lay paving
AHCLSC205A Install tree protection devices
AHCLSC301A Set out site for construction works
AHCLSC302A Construct landscape features using concrete

AHCLSC303A Construct brick and or block structures and features
AHCLSC304A Erect timber structures and features
AHCLSC305A Construct stone structures and features
AHCLSC306A Implement a paving project
AHCLSC307A Implement a retaining wall project
AHCLSC308A Install metal structures and features
AHCLSC309A Install water features
AHCLSC310A Implement a tree transplanting program
AHCLSC401A Supervise landscape project works
AHCLSC501A Survey and establish site levels
AHCLSC502A Manage landscape projects
AHCLSC503A Manage a tree transplanting program

LIVESTOCK

AHCLSK101A Support extensive livestock work
AHCLSK102A Support intensive livestock work
AHCLSK201A Assist with feeding in a production system
AHCLSK202A Care for health and welfare of livestock
AHCLSK203A Carry out birthing duties
AHCLSK204A Carry out regular livestock observation
AHCLSK205A Handle livestock using basic techniques
AHCLSK206A Identify and mark livestock
AHCLSK207A Load and unload livestock
AHCLSK208A Monitor livestock to parturition
AHCLSK209A Monitor water supplies
AHCLSK210A Muster and move livestock
AHCLSK211A Provide feed for livestock
AHCLSK212A Ride horses to carry out stock work
AHCLSK213A Clean out production sheds
AHCLSK214A Maintain production growing environments
AHCLSK215A Carry out alpaca handling and husbandry operations
AHCLSK301A Administer medication to livestock
AHCLSK302A Mate and monitor reproduction of alpacas
AHCLSK303A Carry out feedlot operations
AHCLSK304A Carry out post-mortem examination of livestock
AHCLSK305A Maintain livestock water supplies
AHCLSK306A Coordinate and monitor production performance
AHCLSK307A Euthanase livestock
AHCLSK308A Identify and draft livestock
AHCLSK309A Implement animal health control programs
AHCLSK310A Implement feeding plans for intensive production
AHCLSK311A Implement feeding plans for livestock
AHCLSK312A Coordinate artificial insemination and fertility management of livestock
AHCLSK313A Monitor livestock production growing environments
AHCLSK314A Prepare animals for parturition
AHCLSK315A Prepare for and implement natural mating of livestock
AHCLSK316A Prepare livestock for competition
AHCLSK317A Plan to exhibit livestock
AHCLSK318A Rear newborn and young livestock
AHCLSK319A Slaughter livestock

AHCLSK320A Coordinate and monitor livestock transport
AHCLSK321A Service and repair bores and windmills
AHCLSK322A Transport farm produce or bulk materials
AHCLSK323A Maintain and monitor feed stocks
AHCLSK324A Care for and train working dogs
AHCLSK325A Castrate livestock
AHCLSK326A Mix and mill standard stock feed
AHCLSK327A Collect store and administer colostrum
AHCLSK328A Remove and facilitate reuse of effluent and manure from an intensive production system
AHCLSK329A Implement procedures for calving
AHCLSK330A Implement procedures for foaling down mares
AHCLSK331A Comply with industry animal welfare requirements
AHCLSK401A Develop feeding plans for a production system
AHCLSK402A Develop livestock feeding plans
AHCLSK403A Escort animals during export
AHCLSK404A Implement and monitor animal welfare programs
AHCLSK405A Implement intensive production systems
AHCLSK406A Oversee animal marking operations
AHCLSK407A Plan and monitor intensive production systems
AHCLSK408A Pregnancy test animals
AHCLSK409A Supervise animal health programs
AHCLSK410A Supervise feedlot operations
AHCLSK411A Supervise natural mating of livestock
AHCLSK412A Arrange livestock purchases
AHCLSK413A Design livestock handling facilities
AHCLSK414A Arrange transport for farm produce or livestock
AHCLSK415A Oversee alpaca farm activities
AHCLSK416A Identify and select animals for breeding
AHCLSK417A Manage horses for stockwork
AHCLSK501A Manage livestock production
AHCLSK502A Arrange marketing of livestock
AHCLSK503A Develop and implement a breeding strategy
AHCLSK504A Develop livestock health and welfare strategies
AHCLSK505A Develop production plans for livestock
AHCLSK506A Design livestock effluent systems

MERCHANDISING AND SALES

SIRXADM001A Apply retail office procedures
SIRXCCS001A Apply point of sale handling procedures
SIRXCCS002A Interact with customers
SIRXCLM001A Organise and maintain work areas
SIRXFIN001A Balance point-of-sale terminal
SIRXFIN002A Perform retail finance duties
SIRXINV002A Maintain and order stock
SIRXICT001A Operate retail technology
SIRXMER001A Merchandise products
SIRXSLS001A Sell products and services
SIRXSLS002A Advise on products and services
AHCMER301A Process customer complaints

AHCMER302A Provide advice on hardware products
AHCMER303A Sell products and services
BSBCUS301A Deliver and monitor a service to customers
BSBPRO301A Meet customer needs and expectations
BSBSLS402A Identify sales prospects
SIRXADM002A Coordinate retail office
SIRXINV002A Maintain and order stock
SIRXINV004A Buy merchandise
SIRXMER001A Merchandise products
SIRXMER002A Coordinate merchandise presentation
SIRXMER003A Monitor in-store visual merchandising display
SIRXMER005A Create a display
SIRXRSK002A Maintain store security
SIRXSLS002A Advise on products and services
SIRXSLS004A Build relationships with customers
AHCMER401A Coordinate customer service and networking activities
AHCMER402A Provide advice and sell machinery
AHCMER403A Provide advice and sell farm chemicals
AHCMER404A Provide advice on agronomic products
AHCMER405A Provide advice on livestock products
AHCMER406A Provide information on fertilisers and soil ameliorants
BSBREL402A Build client relationships and business networks
BSBSMB403A Market the small business
SIRXINV004A Buy merchandise
SIRXINV005A Control inventory
SIRXMER002A Coordinate merchandise presentation
SIRXMER003A Monitor in-store visual merchandising display
SIRXMER004A Manage merchandise and store presentation
SIRXMPR001A Profile a retail market
SIRXRSK004A Control store security
AHCMER501A Develop a sales strategy for rural products
BSBCUS501A Manage quality customer service
CPPDSM4039A Conduct livestock sale by auction
SIRXCLM002A Manage store facilities
SIRXINV005A Control inventory
SIRXRSK004A Control store security
SIRXMER004A Manage merchandise and store presentation
SIRXSLS005A Manage sales and service delivery

MILK HARVESTING

AHCMKH301A Carry out minor service of milking equipment
AHCMKH302A Operate a dairy recycling system
AHCMKH303A Service and repair milking equipment
AHCMKH304A Monitor and provide advice on cleaning milking machines
AHCMKH305A Mechanically test milking machines
AHCMKH401A Carry out cleaning-time tests of milking machines
AHCMKH402A Design and fabricate milking equipment installations
AHCMKH403A Design and install on-farm milk cooling and storage
AHCMKH404A Install milking equipment
AHCMKH405A Performance test milking machines

MACHINERY OPERATION AND MAINTENANCE

AHCMOM101A Assist with routine maintenance of machinery and equipment
AHCMOM201A Operate farm motorbikes
AHCMOM202A Operate tractors
AHCMOM203A Operate basic machinery and equipment
AHCMOM204A Undertake operational maintenance of machinery
AHCMOM205A Operate vehicles
AHCMOM206A Conduct grader operations
AHCMOM207A Conduct front end loader operations
AHCMOM208A Conduct excavator operations
AHCMOM209A Conduct dozer operations
AHCMOM210A Conduct scraper operations
AHCMOM211A Operate all-terrain vehicles
FPICOT2234A Operate 4x4 vehicle
TLID1007C Operate a forklift
TLID2207C Conduct weighbridge operations
BCC3002A Conduct backhoe/loader operations
BCC3006A Conduct grader operations
BCC3008A Conduct skid steer loader operations
AHCMOM301A Coordinate machinery and equipment maintenance and repair
AHCMOM302A Perform machinery maintenance
AHCMOM304A Operate machinery and equipment
AHCMOM305A Operate specialised machinery and equipment
AHCMOM306A Ground spread fertiliser and soil ameliorant
AHCMOM307A Operate a cane harvester
AHCMOM308A Operate broadacre and row crop harvest machinery and equipment
AHCMOM309A Operate broadacre sowing machinery and equipment
AHCMOM310A Operate land-forming machinery and equipment
AHCMOM311A Operate precision control technology
AHCMOM312A Operate row crop planting and seeding machinery and equipment
AHCMOM313A Operate mobile irrigation machinery and equipment
AHCMOM314A Transport machinery
FDFWGG3008A Operate a mechanical grape harvester
FDFWGG3013A Operate spreading and seeding equipment
CPCCCM3001A Operate elevated work platforms
AHCMOM401A Conduct major repair and overhaul of machinery and equipment
AHCMOM402A Supervise maintenance of machinery and equipment
AHCMOM501A Manage machinery and equipment
AHCMOM502A Implement a machinery management system
AHCMOM601A Analyse machinery options

NATURAL AREA RESTORATION

AHCNAR101A Support natural area conservation
AHCNAR102A Support native seed collection
AHCNAR201A Carry out natural area restoration works
AHCNAR202A Maintain wildlife habitat refuges
FPIFGM2201A Collect seed
AHCNAR301A Maintain natural areas
AHCNAR302A Collect and preserve biological samples
AHCNAR303A Implement revegetation works

AHCNAR304A Undertake direct seeding
MNMOCC638A Undertake direct seeding
FPIFGM008A Conduct seed collecting operations
FPIFGM3202A Extract seed
AHCNAR401A Supervise natural area restoration works
AHCNAR402A Plan the implementation of revegetation works
FPIFGM3201A Manage seed collection
AHCNAR501A Manage natural areas on a rural property
AHCNAR502A Conduct biological surveys
AHCNAR503A Design a natural area restoration project
AHCNAR504A Manage natural area restoration programs
AHCNAR505A Plan river restoration works
AHCNAR506A Develop and implement sustainable land use strategies

NATURAL RESOURCE MANAGEMENT
AGAPLE M508AManipulate and analyse data within geographic information systems
VBN804 Develop a coastal rehabilitation strategy
VBN805 Develop a water quality monitoring strategy
VBP582 Support the implementation of waterways strategies
VBP583 Interpret and report on catchment hydrology
VBP584 Provide technical advice on sustainable catchment management
VBP585 Plan and monitor works projects in catchments and waterways

NURSERY
AHCNSY101A Support nursery work
AHCNSY201A Pot up plants
AHCNSY202A Tend nursery plants
AHCNSY203A Undertake propagation activities
AHCNSY204A Maintain indoor plants
AHCNSY301A Maintain nursery plants
AHCNSY302A Receive and dispatch nursery products
AHCNSY303A Install and maintain plant displays
AHCNSY304A Deliver and promote sale of plants
AHCNSY305A Prepare specialised plants
AHCNSY306A Implement a propagation plan
AHCNSY307A Operate fertigation equipment
AHCNSY401A Plan a growing-on program
AHCNSY402A Plan a propagation program

OCCUPATIONAL HEALTH AND SAFETY
AHCOHS101A Work safely
AHCOHS201A Participate in OHS processes
AHCOHS301A Contribute to OHS processes
AHCOHS401A Maintain OHS processes
AHCOHS501A Manage OHS processes
BSBOHS504B Apply principles of OHS risk management
BSBOHS506B Monitor and facilitate the management of hazards associated with plant

ORGANIC PRODUCTION
AHCORG101A Support organic production

AHCORG401A Manage biodynamic production
AHCORG402A Manage organic livestock production
AHCORG403A Manage organic soil improvement
AHCORG501A Develop an organic management plan
AHCORG502A Prepare the enterprise for organic certification

PLANTS
AHCPCM201A Recognise plants
AHCPCM202A Collect, prepare and preserve plant specimens
AHCPCM301A Implement a plant nutrition program
AHCPCM302A Provide information on plants and their culture
AHCPCM303A Identify an unknown plant specimen
AHCPCM401A Recommend plants and cultural practices
AHCPCM402A Develop a soil health and plant nutrition program
AHCPCM501A Diagnose plant health problems
AHCPCM502A Collect and classify plants
AHCPCM601A Develop and implement a plant health management strategy

PARKS AND GARDENS
AHCPGD101A Support gardening work
AHCPGD201A Plant trees and shrubs
AHCPGD202A Prepare and maintain plant displays
AHCPGD203A Prune shrubs and small trees
AHCPGD204A Transplant small trees
AHCPGD205A Prepare a grave site
AHCPGD206A Conduct visual inspection of park facilities
AHCPGD301A Implement a plant establishment program
AHCPGD302A Plan and maintain plant displays
AHCPGD303A Perform specialist amenity pruning
AHCPGD304A Implement a landscape maintenance program
AHCPGD305A Conduct operational inspection of park facilities
AHCPGD306A Implement a maintenance program for an aquatic environment
AHCPGD401A Design plant displays
AHCPGD402A Plan a plant establishment program
AHCPGD501A Manage plant cultural practices
AHCPGD502A Plan the restoration of parks and gardens
AHCPGD503A Manage parks and reserves
AHCPGD504A Develop and implement a streetscape management plan
AHCPGD505A Maintain a professional gardening standard
AHCPGD506A Conduct comprehensive inspection of park facilities

PRODUCTION HORTICULTURE
AHCPHT101A Support horticultural production
AHCPHT201A Plant horticultural crops
AHCPHT202A Carry out canopy maintenance
AHCPHT203A Support horticultural crop harvesting
AHCPHT204A Undertake field budding and grafting
AHCPHT205A Carry out postharvest operations
AHCPHT206A Handle and move mushroom boxes
AHCPHT207A Perform mushroom substrate process tasks

AHCPHT208A Water mushroom crops
AHCPHT301A Carry out a crop regulation program
AHCPHT302A Coordinate horticultural crop harvesting
AHCPHT303A Implement a post-harvest program
AHCPHT304A Harvest horticultural crops mechanically
AHCPHT305A Regulate crops
AHCPHT306A Establish horticultural crops
AHCPHT307A Prepare raw materials and compost the feedstocks
AHCPHT308A Prepare value-added compost-based products
AHCPHT309A Supervise mushroom substrate preparation
AHCPHT401A Assess olive oil for style and quality
AHCPHT402A Develop a crop regulation program
AHCPHT403A Develop harvesting and processing specifications to produce an olive oil
AHCPHT404A Implement and monitor a horticultural crop harvesting program
AHCPHT405A Manage mushroom substrate preparation
AHCPHT406A Control Phase II mushroom substrate process
AHCPHT407A Manage mushroom crop development
AHCPHT501A Develop production plans for crops
AHCPHT502A Develop a horticultural production plan
AHCPHT503A Manage a controlled growing environment

POULTRY
AHCPLY201A Collect store and handle eggs from breeder flocks
AHCPLY202A Maintain health and welfare of poultry
AHCPLY203A Set up shed for placement of day-old chickens
AHCPLY204A Collect and pack eggs for human consumption
AHCPLY301A Artificially inseminate birds
AHCPLY302A Brood poultry
AHCPLY303A Identify and sex birds
AHCPLY304A Incubate eggs
AHCPLY305A Beak trim chickens
AHCPLY306A Clean and fumigate intensive production sheds
AHCPLY401A Supervise free range poultry operations

PEST MANAGEMENT
AHCPMG201A Treat weeds
AHCPMG202A Treat plant pests, diseases and disorders
AHCPMG301A Control weeds
AHCPMG302A Control plant pests, diseases and disorders
AHCPMG303A Maintain biological cultures
AHCPMG304A Release biological agents
AHCPMG401A Define the pest problem in a local area
AHCPMG402A Develop a pest management action plan within a local area
AHCPMG403A Develop monitoring procedures for the local pest management strategy
AHCPMG404A Coordinate the local pest management strategy
AHCPMG405A Implement pest management action plans
AHCPMG406A Investigate a reported pest treatment failure
AHCPMG407A Monitor and evaluate the local pest management action plan
AHCPMG408A Control weeds, pests and or diseases
AHCPMG501A Coordinate the pest management strategy in a regional or broader context

AHCPMG502A Define the pest problem in a regional or broader context
AHCPMG503A Develop a strategy for the management of target pests
AHCPMG504A Develop a system for monitoring the pest management strategy
AHCPMG505A Evaluate the pest management strategy
AHCPMG506A Manage the implementation of legislation
AHCPMG601A Develop a plant pest survey strategy
AHCPMG602A Develop a plant pest destruction strategy

PORK PRODUCTION
AHCPRK201A Care for health and welfare of pigs
AHCPRK202A Care for weaner and grower pigs
AHCPRK203A Move and handle pigs
AHCPRK301A Pregnancy test pigs
AHCPRK302A Treat rectal prolapse in pigs
AHCPRK303A Artificially inseminate pigs
AHCPRK304A Mate pigs and monitor dry sow performance
AHCPRK401A Implement a feeding strategy for pig production

SOIL AND WATER CONSERVATION
AHCSAW201A Conduct erosion and sediment control activities
AHCSAW301A Construct conservation earthworks
AHCSAW302A Implement erosion and sediment control measures
AHCSAW401A Set out conservation earthworks
AHCSAW402A Supervise on-site implementation of conservation earthworks
AHCSAW501A Design control measures and structures
AHCSAW502A Plan erosion and sediment control measures
AHCSAW503A Plan conservation earthworks

SHEARING
AHCSHG201A Crutch sheep
AHCSHG202A Assist in preparing for shearing and crutching
AHCSHG203A Shear sheep to novice level
AHCSHG204A Shear sheep to improver level
AHCSHG205A Grind combs and cutters for machine shearing
AHCSHG206A Prepare handpiece and downtube for machine shearing
AHCSHG207A Shear goats
AHCSHG208A Shear alpacas
AHCSHG209A Support alpaca shearing operations
AHCSHG301A Prepare livestock for shearing
AHCSHG302A Prepare combs and cutters for machine shearing
AHCSHG303A Maintain and service shearing handpieces
AHCSHG304A Shear sheep to professional level
AHCSHG305A Maintain consistent shearing performance
AHCSHG306A Carry out post-shearing procedures
AHCSHG307A Plan and prepare for alpaca shearing
AHCSHG401A Apply advanced shearing techniques
AHCSHG402A Conduct equipment experting for machine shearing
AHCSHG403A Account for shearing shed supplies
AHCSHG404A Manage shearing and crutching operations
AHCSHG405A Arrange employment for shearing operations

AHCSHG406A Prepare shearing team wages
AHCSHG407A Oversee and instruct shed staff

SOILS AND MEDIA
AHCSOL201A Determine basic properties of soil growing media
AHCSOL301A Prepare growing media
AHCSOL302A Construct a soil profile
AHCSOL401A Sample soils and interpret results
AHCSOL402A Develop a soil use map for a property
AHCSOL403A Prepare acid sulphate soil management plans
AHCSOL404A Supervise acid sulphate soil remediation and management projects
AHCSOL501A Monitor and manage soils for production

SEED PROCESSING
AHCSPO301A Operate a screen cleaner
AHCSPO302A Operate an indent cylinder
AHCSPO303A Operate a gravity table
AHCSPO304A Operate seed modification machinery
AHCSPO305A Operate seed treatment machinery
AHCSPO306A Operate specialised seed processing machinery
AHCSPO307A Handle, package and store commercial quantities of seed
AHCSPO308A Sample seed before and after processing

TOOLS AND EQUIPMENT
MEM18001C Use hand tools
MEM18002B Use power tools
AHCVIT201A Operate hydraulic pruning equipment
AHCTEQ301A Install and terminate extra low voltage wiring systems
MEM05004C Perform routine oxy acetylene welding
MEM05007C Perform manual heating and thermal cutting
MEM05012C Perform routine manual metal arc welding
MEM05015C Weld using manual metal arc welding process
MEM05017C Weld using gas metal arc welding process
MEM05019C Weld using gas tungsten arc welding process
MEM09002B Interpret technical drawing
MEM18003C Use tools for precision work

TURF MANAGEMENT
AHCTRF101A Support turf work
AHCTRF201A Assist with turf construction
AHCTRF202A Prepare turf surfaces for play
AHCTRF203A Renovate grassed areas
AHCTRF204A Support turf establishment
AHCTRF301A Construct turf playing surfaces
AHCTRF302A Establish turf
AHCTRF303A Implement a grassed area maintenance program
AHCTRF304A Monitor turf health
AHCTRF305A Renovate sports turf
AHCTRF401A Develop a sports turf maintenance program
AHCTRF402A Plan and implement sports turf renovation

AHCTRF501A Plan the establishment of sports turf playing surfaces

VERTEBRATE PESTS
AHCVPT201A Clear features that harbour pest animals
AHCVPT202A Muster pest animals
AHCVPT203A Use firearms to humanely destroy animals
AHCVPT301A Conduct fumigation of vertebrate pests
AHCVPT302A Implement vertebrate pest control program
AHCVPT303A Survey pest animals
AHCVPT304A Conduct vertebrate pest activities from aircraft
AHCVPT305A Tag and locate Judas animals
AHCVPT306A Apply animal trapping techniques

WATER
AHCWAT201A Set up, operate and maintain water delivery system
AHCWAT301A Monitor and operate water treatment processes
AHCWAT501A Design water treatment systems
AHCWAT502A Manage water systems

WOOL
AHCWOL101A Support woolshed activities
AHCWOL201A Pen sheep
AHCWOL202A Perform board duties
AHCWOL203A Carry out wool pressing
AHCWOL204A Undertake basic skirting of alpaca fleece
AHCWOL301A Appraise wool using industry descriptions
AHCWOL302A Class fleece wool
AHCWOL303A Prepare wool based on its characteristics
AHCWOL304A Prepare fleece wool for classing
AHCWOL305A Prepare skirtings and oddments
AHCWOL306A Supervise clip preparation
AHCWOL307A Document a wool clip
AHCWOL308A Prepare facilities for shearing and crutching
AHCWOL309A Apply quality assurance procedures in wool preparation
AHCWOL310A Press wool for a clip
AHCWOL311A Perform shed duties
AHCWOL312A Class goat fibre
AHCWOL313A Class alpaca fleece
AHCWOL401A Determine wool classing strategies
AHCWOL402A Use individual fleece measurements to prepare wool for sale
AHCWOL403A Prepare for, implement and review wool harvesting clip preparation and classing
AHCWOL404A Establish work routines and manage wool harvesting and preparation staff

WORK
AHCWRK101A Maintain the workplace
AHCWRK102A Prepare for work
AHCWRK201A Observe and report on weather
AHCWRK202A Observe environmental work practices
AHCWRK203A Operate in isolated and remote situations
AHCWRK204A Work effectively in the industry
AHCWRK205A Participate in workplace communications
AHCWRK206A Observe enterprise quality assurance procedures

AHCWRK207A Collect and record production data
AHCWRK208A Provide information on products and services
AHCWRK210A Participate in environmentally sustainable work practices
THTFAT01B Provide on-site information and assistance
TLID107C Shift materials safely using manual handling methods
AHCWRK301A Collect samples for a rural production or horticulture monitoring program
AHCWRK302A Monitor weather conditions
AHCWRK303A Respond to emergencies
AHCWRK304A Respond to rescue incidents
AHCWRK305A Coordinate work site activities
AHCWRK306A Comply with industry quality assurance requirements
AHCWRK307A Develop and apply fertiliser and soil ameliorant product knowledge
AHCWRK308A Handle bulk materials in storage area
AHCWRK309A Maintain and monitor environmental work practices
AHCWRK310A Provide on-job training support
AHCWRK311A Conduct site inspections
CPPSIS4005A Collect basic GPS data
MEM09002B Interpret technical drawing
PUAEMR006A Treat risk at an operational level
PUAEMR007A Conduct risk assessment
FPICOT3202A Navigate in remote or trackless areas
AHCWRK401A Implement and monitor quality assurance procedures
AHCWRK402A Provide information on issues and policies
AHCWRK403A Supervise work routines and staff performance
AHCWRK404A Implement the compliance of legislation
BSBFLM404A Lead work teams
MSL913002A Plan and conduct laboratory/field work
PSPPM402B Manage simple projects
PSPPOL404A Support policy implementation
SRXGRO002A Deal with conflict
TAADEL301C Provide training through instruction and demonstration of work skills
AHCWRK501A Plan, implement and review a quality assurance program
AHCWRK502A Collect and manage data
AHCWRK503A Prepare reports
AHCWRK504A Assess new industry developments
AHCWRK505A Manage trial and or research material
AHCWRK507A Implement professional practice
AHCWRK508A Interpret legislation
AHCWRK509A Provide specialist advice to clients
AHCWRK510A Audit site operations
AHCWRK511A Develop workplace policy and procedures for sustainability
PRMWM45B Develop site safety plan
PSPPM502B Manage complex projects
PSPPM503B Close complex projects
SRXINU004A Promote compliance with laws and legal principles
AHCWRK601A Monitor projects in a program
AHCWRK602A Lead and manage community or industry organisations
AHCWRK603A Design and conduct a field-based research trial
BSBHR604A Manage employee relations
BSBMGT617A Develop and implement a business plan

BSBSUS501A Develop workplace policy and procedures for sustainability
PSPPOL603A Manage policy implementation
PUAFIR601A Develop and administer enterprise policy, procedures and practices
SRXGOV001B Participate as a member of an effective board of an organisation
SRXGOV002B Undertake the role of individual director of an organisation
SRXGOV003B Undertake the role of chairperson at a board meeting
SRXGOV004B Work effectively with the board of an organisation

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