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Australian Government
Department of Defence

LANDSCAPE MANAGEMENT MANUAL



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Landscape Management Manual

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Sponsor:

Assistant Secretary Environment & Engineering

Developer:

Directorate of Environment and Heritage Policy Development

Cancellations:

The Landscape Management Manual (LMM) replaces the following policies and documents:

- a) in conjunction with Chapter 7 of the [Environment and Heritage Manual](#) (EHM), Chapter 6 of the Manual for Fire Protection Engineering (MFPE)
- b) in conjunction with Chapters 4 and 5 of the EHM, the Biosecurity and Overabundant Native Species (BONS) Policy and Guidelines
- c) National Guidelines on the Use of Lethal Control Techniques in the Management of Animal Populations on the Defence Estate
- d) Sustainability Monitoring and Reporting Policy
- e) Defence National Wildlife Hazard Management Strategy 2013.

¹ <https://www.legislation.gov.au/Series/C1968A00063>

² <https://www.legislation.gov.au/Series/C2004A04868>

³ <https://www.legislation.gov.au/Series/C2004A03712>

FOREWORD

The Landscape Management Manual (LMM) provides policy implementation direction and minimum requirements for undertaking certain land management activities in line with the Department of Defence's (Defence's) legislative obligations and stewardship goals, as articulated in the [Defence Environmental Policy](#) and [Defence Environmental Strategy 2016-2036](#).

This manual provides both specific instructions and reference to guidance materials, to support implementation of the [Environment and Heritage Manual](#) (EHM), specifically the following chapters:

Chapter 4: Domestic biosecurity

Chapter 5: Native species and ecological communities

Chapter 6: Soil management

Chapter 7: Bushfire management.

The LMM applies to all Defence personnel, contractors, consultants or outsourced service providers (through the terms of their contract) undertaking work on behalf of Defence across all *Defence properties*.

All other policy standards and guidelines relevant to the safe and responsible conduct of activities in this manual must be observed.

The LMM will be reviewed as necessitated by business requirements with a maximum of five years between reviews. Amendments may be made at any time commencing three months after the date of issue.

Definitions that apply to this manual (denoted by *italics*) are found in the [Glossary](#).



AMENDMENTS

Proposals for amendment of the Landscape Management Manual may be sent to:

Land Management
Directorate of Environment and Heritage Policy Development
Environment and Engineering Branch
Security and Estate Group
Department of Defence
dehpd.policy@defence.gov.au

Amendment number	Amendment	Amendment type	Effective date
AL1	Amendment to links and policy hierarchy wording and graph	Minor	21/04/2022



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CHAPTER 1

BACKGROUND AND CONTEXT

DEFENCE LANDSCAPE MANAGEMENT PRINCIPLES

- 1.1 Defence will fulfil its obligations to sustainably manage the landscape by:
- a. Applying an *integrated landscape management* approach to ensure that *natural landscapes* under its stewardship comprise healthy, functioning ecosystems, and ensure a fit-for-purpose Defence estate.
 - b. Implementing a sustainable management approach, including resource efficiency and *best practice* approaches in Defence activities.
 - c. Using a proactive, risk based approach to inform sustainable environmental management decisions.
 - d. Balancing short-term objectives to fulfil long-term landscape management goals.
 - e. Collaborating with relevant stakeholders, including local landholders and local, state, territory and Commonwealth government and non-government agencies, to address shared risks to the economy, environment and community in a cooperative manner to achieve mutually beneficial management efficiencies.
 - f. Collaborating with and increasing the direct involvement of Aboriginal and Torres Strait Islander people in relevant aspects of land and sea management.
 - g. Employing an evidence-based approach that relies on the collection, storage and analysis of data.
 - h. Undertaking periodic reviews of policies, procedures and outcomes to facilitate continuous improvement.
- 1.2 An overview of the Defence Environmental Management System and policy hierarchy as it relates to the LMM is presented in Figure 1.1.

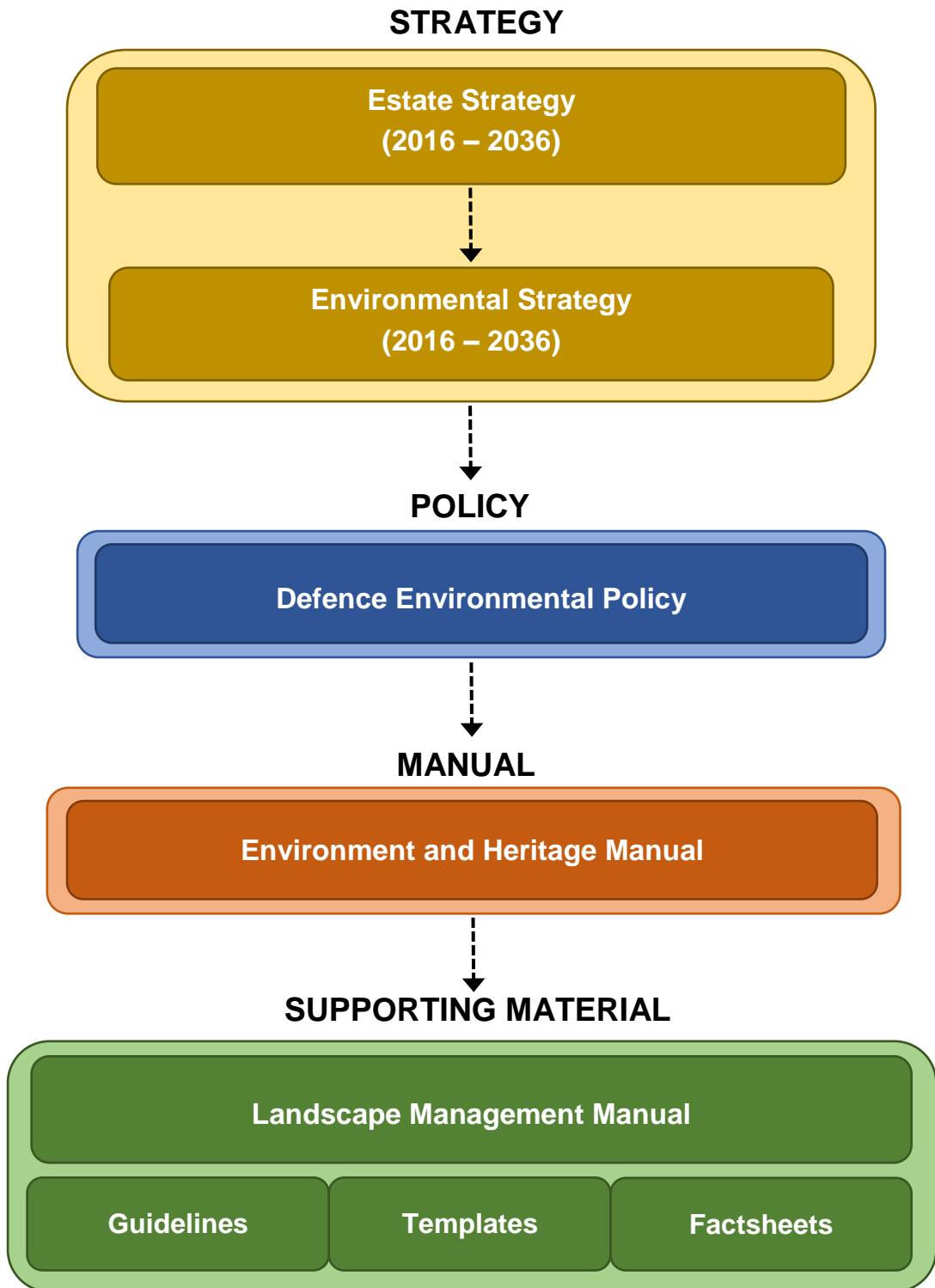


Figure 1-1: Defence Environmental Management System and policy hierarchy as it relates to the LMM.

AUSTRALIAN GOVERNMENT LEGISLATION, AGREEMENTS AND STRATEGIES

1.3 Under the *Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)*, Defence is required to protect and manage [Matters of National Environmental Significance](#) (MNES) and ‘the environment’ as a whole. Defence also has specific obligations under other national legislation, international agreements/arrangements, Commonwealth policies and strategies that relate to landscape management including the following:

a. General:

- (1) *Public Governance, Performance and Accountability Act 2013*
- (2) *Civil Aviation Act and Regulations*, including Manual of Standards (MOS) Part 139
- (3) *Workplace Health and Safety (WHS) Act and Regulations, 2011*
- (4) Engage Early – guidance for proponents on *best practice* Indigenous engagement of environmental assessments under the *EPBC Act, 2016*.

b. Domestic biosecurity:

- (1) *Biosecurity Act 2015*
- (2) National Weeds Strategy
- (3) Australian Pest Animal Strategy
- (4) Intergovernmental Agreement on Biosecurity.

c. Native species and communities:

- (1) Threatened Species Strategy (2021 – 2031)
- (2) Australia’s Strategy for Nature (2019 – 2030)
- (3) Native Vegetation Framework
- (4) Wildlife Conservation Plan for Seabirds
- (5) Japan-Australia Migratory Bird Agreement
- (6) China-Australia Migratory Bird Agreement
- (7) Republic of Korea-Australia Migratory Bird Agreement
- (8) Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention)
- (9) Ramsar Convention on Wetlands

(10) Agreement on the Conservation of Albatrosses and Petrels (ACAP).

d. Soil management:

(1) National Soil Strategy.

e. Bushfire management:

(1) National Bushfire Management Policy Statement for Forests and Rangelands.

1.4 Defence and its contractors must operate to comply with all Commonwealth legislation. Reference can be made to the Defence Legal Obligations and Compliance Register (LOCR).

1.5 There are also circumstances where state or territory law may apply to activities of Defence and its contractors. Whether state or territory law applies to Defence and its contractors is a complex issue that includes consideration of the terms and subject matter of the specific legislation and various constitutional issues. Initial guidance regarding applicability of state and territory environmental management laws should be sought from relevant policy owners. If the legal position is not clear then policy owners will contact Defence Legal (via email to dl.webmanager@defence.gov.au) for resolution (which may involve referral to the Australian Government Solicitor on constitutional matters, as required by the Legal Services Direction 2017).

KEY ROLES AND RESPONSIBILITIES

1.6 All Group Heads and Service Chiefs are responsible for ensuring that Defence's Environmental Policy is complied with by their respective Group or Service and that specific Group or Service procedural guidance is available to support its implementation.

1.7 Key roles and responsibilities with respect to the implementation of the LMM are informed by Defence documents, including:

- a. Joint Framework for Base Accountabilities (JFBA)
- b. E&IG Information Management (IM) Framework
- c. Team descriptions, such as SDD Team Descriptions, SDD Organisational RACI (SDD, Property functions, WHS Functions)
- d. [Defence Training Area Management Manual](#)
- e. Defence Instructions
- f. Applicable contracts and lease arrangements
- g. GEMS business processes.

DEFENCE RISK MANAGEMENT

1.8 Risk management forms the basis for decision making and prioritisation of actions on the Defence estate. The contents of this manual provide guidance to undertake *specialist risk management* consistent with the [Defence Risk Management Framework](#) and [Defence Risk Management Policy](#). The framework enables Groups and Services to design risk management practices for their business context and legislative requirements. Group and Service risk management plans and procedures should be consistent with the framework.

1.9 The [Garrison and Estate Management System](#) (GEMS) provides a centralised system for documenting risks consistent with the Defence Risk Management Framework. The recording of risks, their context and management strategies within GEMS replaces the requirement for document based plans, except in circumstances where there is a specific requirement for detailed justification and documentation of a course of action.

GARRISON AND ESTATE MANAGEMENT SYSTEM

1.10 GEMS is the mandated system for estate management and the management of specialist risks covered by this manual.

1.11 GEMS provides an integrated system that can track and report commercial and non-commercial treatments and tasks related to managing risks, as well as relationships between risks and other elements of the estate.

SPATIAL REFERENCE DATA

1.12 Spatial data requirements for land management activities must be in accordance with the Defence [Spatial Data Management Plan](#) (SDMP).

1.13 The SDMP recognises three primary environmental data types - GEMS spatial data, reference data and *monitoring*/transactional data. Reference data for core requirements of this manual, such as soil and vegetation mapping, should be sourced from state or territory authorities or where such mapping is not available, mapping by Commonwealth authorities.

1.14 Any mapping of matters covered by 1.13 should be undertaken using the protocols of the relevant authority and provided to that authority as updates to the dataset.

PERFORMANCE OUTCOMES

LMM policy interpretation, monitoring and evaluation

1.15 Where required, clarification of provisions in the LMM must be sought from the Directorate of Environment and Heritage Policy Development (dehpd.policy@defence.gov.au) in the first instance.

1.16 Feedback on the LMM and associated supporting documents will be used to inform future versions of this manual. Submit feedback on any aspect of the LMM such as accuracy, ease of understanding, comprehensiveness, accessibility and implementation to dehpd.policy@defence.gov.au.

CHAPTER 2

NON-ESTABLISHED PESTS, WEEDS AND PATHOGENS

PURPOSE AND SCOPE

2.1 To provide a framework to prevent the establishment of *pests*, *weeds* and *pathogens* that impact Defence capability, human health, economy and the environment. The framework aims to:

- a. prevent *outbreaks* of *non-established pests*, *weeds* or *pathogens* at *Defence properties* and
- b. identify and respond rapidly, effectively and safely to *non-established pests*, *weeds* or *pathogens outbreaks* at *Defence properties*.

2.2 Information on the management of *established pests*, *weeds* and *pathogens* is provided in [Chapter 3 – Established pests, weeds and pathogens](#).

2.3 Implementation of this chapter may contribute towards international border quarantine *biosecurity* inspections and activities, which are subject to the Memorandum of Understanding (MOU) between the Department of Agriculture, Water and the Environment (DAWE) and the Department of Defence, in conjunction with DEFLOGMAN Part 2, Vol 8 – Chapter 7 Defence compliance with Australian biosecurity measures.

IDENTIFICATION OF INCURSION PATHWAYS

2.4 Understanding the likely *incursion* pathways to a property is important for developing effective *outbreak* prevention actions. *Incursion* pathways are the means by which a *pest*, *weed* or *pathogen* moves from one location to another. This will vary depending on the type of *pest*, *weed* or *pathogen*, and property attributes such as disturbed areas and types of activities. *Incursion* pathways are commonly a result of human activity and in a Defence context can include:

- a. movement of vehicles and equipment (e.g. via mud and soil containing *weeds* and seeds)
- b. movement of conveyances (e.g. via hull or sea chest biofouling or ballast water exchange, aircraft etc.)
- c. importing non-sterilised building material and landscape products (e.g. turf, soil, mulch etc. containing *weeds*, seeds and *pathogens*)
- d. movement of personnel, personal equipment, animals and animal products.

2.5 *Incursion* pathways may also include natural dispersion or migration from surrounding areas. Natural disasters (e.g. fire, floods) and weather events can also spread *pests*, *weeds* and *pathogens* into new areas or create better conditions for establishment.

IDENTIFICATION OF KEY RISK SPECIES

2.6 Once potential pathways have been identified, *non-established pests*, *weeds* and *pathogens* that could be introduced via these pathways are then identified. The most relevant *local authority*, state or territory and Commonwealth lists of priority *non-established pests*, *weeds*, and *pathogens*, must be used as the primary source to determine species to be included in the Defence *Biosecurity Register* in GEMS.

2.7 The likelihood of spread and establishment of key species must be determined along known and existing pathways. This may depend on:

- a. frequency of pathway (how regularly the pathway is active)
- b. invasiveness of the *pest*, *weed* or *pathogen* (ability to disperse and establish)
- c. abundance of the species at the pathway origin
- d. similarity of climate and habitat at the origin and receiving property
- e. level of disturbance at the receiving property.

2.8 The consequences of non-established key *pests*, *weeds* and *pathogens* establishing must be assessed against impact descriptors in the risk framework, and as a minimum take into account:

- a. any potential impact descriptors in national, state and territory advisory lists for specific *pests*, *weeds* and *pathogens*
- b. consequences of previous *outbreaks* at the property or properties of a similar type/location
- c. environmental sensitivities or values at the receiving property
- d. potential impact to business continuity.

2.9 A GEMS risk record must be created describing the suite of high risk species and responses including preventative controls and the Biosecurity Incursion Response Protocol.

PREVENTATIVE CONTROLS

2.10 Preventative controls must be determined through risk assessment processes and in accordance with DEFLOGMAN Part 2, Vol 8 – Chapter 7 Defence compliance with Australian biosecurity measures.

2.11 *Biosecurity* risk management considerations are described in the Pests, weeds and pathogens guideline.

2.12 The owner of the control and pathway to which a preventative control applies must be identified and consulted regarding the implementation of the control and the outcome documented in the GEMS risk record.

- 2.13 Controls relevant to risks identified for the property must be documented in the GEMS risk record and linked to relevant species records in the Defence *Biosecurity Register*.
- 2.14 All *monitoring* data must be recorded in GEMS.
- 2.15 Response actions must be undertaken when there is evidence or a reasonable suspicion that a non-established species has been detected on the property.
- 2.16 The immediate response to the detection of any *non-established pest, weed or pathogen species* is to:
- Delineate the area (including any other properties or associated infrastructure, such as wharves, identified through pathway analysis) and confirm identity of *pest, weed or pathogen*.
 - Seek to eradicate as soon as possible after positive identification.
 - Implement procedures described in a Biosecurity Incursion Response Protocol where in place.
 - Complete a GEMS environmental incident record.
 - Complete any required updates to the Defence *Biosecurity Register*.

BIOSECURITY INCURSION RESPONSE PROTOCOL

- 2.17 Biosecurity Incursion Response Protocols must be developed for bases, training areas and other enablers as described in the [2016/36 Defence Estate Strategy](#), excluding low risk urban properties. Other properties are included as part of the pathway analysis in the development of these plans.
- 2.18 A Biosecurity Incursion Response Protocol must include the following:
- Document properties linked to the site of incursion where the species may also be present and require eradication.
 - Nominate authorities to be contacted if key risk species are detected, including where external plans are already in place.
 - Nominate relevant Defence personnel who will inform others, including state, territory or Commonwealth agencies as required.
- 2.19 Biosecurity Incursion Response Protocols must be documented in GEMS.

Co-ordinated and facilitated management actions

- 2.20 Wherever possible, Defence should implement actions guided by externally co-ordinated programs for *monitoring* or response to *incursions*.

2.21 Where possible, Defence should facilitate access for *external* parties undertaking *monitoring* and control programs for *non-established pests, weeds and pathogens*. Access and use of the Defence estate by *external authorities* must be in accordance with the [Defence Estate Civil Use Policy](#).

CHAPTER 3

ESTABLISHED PESTS, WEEDS AND PATHOGENS

PURPOSE AND SCOPE

3.1 To provide a framework to manage risks to Defence and the wider community from *pests*, *weeds* and *pathogens* that have become established on the Defence estate.

3.2 Information on the management of *non-established pests*, *weeds* and *pathogens* is provided in [Chapter 2 – Non-established pests, weeds and pathogens](#).

3.3 Implementation of this chapter may contribute towards international border quarantine biosecurity inspections and activities, which are subject to the Memorandum of Understanding (MOU) between the Department of Agriculture, Water and the Environment (DAWE) and the Department of Defence.

DEFENCE BIOSECURITY REGISTER

3.4 Defence must record *pests*, *weeds* and *pathogens* of concern that occur on its estate in the Defence *Biosecurity Register* in GEMS. This list must be prepared by assessing relevant *local authority*, state or territory and Commonwealth lists of priority *pests*, *weeds* and *pathogens*.

3.5 Species known to cause nuisance or harm to Defence operations and assets must also be recorded in the Defence *Biosecurity Register*.

RISK ASSESSMENT

3.6 A risk assessment must be carried out, in accordance with the [Defence Risk Management Framework](#), for *pests*, *weeds* and *pathogens* known to occur on the property.

3.7 The outcome of the risk assessment must be recorded in GEMS.

3.8 Risk management considerations are described in the Pests, weeds and pathogens guideline.

3.9 At a minimum, all risks assessed as carrying a high or above *inherent risk* must be reviewed annually.

RESPONSE MEASURES

3.10 Treatment methods must be in accordance with relevant state, territory and Commonwealth codes of practice and standard operating procedures.

3.11 The Pests, weeds and pathogens guideline provides a framework for determining the degree of management complexity and documentation requirements for typical *pest*, *weed* and *pathogen* risk management.

3.12 The use of lethal animal control as a management tool must be in accordance with [Chapter 4 – Lethal animal control](#).

3.13 The risk(s) associated with undertaking management action(s) will inform which internal and external stakeholders require consultation or notification prior to the action commencing.

Co-ordinated and facilitated management actions

3.14 Wherever possible Defence should implement actions guided by regionally co-ordinated programs using methods and timing that support wider initiatives to achieve regional benefits.

3.15 Wherever possible Defence should facilitate access for *external parties* undertaking *monitoring* and control programs for *established pests, weeds and pathogens*. Access and use of the Defence estate by *external parties* must be in accordance with the [Defence Estate Civil Use Policy](#).

Approval and licencing of management actions

3.16 All required approvals, licences and certifications for persons undertaking work, based on relevant Defence policies, other standards, codes of practice and agreements, including environmental impact assessments and Work, Health and Safety, must be in place before works commence.

Airfield wildlife hazard management

3.17 Aerodrome Wildlife Hazard Management Plans (AWHMP) must be developed for all Defence certified aerodromes.

3.18 AWHMP must be developed in accordance with the [Defence Aviation Safety Regulation](#) (DASR) 139 Aerodromes and the *Civil Aviation Act and Regulations*, including the Manual of Standards (MOS) Part 139.

3.19 AWHMPs must, as a minimum, address the criteria from MOS Part 139, Clause 17.04 - Preparation of a wildlife hazard management plan, which includes a description of reporting, mitigation and training requirements for implementation of the AWHMP.

3.20 Wildlife hazard risk assessments must be conducted for all Defence non-certified aerodromes and outcomes recorded in GEMS.

CHAPTER 4

LETHAL ANIMAL CONTROL

PURPOSE AND SCOPE

- 4.1 To provide guidance on the euthanasia of sick or injured animals to relieve pain or suffering.
- 4.2 To provide direction on the use of lethal animal control as a management tool in accordance with [Chapter 2 – Non-established pests, weeds and pathogens](#) and [Chapter 3 – Established pests, weeds and pathogens](#).

EUTHANASIA TO RELIEVE PAIN AND SUFFERING

- 4.3 Euthanasia to relieve pain and suffering of animals with *untreatable injuries* or illness/disease must be carried out as quickly and humanely as possible to minimise pain and suffering.
- 4.4 Methods used must be in accordance with the Standard Operating Procedures (SOP) – [General methods of Euthanasia under field conditions](#) and performed by persons competent in and qualified for the methods used, or under the direct supervision of a competent and qualified person. As long as these requirements are met, performing euthanasia should not be delayed by waiting for veterinary or expert intervention where this would prolong pain and suffering. In addition, when conducting euthanasia also consider:
- a. Health and safety risks including exposure to *zoonotic diseases*, physical and psychological trauma to the person administering euthanasia, as well as bystanders.
 - b. The mobility of the animal and the chance that delay may lead to further injury, harm or difficulty in finding its location.
- 4.5 Emergency provisions may be triggered in the case of suspected or confirmed [Emergency Animal Disease](#) (EAD) incidents (e.g. equine influenza, foot and mouth *disease*) or other mass animal euthanasia programs (e.g. such as that which may be required to relieve pain and suffering of animals with *untreatable injuries* or illness as a result of a catastrophic bushfire event). Under such circumstances veterinary or expert services must be engaged until the situation is resolved.
- 4.6 Where reasonable and practical to do so, provision for the care of animals with *treatable injuries* and/or dependent offspring may be made with an accredited facility, care group or individual, with appropriate licences and expertise.
- 4.7 Where 4.6 is not met, to prevent the inhumane death of dependent offspring, they must be euthanized using an appropriate method for the species and circumstances as per 4.4.

4.8 All legislative reporting requirements must be adhered to, including the requirement for [notification of death of EPBC Act listed species](#) within seven days of euthanasia. Notifications should be directed to the Director, [Directorate of Environmental Planning, Assessment and Compliance](#) (DEPAC).

LETHAL CONTROL FOR MANAGEMENT PURPOSES

4.9 Lethal animal control as a management action must only be carried out as a result of a process in accordance with [Chapter 2 – Non-established pests, weeds and pathogens](#) and [Chapter 3 – Established pests, weeds and pathogens](#).

4.10 Notwithstanding 4.9, reactive lethal control of animals that pose an imminent or serious safety risk may be conducted without prior planning, providing the requirements of this chapter are met.

4.11 All lethal animal control activities undertaken on the Defence estate must be conducted in accordance with the national SOPs and model Codes of Practice (COPs), developed by [PestSmart](#) and [AgriFutures Australia](#) for the Department of Agriculture, Water and the Environment (DAWE).

4.12 All appropriate licences and approvals must be obtained prior to commencing lethal animal control for management purposes. See [Chapter 6 – Fauna and flora licencing and permit requirements and ethics approvals](#) for further information.

4.13 The overall risk associated with lethal control as a management action should inform the requirement to communicate and engage with relevant external authorities. This should be documented in management plans as per the Pests, weeds and pathogens guideline.

4.14 No formal communication plan is required for activities where there is no document based management plan in place, however the same principles must be considered as per 4.13.

CARCASS DISPOSAL

4.15 Defence must minimise risks associated with *disease*, contamination, odour and attractants to scavengers including other *pest species*, by disposing of carcasses in accordance with relevant state and territory guidance material.

4.16 Wherever practical carcasses should be utilised.

4.17 Where an action may result in the commercial use of kangaroo carcasses, this must be undertaken in accordance with the [National code of practice for the humane shooting of kangaroos and wallabies for commercial purposes](#) and state or territory kangaroo management plans.

4.18 Where utilisation is not practical carcasses should be disposed of offsite.

4.19 Offsite possession, transport and disposal of animal carcasses should be conducted in accordance with the relevant state and territory requirements.

4.20 Where no disposal requirements exist and it is reasonable, practical and prudent to do so, carcasses may be disposed of through the established waste disposal processes or left in-situ.

4.21 Movement and collection of *EPBC Act* listed species carcasses must be in accordance with [Chapter 6 – Fauna and flora licencing and permit requirements and ethics approvals](#).

4.22 Where carcasses are disposed of onsite using burial pits, the location of burial pits on the Defence estate must be approved through a site selection process or similar process that ensures wherever possible ongoing use of the property and minimised environmental risks in accordance with the [Pollution Prevention Guideline Annex 1H – Solid Waste Storage and Handling](#).

4.23 All burial pits on the Defence estate must be recorded in GEMS as a Biosecurity Management Zone. As a minimum records must include information on:

- a. pit location
- b. the size and depth of the pit
- c. if the pit was lined and with what material
- d. the depth of the soil used to cover carcasses
- e. management implications of the burial pit, such as no dig, no surface traffic etc.

4.24 Where legacy burial pits are known to exist and are suspected of causing soil or water contamination, refer to the [Defence Contamination Management Manual](#) to assess and record a contamination site in GEMS, and contact the [Directorate of Contamination Assessment Remediation and Management](#) (DCARM).

4.25 Under certain circumstances cremation of carcasses on the Defence estate may be reasonable. Cremation must be conducted in accordance with [Pollution Prevention Guideline Annex 1G – Open Burning Grounds and Incineration](#) and any incident-specific requirements, such as [AUSVETPLAN Disposal Operational Manual](#).

CHAPTER 5

THREATENED SPECIES AND ECOLOGICAL COMMUNITIES

PURPOSE AND SCOPE

5.1 To provide a framework to undertake risk management programs where Defence has a potential impact on the survival of native threatened species or ecological community on the Defence estate.

5.2 Guidance material regarding [assessments, approvals, and Environmental Clearance Certificates \(ECCs\)](#) or actions that may require referrals under the *EPBC Act* are not covered by this manual and should be directed to [Directorate of Environmental Planning, Assessment and Compliance](#) (DEPAC).

MANAGEMENT APPROACH

5.3 Management approaches for threatened species and ecological communities vary according to:

- a. species/ecological community composition
- b. status
- c. distribution
- d. habitat values of the property
- e. land use
- f. specific requirements for managing certain threatened species and ecological communities that result from:
 - (1) facilities and infrastructure planning
 - (2) master planning
 - (3) zone planning
 - (4) a condition of development approval resulting from an Environmental Impact Assessment
 - (5) capability and training requirements.

5.4 Management of threatened species and ecological communities is guided by *EPBC Act* requirements including [recovery plans](#), [threat abatement plans](#) and protection of listed [critical habitat](#). Defence must not take an action that contravenes an *EPBC Act* [recovery plan](#) or a [threat abatement plan](#), where they exist.

5.5 *Threatened species and ecological communities* listed under the *EPBC Act* or state and territory legislation that are known or likely to occur on *Defence properties* must be recorded in the *Defence Biodiversity Register* in GEMS.

5.6 Defence preferentially manages habitat and ecosystems for all their constituent species and the processes that sustain them. This is primarily achieved through managing risks to biodiversity presented by [pests, weeds and pathogens](#) and [bushfire](#), as well as policy requirements to manage [environmental impacts](#).

5.7 A risk assessment should only be carried out for *threatened species and ecological communities* as per the Threatened species and ecological communities guideline.

5.8 A risk management process need not result in the prescription of management actions, but where high or above risks to a species or ecological community exist, practical and reasonable management actions must be documented in the Risk Register in GEMS and conducted accordingly.

5.9 Notwithstanding 5.8, beneficial programs that can be practically delivered to benefit other threatened species are not precluded by this chapter.

MONITORING THREATENED SPECIES AND ECOLOGICAL COMMUNITIES

5.10 Where *monitoring* programs are identified as part of a risk management program for *threatened species and ecological communities*, *thresholds* must be identified that trigger specific management actions.

5.11 Any *monitoring* conducted must take into account relevant [EPBC survey guidelines for nationally threatened species](#) and applicable state and territory survey guidelines.

5.12 Mapping, *monitoring* or surveys of ecological communities should be undertaken using the methodology of the relevant state or territory, to enable Defence data to be incorporated into the relevant state or territory dataset.

5.13 Where possible *monitoring of threatened species and ecological communities* should be achieved through *facilitated management actions* that support regional, state, territory or national programs. Access and use of the Defence estate by *external parties* must be in accordance with the [Defence Estate Civil Use Policy](#).

5.14 All appropriate licences and approvals must be obtained prior to commencing *monitoring* or surveys. See [Chapter 6 – Fauna and flora licencing and permit requirements and ethics approvals](#) for further information.

5.15 All *monitoring* data must be recorded in GEMS.

CHAPTER 6

FAUNA AND FLORA LICENCING AND PERMIT
REQUIREMENTS AND ETHICS APPROVALS

PURPOSE AND SCOPE

6.1 To provide specific direction on licencing and *permit* requirements and ethics approvals for undertaking activities requiring interactions with native fauna and flora on the Defence estate.

6.2 This chapter does not contain guidance on Defence's internal [Environmental Impact Assessment](#) process, except to identify scenarios where actions not covered by existing controls may require an *Environmental Clearance Certificate* (ECC).

LICENCING AND PERMIT REQUIREMENTS

6.3 Activities, such as *wildlife* research, native species management and some *monitoring* activities, may represent actions affecting the whole of environment on Commonwealth land or actions affecting Matters of National Environmental Significance under the *EPBC Act*.

6.4 Defence requires *EPBC Act permits* for some actions affecting listed fauna and flora.

6.5 Defence must not seek state and territory *permits* where *EPBC Act* permit processes prevail over state or territory requirements. Initial advice regarding applicability of state and territory environmental management laws should be sought from relevant policy owners.

6.6 Many routine activities manage environmental impacts through existing Defence controls such as Standing Orders, Standard Operating Procedures (SOPs), Defence management plans and instructions.

6.7 Where an action is not covered by existing controls and there is potential for an adverse environmental impact to occur, approval through an *Environmental Clearance Certificate* (ECC) will be required.

6.8 ECCs are a Defence instrument for undertaking self-assessment of actions that affect the whole of environment on Commonwealth land, inclusive of fauna and flora. An ECC provides a record that the environmental risks of an action have been considered and will often specify environmental protection measures that must be implemented in order to ensure potentially adverse environmental impacts are appropriately managed and prevent triggering further legal requirements.

6.9 Where there is potential for an action to cause adverse environmental impacts and an *EPBC Act* permit (Part 13, Subdivision B – Permit system) is not required and the action is not covered by existing controls, an ECC should be used to authorise activities that would otherwise require an equivalent licence or *permit* in adjoining jurisdictions. For guidance on jurisdictional issues refer to provision 1.4 and 1.5 of this manual.

6.10 Where required, Defence contractors should seek the appropriate state or territory *permit* for the possession or transport of *wildlife* on state or territory land.

6.11 Where required, Defence contractors should seek the appropriate state or territory *permit* for the disposal of *wildlife* carcasses on state or territory owned land or at state or territory managed facilities.

6.12 Defence and state and territory jurisdictions should aim to establish a Memoranda of Understanding (MOU) or another form of arrangement, which set out mutual understandings concerning the need for licensing and/or *permits* in specific circumstances with shared responsibilities or interests. Advice on and clearance of MOUs or other forms of arrangements must be sought from relevant policy owners who will seek clearance from Defence Legal.

6.13 MOUs or other forms of arrangements should be structured so that they cannot be construed as legally binding instruments, but rather as a reflection of a non-legally binding understanding between the relevant state or territory and Defence as to the particular subject matter.

6.14 Where lease agreements require state or territory licences and/or *permits*, these must be obtained.

EPBC ACT PERMITS

6.15 A [permit](#) may be required under Part 13, Subdivision B – Permit system to kill, injure, take, trade, keep or move an *EPBC Act* listed species or ecological community, a listed migratory species, or a listed marine species in or on a Commonwealth area. Initial advice should be sought from relevant policy owners regarding exemptions.

6.16 Defence owned and leased properties are considered Commonwealth areas under Part 23 of the *EPBC Act*.

6.17 All legislative reporting requirements must be adhered to, including the requirement for notification of activities affecting listed species or ecological communities in or on a Commonwealth area. This includes unintentional death, injury, trading, taking, keeping or moving of a member of a listed threatened species (except a conservation dependent species), a member of a listed threatened ecological community, all cetacean (whale, dolphin or porpoise) species, a member of a listed migratory species, or a member of a listed marine species in or on a Commonwealth area, where an activity was not authorised by a *permit*. Notifications should be directed to the Director, [Directorate of Environmental Planning, Assessment and Compliance](#) (DEPAC).

6.18 *External parties* require an [access to biological resource permit](#), under Part 8A of the *EPBC Regulations 2000*, to collect and remove *biological resources* for the purpose of research and development of any genetic resources, or biochemical compounds, comprising or contained in *biological resources*. This requires written permission from Defence as the Access Provider. This includes land leased from or to the Commonwealth, where there is a provision in the lease that allows the Commonwealth to control access to the *biological resources* in and on the land.

Additional *permits* issued under the *EPBC Act* or regulations may be required dependent on the proposed actions and activities.

DEFENCE APPROVALS

6.19 Access and use of the Defence estate by an *external party* must be in accordance with the [Defence Estate Civil Use Policy](#).

6.20 *Scientific research* involving fauna and flora, which is not covered by existing controls and where there is a potential for an adverse environmental impact to occur, require an ECC for the purpose of ensuring compliance with Commonwealth legislation, regulation and policies.

6.21 Where the person undertaking an action already holds a state or territory licence for the action off the Defence estate, an ECC may refer to existing provision(s) with respect to the *wildlife* requirements. The ECC must include additional conditions relating to the conduct of the action and the associated environmental impacts.

ETHICAL APPROVALS

6.22 All Defence personnel, contractors and *external parties* undertaking activities or actions that involve the care and use of animals for *scientific purposes* where the aim is to acquire, develop or demonstrate knowledge or techniques, must have appropriate animal ethics approvals in accordance with the [Australian code for the care and use of animals for scientific purpose](#). This includes the use of animals in research, field trials and environmental studies.

6.23 All management activities or actions undertaken on the Defence estate must be conducted in accordance with the relevant national, state or territory SOPs and model Codes of Practice (COPs), which have already undergone consideration and approval through appropriate animal ethics committees.

TRANSLOCATIONS

6.24 Translocation of *EPBC Act* listed matters is subject to approval requirements of the Act. An ECC may be required where associated impacts to other aspects of the environment are likely.

6.25 Translocation of fauna and flora for conservation purposes within a Defence property, not listed under the *EBPC Act*, must be approved by an ECC and where relevant an appropriate animal ethics committee. Whole of environment considerations under an ECC should take into account the conservation status of the species within the surrounding jurisdiction.

6.26 Translocation of fauna and flora for conservation purposes on to or off the Defence estate, not listed under the *EBPC Act*, must be approved by an ECC and a translocation plan approved by the authority for the source or release site.

6.27 Translocation of fauna within a Defence property that pose an imminent or serious safety risk or for management purposes must be undertaken in accordance

with relevant state, territory and Commonwealth COPs, SOPs and applicable animal ethics approvals. Noting 6.17, persons undertaking work must ensure all required legislative notifications are adhered to.

6.28 Translocation of fauna and flora must be conducted by suitably qualified and experienced persons.

VOUCHER SPECIMENS

6.29 An ECC may be issued for taking *voucher specimens* from the Defence estate when the following conditions have been met:

- a. relevant licensing, *permits* and applicable animal ethics approvals are in place that explicitly cover the taking of *voucher specimens* and the method to be employed, such as humane method of euthanasia for fauna and collection procedures for flora; and
- b. a list of target species is provided to Defence for approval prior to any action; and
- c. a current [Access to Biological Resources Permit](#) is in place.

6.30 *Voucher specimens* must be lodged with the relevant state or territory museum or herbarium in which the action is taken or the Australian National Herbarium or Collections - CSIRO (collections include fish, *wildlife* and insects). Collections should ideally be split between these institutions where a series of *voucher specimens* are procured.

6.31 All legislative requirements must be adhered to, as per clause 6.15 – 6.18, for *EPBC Act* listed species or ecological community, a listed migratory species, or a listed marine species in or on a Commonwealth area, prior to being provided to museums.

CHAPTER 7

NATIVE VEGETATION

PURPOSE AND SCOPE

- 7.1 To provide a strategic framework to sustainably manage *native vegetation* across the Defence estate.
- 7.2 This chapter does not contain guidance on Defence's internal [Environmental Impact Assessment](#) (EIA) process, or environmental offsets as a result of *EPBC Act* decisions.
- 7.3 This chapter does not contain guidance on management of areas of natural heritage significance, which are included in the Commonwealth Heritage list. These are managed in accordance with the [Defence Heritage Strategy](#), [Heritage Toolkit](#) and Heritage Management Plans.
- 7.4 This chapter does not describe the management of *general threatening processes* (see LMM: [Chapter 2 – Non-established pests, weeds and pathogens](#), [Chapter 3 – Established pests, weeds and pathogens](#), [Chapter 10 – Bushfire Planning and Management](#) and [Chapter 11 – Post-fire management](#)).

MANAGEMENT APPROACH

- 7.5 Defence will commit to improve *connectivity* and condition of *native vegetation*, in accordance with the [Australian Native Vegetation Framework](#).
- 7.6 Defence will apply the '[Avoid, Minimise and Manage](#)' hierarchy of *native vegetation* management in an effort to maintain biodiversity values and *ecosystem function*.
- 7.7 Wherever reasonable and practical, cleared vegetation should be utilised as outlined in the Environment and Heritage Manual, [Chapter 12: Defence Waste and Recycled Materials Policy](#).
- 7.8 Defence land must not be included in any state or territory regulated environmental offset scheme, except as part of a disposal process.
- 7.9 Defence land must not be used to offset environmental impacts outside the Defence estate without approval from the Deputy Secretary Security and Estate Group.
- 7.10 Vegetation management must be undertaken in accordance with native vegetation management strategies where these are in place.
- 7.11 Where strategies are not in place actions that would create new vegetation or environmental constraints must be approved and sited through an endorsed planning process, such as a site selection board. This limits the risk of future impacts to capability and provides security to the values being established or enhanced.

NATIVE VEGETATION MANAGEMENT STRATEGY

7.12 *Native vegetation* management strategies must be produced to support base plans, zone plans and other authoritative estate planning processes in accordance the Native vegetation planning guideline.

7.13 *Native vegetation* management strategies must as a minimum consider the following:

- a. biodiversity outcomes linked to vegetation
- b. surrounding conservation areas, biodiversity values and landscape linkages
- c. mapping areas with key landscape roles supporting biodiversity outcomes including movement and resilience under changing climates
- d. balancing core short and long term Defence operational and capability requirements against key vegetation values
- e. vegetation with capability benefits
- f. any required benchmarks for condition and extent of *native vegetation*.

7.14 Outputs of the planning process (e.g. reports and maps) must be linked to the Defence *Biodiversity Register* in GEMS.

CHAPTER 8

CARBON OFFSETS

PURPOSE AND SCOPE

8.1 To clarify the Defence position on participation in Australian Government incentive schemes that seek to abate greenhouse gas emissions.

BACKGROUND

8.2 Defence recognises that it has a responsibility to identify and implement effective approaches to reduce energy consumption (as per the [Environment and Heritage Manual](#), [Smart Infrastructure Handbook](#) and [Defence Climate and Disaster Resilience Policy](#)).

8.3 Defence Environmental and Energy policies and practices are consistent with the intention of the [Emissions Reduction Fund](#) legislated by the Australian Government and administered by the Clean Energy Regulator.

8.4 *Carbon offsetting*, such as revegetation and fire management, is an eligible action under the Emissions Reduction Fund for which individuals and organisations can earn Australian carbon credit units. The Fund is a Commonwealth initiative to reduce Australia's carbon emissions by providing an incentive for businesses, land owners, state and local governments, community organisations and individuals to adopt new practices and technologies which reduce emissions and improve the environment.

MANAGEMENT APPROACH

8.5 Defence landscape management activities should be conducted in a way that contributes to carbon abatement outcomes, through healthy soils, responsible fire management and revegetation.

8.6 Defence must not seek or endorse the seeking of Australian Government incentives as a result of any programs or activities that result in carbon abatement outcomes on Defence Land.

CHAPTER 9

SOIL MANAGEMENT

PURPOSE AND SCOPE

9.1 To provide a framework for the management of soils that enables sustainable use of the Defence estate and minimises environmental harm.

9.2 This chapter does not address pollution prevention measures, or management or remediation of contaminated soils as a result of toxicants. Information relating to pollution prevention can be found in the [Pollution Prevention Management Manual](#) (PPMM). Information regarding the management of contamination can be found in the [Defence Contamination Management Manual](#) (DCMM).

MANAGEMENT APPROACH

9.3 Defence will sustainably manage and improve soil health on the Defence estate.

9.4 Key elements of soil health that may require management are:

- a. structure
- b. erosion
- c. organic matter levels
- d. nutrient levels
- e. water holding capacity
- f. biological activity.

9.5 Soil management and *monitoring* must be prioritised towards:

- a. prevention of degradation from Defence activities
- b. remediation of degraded areas.

RISK MANAGEMENT

9.6 At a minimum the following soil management issues must be identified and mapped:

- a. *salinity*
- b. erosion
- c. compaction

- d. acid sulphate
- e. sodic
- f. mass movements (e.g. landslides etc.).

9.7 The [Pollution Prevention Management Manual \(PPMM\)](#), [Defence Contamination Management Manual \(DCMM\)](#) and [Defence UXO Management Manual \(DUXOMM\)](#) must be considered and where applicable an *integrated landscape management* approach applied.

9.8 Mapping of soil issues should be prioritised to properties in the following order:

- a. *training areas* where wide scale vehicle manoeuvre and/or high explosive impacts occurs
- b. core bases
- c. other establishments.

Risk management process

9.9 All issues identified must be subject to risk management processes in accordance with the [Defence Risk Management Framework](#).

9.10 Risk management considerations are described in the soil management guideline.

9.11 All sites assessed as medium risk or above must be individually entered into the Defence Soils Register in GEMS. Individual site records may include details of one or more issues listed in 9.6.

9.12 Low risk sites can be combined into issue based records in the Defence Soils Register. Multi-site records can include details of only one of the issues listed in 9.6, but a site may be included in more than one multi-site record.

9.13 The outcome of the risk management process and all identified management actions must be documented in the GEMS Risk Register.

MONITORING AND REMEDIATION

9.14 Low risk matters may be subject to informal or medium-long term *monitoring* (5–10 years) to ensure that natural attenuation or recovery is occurring or to detect an increase in risk level that requires a change to management approach.

9.15 Detailed *monitoring* may be a prescribed management action for sites with a medium or above risk. Detailed *monitoring* programs should seek to identify *thresholds* linked to required management actions.

9.16 Remediation of vulnerable or degraded sites must follow a prioritisation process that considers the following hierarchy:

- a. personnel safety and legal requirements
- b. contribution to current and future ADF capability
- c. potential impact to neighbouring properties
- d. environmental impacts.

9.17 Sites where remediation action(s) have been applied should be monitored for treatment effectiveness.

9.18 All *monitoring* data must be recorded in GEMS.

9.19 Property management objectives, including *monitoring* and remediation, are described in the soil management guideline.

CHAPTER 10

BUSHFIRE PLANNING AND MANAGEMENT

PURPOSE AND SCOPE

10.1 To provide a framework for assessing and managing bushfire risk on the Defence estate.

10.2 This chapter does not address post-fire management requirements and opportunities, including reporting requirements for all burns, which are described in [Chapter 11: Post-fire Management](#).

10.3 This chapter does not address Defence's approach to Aboriginal cultural burning, which is described in [Chapter 12: Aboriginal Cultural Burning Practices](#).

10.4 Defence design requirements for assets located in bushfire prone areas, where new building works or change-in-use occurs, are detailed in Chapter 10 of the [Manual for Fire Protection Engineering](#).

RISK MANAGEMENT APPROACH

10.5 A Defence property is designated as bushfire prone if:

- a. It includes areas of land mapped as bushfire prone by a local government or local fire authority; or where this has not occurred,
- b. It includes areas of land that meet the criteria of vegetation categories 1, 2 or 3 for bushfire prone land as set out in the [NSW Rural Fire Service Guide for Bushfire Prone Land Mapping](#) (2015).

10.6 Bushfire risk management must be carried out and documented using the Bushfire Management Planning Guidelines (the Guidelines), which outlines how to apply the risk management process, in accordance with the [Defence Risk Management Framework](#).

10.7 The risk analysis and nominated risk treatments for all bushfire prone properties must be recorded in GEMS.

10.8 All bushfire prone properties are subject to an 'Overall Site Bushfire Risk Assessment' to determine the degree of planning requirements for the property. Once assessed, the Overall Site Bushfire Risk (OSBR) is to be recorded in GEMS and only requires review when a substantive change occurs in the parameters contributing to the assessment. Criteria to assess OSBR are provided in the Guidelines.

10.9 Properties rated as having a low OSBR are not required to be included in a *Bushfire Management Plan* (BMP). Risks arising from the Bushfire Hazard on low OSBR properties must still be assessed and managed through grounds maintenance in keeping with the degree of risk and construction standards of any assets as described in the Guidelines and, where relevant, Prepare, Act, Survive material.

10.10 Properties rated as having a medium or high OSBR must be included in a BMP prepared in accordance with the Guidelines.

KEY ROLES AND RESPONSIBILITIES

10.11 Bushfire management requires collaboration between many parties within and outside Defence. Accordingly, roles and responsibilities can be complex, and can differ between properties. Implementation of the many aspects of bushfire management involves multiple responsible areas, particularly within Security and Estate Group (S&EG) but also more generally, across Defence. The frameworks that outline the important accountabilities and governance structures relating to bushfire management are identified in [Chapter 1 – Background and context](#).

CONSULTATION AND STAKEHOLDER ENGAGEMENT

10.12 Consultation and stakeholder engagement is an ongoing requirement throughout the bushfire management planning process. A list of potential stakeholders is provided in the Guidelines.

10.13 Collaboration with state and territory agencies is essential to build mutual understanding of the respective roles of Defence and civilian authorities prior to, and during fire events, including *planned burns*.

10.14 Collaborative arrangements should be formally documented in Memorandums of Understanding (MOUs) between agencies, and where in place, local-level Mutual Aid Agreements (MAAs), that set down operational requirements for relevant properties.

10.15 MOUs between Defence and regional fire agencies should detail interagency actions in jointly managing bushfire, Defence's support to fire agencies during firefighting operations and ensure mutual organisational readiness for emergency bushfire response.

10.16 Local stakeholders should inform relevant internal and external forums of a review of bushfire planning.

10.17 Where potential amendments to a Base Emergency Management Plan are identified through the bushfire planning process these must be consulted through the official base forum responsible for emergency management.

FUEL MANAGEMENT STRATEGIES

10.18 Where practical, bushfire fuel management activities must consider coordinating actions with neighbouring stakeholders or appropriate state or local authorities.

10.19 Where a Defence property represents a minor component of the local bushfire hazard, preference should be given to coordinated or collaborative prescribed burning with the adjoining authority who controls the majority of the hazard.

10.20 Planned bushfire risk treatments must have prescribed performance based fuel management strategies within clearly delineated fire management zones linked to risk records and matters at risk (assets, values or training activities).

10.21 Bushfire prone vegetation that is not included in a fire management zone must be managed for the dual purpose of maintaining ecologically sustainable vegetation and managing bushfire fuel hazard. Vegetation should be burned in accordance with scientifically based ecological fire tolerances as described by accepted authoritative sources.

10.22 Planning of burning or fuel treatments in *southern Australia* should be undertaken in consultation with relevant neighbouring landholders and authorities to ensure integration of Defence management activities into broader landscape fuel reduction programs and to take in to account impacts of unplanned burning in preceding years.

10.23 Late wet season or early dry season burning is the default practice for *northern Australian* properties and planning of burning or fuel treatments in areas outside predefined fuel management zones should at a minimum be based on requirements of 10.21 and the preceding three years of fire history and time since last fire.

ENVIRONMENTAL IMPACTS OF BUSHFIRE MANAGEMENT ACTIVITIES

10.24 All bushfire treatments are to be developed and implemented in accordance with the *EPBC Act*.

10.25 Other matters protected under the *EPBC Act* may require approvals such as listed species and ecological community *permits* and licences in accordance with [Chapter 6 – Fauna and flora licencing and permit requirements and ethics approvals](#).

10.26 All fire-sensitive species, communities or heritage values must be identified and considered during bushfire treatment and, where possible, during fire suppression activities.

BUSHFIRE MANAGEMENT PLANS – PREPARATION AND APPROVALS

10.27 BMPs must be prepared in accordance with the Guidelines.

10.28 State and territory authorities must be engaged in the development of a BMP in accordance with the requirements of an MOU, if one is in place.

10.29 BMPs are not intended to replicate, contradict or replace other authoritative controlling plans on the property (e.g. Training Area Standing Orders, Base Emergency Management Plan, Base Instructions). BMPs should critically evaluate content of these plans from a bushfire content perspective and recommend required changes to the accountable authority for the plan.

10.30 Prepare Act Survive (PAS) materials must be prepared in accordance with the Guidelines.

10.31 Where necessary, a *Refuge of Last Resort* may be identified and mapped in the PAS materials for that property. Any inconsistency between the *Defence Refuge of Last Resort* and the state or territory guidelines for Neighbourhood Safer Places (or equivalent) must be explained to property stakeholders and documented in GEMS along with any proposed upgrades.

10.32 A Bushfire Operations Map must be prepared to support responding agencies in accordance with the [Specialised Data Specifications Section 13 Environmental Data](#).

10.33 On completion of the development of a BMP, the BMP must be reviewed and formally endorsed by the *property manager*.

10.34 The *property manager* must accept and implement the BMP when they are satisfied that:

- a. bushfire risks are described and treated adequately, and
- b. the BMP has been developed in accordance with the Guidelines.

IMPORTANT REVIEW TIMEFRAMES

10.35 Reviewing, recording and updating of bushfire risks, treatments and BMP documents must be in accordance with the Guidelines.

10.36 The Property Bushfire Preparedness Checklist in GEMS must be completed annually for all bushfire prone sites.

10.37 Annually and prior to the commencement of each fire danger period:

- a. All risks assessed as carrying a high or above *inherent risk* must be reviewed for all bushfire prone properties to assess whether treatments are in place and whether residual risk is acceptable; and
- b. Materials that form part of the BMP that contain site contact details and safety information, such as the Operations Map and PAS materials, must be reviewed, updated where necessary, and re-distributed to property users and visitors prior to the commencement of each Fire Danger Period.

10.38 All bushfire risks are to be reviewed as follows:

- a. Low *inherent risks* at least every five years.
- b. Medium *inherent risks* at least once every two years.
- c. High and very high *inherent risks* every year.

10.39 Proposed new mitigation works must be accompanied by a formal risk assessment following the same processes as outlined in the Guidelines.

10.40 New risks and treatments must be included in GEMS following formal identification and assessment. This includes risks and treatments arising from the

development of new infrastructure or facilities as part of hand-over take-over, in accordance with the Guidelines.

10.41 If a BMP developed prior to 2020 has not been updated within five years, the BMP can be extended for 12 months if the delegate is satisfied that the BMP adequately reflects matters at risk on the property and treatments for those risks are practical and reasonable. A BMP extended in this fashion must be reviewed every 12 months for currency prior to any further extension.

10.42 Where a BMP referred to in 10.41 does not adequately reflect matters at risk on the property due to redevelopments or significant changes to the property risk profile, those new matters at risk and their required management should be appended to the existing BMP and endorsed by the Base Management Forum. Documentation of the risk assessment and management should be in accordance with the Guidelines.

10.43 Content of BMPs developed from 2020 onwards must be kept current through ongoing amendment in accordance with 10.35-40 as new matters at risk are identified and through routine risk review processes.

STANDARDS AND APPROVALS FOR HAZARD REDUCTION WORKS

10.44 Standards for *hazard reduction works* must be in accordance with BMP prescriptions, GEMS risk response prescriptions, or where these are not in place, applicable Defence or local authority standards.

10.45 All *hazard reduction works* must be subject to Defence environmental assessment and approval processes. Works may be authorised as standard activities under Training Area Standing Orders, Base Instructions, a Defence approved/agreed Standard Operating Procedure or plan, or an *Environmental Clearance Certificate*.

10.46 Asset Protection Zones (APZ) must be developed in accordance with the Guidelines.

10.47 Consultation, approval and permitting of planned burning for hazard reduction and ecological purposes must follow requirements set down in a MOU between Defence and states and territories. Where a MOU has not been put in place, *planned burns* must have state and territory fire *permits* in place in accordance with local legislative requirements.

BURN PLANS

10.48 Burn plans must be developed by someone who holds and/or demonstrates the required competencies of [PUAFIR515 – Develop complex prescribed burn plans](#).

10.49 Burn plans must be prepared in accordance with the timeframes and templates specified in MOUs, or using the default Defence Burn Plan template, where no MOU is in place.

10.50 Defence burn plans must explicitly consider the environmental matters covered by the [NSW Bush Fire Environmental Assessment Code](#). The Environmental

Checklist within each burn plan ensures relevant matters under the code have been identified and mitigated in the burn plan.

10.51 Where a proposed burn will impact matters requiring an *EPBC Act permit*, this must be identified to Defence at least four months prior to planned conduct of works.

10.52 All burn plans submitted to Defence for environmental approval must be accompanied by mapping that shows, at a minimum:

- a. specific boundaries of proposed burns
- b. proposed control lines for contained burns
- c. proposed lighting pattern
- d. *EPBC* and state/territory threatened species and/or communities known to occur within the proposed burn area
- e. fire sensitive cultural and *environmental values*
- f. fire sensitive assets
- g. heritage.

MONITORING AND REPORTING

10.53 *Monitoring* and reporting of bushfire and bushfire management activities must be undertaken to ensure that triggers for management actions are registered and acted on, and that the outcomes of management programs are assessed for practicality and effectiveness.

CHAPTER 11

POST-FIRE MANAGEMENT

PURPOSE AND SCOPE

11.1 To provide guidance on the requirements following a planned or unplanned fire.

MONITORING AND REPORTING

11.2 The following must be created as GEMS Fire Event Records:

- a. all fires in *southern Australia*
- b. in *northern Australia*
 - (1) all *planned burns*
 - (2) all Defence caused fires
 - (3) all fires that cause injury to personnel or damage to Defence assets
 - (4) all fires that received a *second response*
 - (5) monthly fire scars for all other fires.

11.3 Situation reports, debrief outcomes and other materials related to each fire must be lodged as documents attached to a GEMS Fire Event Record that describes the burn.

11.4 Where applicable, any environmental, safety or other incidents on Defence or neighbouring land arising from a fire, such as a threatened species being killed or injured, must be reported through the applicable systems, particularly where there is a licencing and reporting requirement (see [Chapter 6 – Fauna and flora licencing and permit requirements and ethics approvals](#)).

11.5 If GEMS Estate Incident Records have been raised to describe any impacts of a fire these must be linked to the GEMS Fire Event Record for the fire.

DEBRIEF

11.6 A joint debrief must be organised with external fire authorities following any bushfire that received a *second response*.

11.7 An internal Defence debrief may be convened for any fire that received a sustained *first response* (i.e. a response beyond immediate extinguishment of a small fire or where multiple response assets are involved).

11.8 Matters to be considered at the debrief include, but are not limited to:

- a. ignition source
- b. adequacy of treatments, including *user mitigation response* and Defence *first response* on the day and any *hazard reduction works* conducted under the BMP works programs
- c. how soon was the fire observed and by what means
- d. response and response time, communication effectiveness, command and control, interoperability with external agencies, property familiarity, secondary impacts on the environment or infrastructure caused by the response activities
- e. resulting hazards
- f. post-fire *monitoring* and recovery, including likely repairs, remediation and environmental *monitoring* required
- g. has the risk profile of the property been sufficiently altered that risks described in a BMP require review or update.

11.9 The outcomes of debriefs must be minuted and attached to the Fire Event Record in GEMS.

IDENTIFYING REQUIRED ACTIONS

11.10 All burnt areas that are identified as hazardous or susceptible to degradation must be closed to non-management activities until such time as hazards are removed or the area has recovered to the extent that specified activities will no longer degrade the area.

11.11 Where the area was burnt as part of a hazard reduction burn in support of Defence capability or training requirements, no rest period is required prior to the ADF undertaking the action, except where the burnt area presents a hazard to the personnel undertaking the action.

11.12 Impacts of bushfires are unpredictable, so it is necessary to assess the outcomes of a *planned burn* or wildfire after it is extinguished by determining the severity of the burn and potential impact on sensitive matters. In some circumstances this must be undertaken through a post-fire debrief. However, informal assessment of potential impacts requiring further action should occur whenever possible.

11.13 Key potential impacts that may require management include:

- a. Treatment and [euthanasia](#) of injured *wildlife* and impacts to any leaseholders stock.
- b. Erosion or sedimentation risks to water supplies or sensitive environments.
- c. Damaged infrastructure.
- d. Whether fire sensitive assets require a condition inspection.

- e. Whether areas adjoining *weed* infestations are now susceptible to incursion and require follow up *monitoring* or treatment.
- f. Whether precautionary *pest* management is required to protect threatened species exposed to a heightened risk of predation.
- g. Remediation of temporary firebreaks, tracks and control lines as soon as possible to minimise erosion, protect *waterways* and encourage natural regeneration.

11.14 The costs and risks of conducting management activities must be assessed against the temporary escalation in risk to sensitive matters; brought about by the fire event and the actual benefit of the proposed action. Conservation agencies' management actions in adjoining areas should inform this analysis.

11.15 Key opportunities presented by temporary reduction in vegetation may include:

- a. advantageous circumstances for *pest* and *weed* management
- b. waste removal
- c. *UXO* clearance
- d. archaeological surveys.

11.16 Planting, reseeding or manipulation of *native vegetation* recovery should only be undertaken in exceptional circumstances in consultation with zone environmental staff and with guidance and advice from state, territory or Commonwealth conservation authority.

11.17 Supplemental feed and water for *wildlife* must only be provided under expert guidance and advice from a state, territory or Commonwealth conservation authority and where food provided does not pose a biosecurity risk.

11.18 If long term management requirements are identified these should, where relevant be added to existing risk records within GEMS (e.g. threatened species management actions) or new records created following protocols in relevant chapters and guidelines. Where *monitoring* actions are identified, all resulting data must be recorded in GEMS.

11.19 All work orders, risk records or other GEMS objects arising from post-fire management must be linked to the relevant Fire Event Record in GEMS.

CHAPTER 12

ABORIGINAL CULTURAL BURNING PRACTICES

PURPOSE AND SCOPE

12.1 To provide a mechanism for Aboriginal cultural stewardship and renewal through increasing Aboriginal cultural burning and caring for Country practices on the Defence estate.

12.2 This chapter applies where cultural burning and caring for Country practices potentially benefit Defence and/or Aboriginal values.

12.3 This chapter does not identify the requirement for *hazard reduction works* and their conduct, which are described in [Chapter 10 – Bushfire planning and management](#).

BACKGROUND

12.4 The Australian Government's policies on *native vegetation*, threatened species and other environmental matters include commitments to increase shared decision making with Aboriginal peoples in landscape management.

12.5 The [Defence Reconciliation Action Plan \(DRAP\) 2019-2022](#), [Defence Estate Heritage Strategy 2017](#), CSIRO's [Our Knowledge, Our Way resources](#) and the [Commonwealth Indigenous Procurement Policy](#) guide the development of Defence's partnerships with Aboriginal communities and local Traditional Owners (TOs).

12.6 Defence recognises that the implementation of Aboriginal cultural burning and caring for Country practices relies heavily on establishing and maintaining respectful relationships with Aboriginal peoples.

12.7 Defence acknowledges that Aboriginal culture is a dynamic living entity and Aboriginal people require access to country for the continuous renewal of culture.

12.8 Cultural renewal outcomes include (but are not limited to) connecting with and caring for Country, enhancing ecologically diverse ecosystems including water sources, protecting cultural values, hazard reduction and knowledge transfer.

12.9 Cultural burning practices draw on Aboriginal knowledge that includes incorporation of modern technological advancements, supports learning by observation, sharing of knowledge and can strengthen connections with contemporary land management practices and practitioners.

MANAGEMENT APPROACH

12.10 In support of the [DRAP](#) vision to engage with Aboriginal peoples, Defence aims to:

- a. Seek opportunities to expand cultural burning and caring for Country practices on the Defence estate.

- b. Strengthen Defence's understanding and appreciation of cultural burning and caring for Country practices.
- c. Support the integration of cultural burning and caring for Country practices into land management programs.
- d. Develop positive and mutually beneficial relationships in support of Aboriginal communities' cultural renewal aspirations through conducting cultural burns and caring for Country on *Defence properties*.

12.11 Defence recognises that Aboriginal cultural knowledge is the property of Aboriginal peoples and must only be recorded, shared and applied in accordance with cultural protocols under the directions of local knowledge holders.

12.12 Consultation with the relevant Aboriginal people regarding planning and delivery of cultural burns and caring for Country must be conducted in accordance with Australian Heritage Commission's [Ask First](#) guide.

12.13 Guidance on identification of appropriate Aboriginal people can be sourced and/or corroborated from local Aboriginal people, Heritage Management Plans, Defence Indigenous Affairs Directorate and Indigenous Liaison Officer network or by contacting Regional Environmental staff or policy owners. State and territory departments responsible for cultural heritage, environment and natural resource management matters can also provide guidance on which Aboriginal people should be contacted.

12.14 Defence acknowledges the possible presence of the following people at cultural burns may be important for intergenerational knowledge exchange and customary practice:

- a. children (people under 16)
- b. the elderly, and
- c. disabled people.

12.15 Defence acknowledges that people listed in 12.14 and others may not have formal fire line accreditations.

12.16 All cultural burns must be endorsed by Traditional Owners and/or relevant Aboriginal rights holders.

12.17 Access and use of the Defence estate must be in accordance with the [Defence Estate Civil Use Policy](#).

12.18 Consultation, approvals and development of burn plans and post-fire management requirements for cultural burns must be done in accordance with [Chapter 10 – Bushfire planning and management](#) and [Chapter 11 – Post-fire management](#).

12.19 Defence personnel responsible for approval of the burn plan must be satisfied liability and insurance requirements have been discussed, agreed and in place prior to commencement of the burn.

Safety

12.20 Defence has a duty of care to ensure all burns are undertaken as safely as reasonably practical and to manage other risks to Defence and neighbouring values.

12.21 Each cultural burn must be planned and conducted according to the individual circumstances, which must include a risk assessment process where objectives have been agreed to by relevant Aboriginal and Defence people.

12.22 Cultural burns must comply with legislation, including the *Work Health and Safety Act 2011* and internal Defence safety requirements; including the [Defence Safety Manual \(SafetyMan\)](#).

12.23 All cultural burning activities or actions are subject to Defence conditions and approval requirements for the duration of the burn.

12.24 For all cultural burns an appropriately skilled and experienced person must be nominated in the role of safety officer, who will be responsible for:

- a. Understanding individual competencies and roles of those attending the burn; and
- b. Understanding the safety risks posed by the fire and conduct of the burn, for the duration of the burn; and
- c. Ensuring all individuals participating in any aspect of the burn are safeguarded, so far as reasonably practical, based on a & b above; and
- d. Ensuring all children are under the direct supervision of a responsible adult at all times and appropriate support is provided to people with mobility, comprehension or other difficulties.

Opportunities

12.25 The potential for archaeological surveys or other land management actions to occur in conjunction with cultural burns should be considered, as well as longer term opportunities (see 11.15 – [Chapter 11 – Post-fire Management](#)).

CHAPTER 13

REPORTING OF LANDSCAPE SUSTAINABILITY

PURPOSE AND SCOPE

13.1 To provide a framework for reporting on the condition of environmental aspects of the estate that support capability and sustainability of *environmental values*.

SUSTAINABILITY REPORTING

13.2 Sustainability reporting indicators must be identified for *core bases*, operational *supporting bases* and *training areas* and 'raise, train and sustain' training areas that support *core bases* identified in the [2016/36 Defence Estate Strategy](#).

13.3 Sustainability indicators must be considered within the following categories.

- a. Capability
- b. Biosecurity
- c. Biodiversity
- d. Soil condition
- e. Water quality
- f. Natural Heritage

13.4 Indicators should be restricted to matters that can be practically monitored and that could materially impact use of the site or the environment.

13.5 Limits of acceptable change (*thresholds*) must be identified where the impact or the change in the matter being monitored is the result of *Defence activities* and/or Defence can undertake remedial actions.

13.6 Sustainability reporting must be published annually on the [Defence Estate Quality Management System](#) (DEQMS).

GLOSSARY

TERMS AND DEFINITIONS

Aboriginal Cultural Burning Practices

Maintaining culture through the introduction of fire that is planned and conducted by the appropriate Aboriginal people.

Best practice

Commercial or professional procedures that are accepted or prescribed as being correct or most effective.

Biodiversity register

Register of biodiversity Environmental Factor Records (EFRs) held in the GEMS biodiversity tab.

Biological resources

Biological material collected from native species such as genetic resources, organisms, parts of organisms, populations or any other biotic component of an ecosystem with actual or potential use or value for humanity.

Biosecurity

Relates to measures aimed at preventing the introduction and/or spread and negative impacts of *pests*, *weeds* and *pathogens*.

Biosecurity register

Register of biosecurity Environmental Factor Records (EFRs) held in the GEMS BONS tab.

Bushfire Management Plan (BMP)

A suite of products that documents and records the risks and treatments to be implemented to reduce the risk from bushfire. The suite of documents includes a Bushfire Risk Management Plan, a Bushfire Prevention Plan (BPP), 'Prepare Act Survive' (PAS) material, a Bushfire Operations Map and GEMS data.

Carbon offsetting

Market-based mechanism and typically transacted in metric tonnes of carbon dioxide equivalent (CO²). Once purchased it is retired permanently.

Connectivity

Vegetated corridors connecting larger patches of vegetation, enabling species movement between patches.

Co-ordinated management actions

Decisions and actions organised and agreed upon among interacting stakeholders, which are delivered by Defence. The aim of co-ordination is to optimise delivery and improve the rate of success.

Core bases

Properties classed as 'core bases' in the [2016/36 Defence Estate Strategy](#). This includes Army, Navy, Air Force and Joint Facility bases.

Defence activities

All activities, projects, developments, demolitions, exercises, trials, undertakings and introductions of new capability undertaken by or on the behalf of Defence.

Defence biodiversity register

Same as Biodiversity Register.

Defence biosecurity register

Same as Biosecurity Register.

Defence properties

Defence owned or managed properties, including wharves and relevant revenue and expenditure leased areas. Noting Non-Defence Training Areas and marine exercise areas are not captured by this manual.

Disease

A disorder of structure or function in a human, animal, or plant that is not simply a direct result of physical injury.

Ecosystem function

How well an ecosystem or area of *native vegetation* can continue to provide ecosystem services, environmental, cultural and spiritual values and productive land use.

Environmental Clearance Certificate (ECC)

Template form that is the tool of Defence's environmental assessment and approval program. ECCs are used to record the conduct of Defence actions for the purpose of ensuring compliance with Commonwealth legislation, regulation and policies, most notably the EPBC Act.

Environment Protection and Biodiversity Conservation (EPBC) Act 1999

The Australian Government's key legislation for protecting and managing nationally and internationally important flora, fauna, ecological communities and heritage places.

Environmental value

As per Section 528 of the [Environment Protection and Biodiversity Conservation Act 1999](#), 'environment' includes (but is not limited to):

- a. ecosystems and their constituent parts, including people and communities; and
- b. natural and physical resources; and
- c. the qualities and characteristics of locations, places and areas; and

- d. the social, economic and cultural aspects of a thing mentioned in paragraph a, b, or c.

EPBC Act permit

A permit required under the *EPBC Act* for any action impacting on an *EPBC Act* listed species, including migratory or marine species, or ecological community.

Established pests, weeds or pathogens

Pests, weeds or pathogens that are widespread, established or beyond eradication.

External authorities

Non-Defence agencies, organisations and their personnel, such as local government and state, territory and Commonwealth agencies.

External parties

Non-Defence organisations and their personnel, for example universities, local and state governments and not-for-profit organizations.

Facilitated management actions

Management actions, including *monitoring*, conducted by *external parties* on *Defence properties* that are supported and endorsed by Defence.

First response

Activities coordinated by an on-site authority to extinguish contain or control a bushfire using property resources called to a fire incident that could not be extinguished by *user mitigation response*. Resources may be provided by Defence, contractors or other property users. .

General threatening processes

General processes which contribute to the decline of native species, or which cause major changes to ecological communities (e.g. the establishment of weeds, inappropriate fire and grazing regimes, soil erosion).

Hazard reduction works

Preventative actions, including fuel reduction burns, mechanical work such as maintenance or construction of control lines, access tracks and fire breaks, and pruning and tree removal, taken to prevent or reduce the risk and severity of fires before a fire occurs.

Incursion

The movement of a *pest, weed or pathogen* into a new area.

Inherent risk

The current risk level given the existing set of risks.

Integrated landscape management

Land management requirements are balanced and integrated, to ensure equitable and sustainable land use. Well-informed and integrated landscape management supports long-term ecological, social and economic sustainability objectives. Control methods may be utilised concurrently to address a range of land management requirements.

Local authority list

A list of priority *pests*, *weeds* and *pathogens* within a local government area.

Monitoring

The systematic collection, recording and analysis of observations over time. It provides a way of checking if the intended outcome of a management program is being achieved.

Native vegetation

Is made up of plant communities, comprising primarily indigenous species, the composition and structure of which reflects the interactions between plant species, between plants and fauna and with the environment. Native vegetation includes canopy trees (where present), understorey, ground cover and below ground biomass (roots, bulbs and the seed bank), and regrowth and newly colonising stands of indigenous species.

Natural landscape

Comprised of land forms, climate, *waterways*, and flora and fauna.

Non-established pests, weeds or pathogens

Pests, *weeds* or *pathogens* that are not yet widespread, established or beyond eradication.

Northern Australia

Properties north of the Tropic of Capricorn.

Outbreak

A new occurrence of *pest*, *weed* or *pathogen*.

Pathogen

A bacterium, virus, or other microorganism that can cause *disease*.

Pest

Any invertebrate or vertebrate species, native or introduced, that has, or has the potential to have, an adverse capability, economic, environmental, safety or social/cultural impact and that are generally regarded, or have been declared under state or territory legislation, as a 'pest'.

Pest species

Any invertebrate or vertebrate species, native or introduced, that has, or has the potential to have, an adverse capability, economic, environmental, safety

or social/cultural impact and that are generally regarded, or have been declared under state or territory legislation, as a 'pest species'.

Permit

The terms permit and licence are often used interchangeably. Generally, a permit describes a more temporary form of permission, while a licence covers an extended period of time.

Planned burn

Controlled use of fire under carefully managed conditions to reduce fuel such as dead wood, leaf litter, bark and shrubs.

Property Manager

A *Property Manager* refers to a Base Manager or the equivalent role for training areas or bases without a specified Base Manager, and as defined in the [Joint Framework for Base Accountabilities](#).

Recovery plans

Plans listed under the *EPBC Act* which set out the research and management actions necessary to stop the decline of, and support the recovery of, a listed threatened species or ecological community.

Refuge of Last Resort

A building or area of cleared vegetation, such as a sports oval, which has been identified as a refuge for property users and visitors to shelter in during a bushfire event. Refuges of Last Resort are only for use in the contingency that inadequate bushfire warning is received and safe evacuation of personnel and visitors from the property is not possible.

Salinity

The total concentration of all soluble salts within a given soil horizon.

Second response

Response to a fire event provided by agencies external to Defence.

Scientific Purposes

All activities conducted with the aim of acquiring, developing or demonstrating knowledge or techniques in all areas of science, including teaching, field trials, environmental studies, research (including the creation and breeding of a new animal line where the impact on animal wellbeing is unknown or uncertain), diagnosis, product testing and the production of biological products.

Scientific Research

See *scientific purposes*.

Southern Australia

Properties south of the Tropic of Capricorn.

Specialist risk management

Specialist risks, which are also business operational risks, refer to risks that may require specific methods and practices for managing them.

Supporting bases

Defence properties that are classed as ancillary and typically support 'operation' and 'Raise, Train, Sustain' bases as defined in the [2016/36 Defence Estate Strategy](#).

Threat abatement plans

Plans listed under the *EBPC Act* which have been approved by the Minister for the Environment for managing the impact of key threatening processes.

Threatened species and ecological communities

Native species and ecological communities listed under the *EPBC Act* and the equivalent State and Territory legislation.

Thresholds

The point where the change of a particular variable is no longer acceptable. A threshold can have an upper and/or lower value, usually expressed in numerical form.

Training area

Defence properties that are classed as a Training Area as defined in the [2016/36 Defence Estate Strategy](#).

Treatable injuries

Treatable injuries include, but are not exclusive to injuries where the animal has a good prognosis for survival, the ability to move freely or normally once recovered is not impaired, the ability to sense the environment once recovered is not impaired due to a missing or injured organ, the ability to catch, find or handle food is not impaired, treatment is practical or recovery is expected such that the animal can be successfully rehabilitated to the wild, resources are available to provide appropriate care or an acceptable quality of life throughout the rehabilitation period.

Untreatable injuries

Untreatable injuries include, but are not exclusive to injuries where the animal has a poor prognosis for survival, the ability to move freely or normally is permanently impaired, the ability to sense the environment is permanently impaired due to a missing or injured organ, the ability to catch, find or handle food is permanently impaired, treatment is not practical or recovery is not expected such that the animal can be successfully rehabilitated to the wild, resources are not available to provide appropriate care or an acceptable quality of life throughout the rehabilitation period.

User Mitigation Response

Personnel or units using the site for training purposes are required to respond to fires upon ignition, with the aim of extinguishing the fire before it grows to the point of requiring attendance by *first response*.

UXO

Unexploded ordnance.

Voucher specimens

Any specimen of flora or fauna (usually but not always a dead animal) that serves as a basis of study and is retained as a reference.

Waterways

Includes rivers, lakes, ponds, swamps, streams and drainage lines.

Weed

An invasive plant, either introduced (exotic) or native, that colonises and persists within an ecosystem where it did not previously exist.

Wildlife

Native Australian fauna (and sometimes flora).

Zoonotic disease

Infectious diseases that can pass from animals to humans. It is important that people who handle or treat animals are aware of the risk of zoonotic diseases.