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Vertebrate Pesticide Manual

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Sixth edition Vertebrate Pest Control Manual, NSW Department of Primary Industries, 2012


Third edition Vertebrate Pest Control Manual, M. Stevens and M. McDonald eds. 1990


First published as Rabbit Inspectors Vertebrate Pest Control Manual, D. Kennedy, 1977

Acknowledgments

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The information contained in this publication is based on knowledge and understanding at the time of writing (March 2019). However, because of advances in knowledge, users are reminded of the need to ensure that information upon which they rely is up to date and to check currency of the information with the appropriate officer of the NSW Department of Primary Industries or the user’s independent adviser.

Users of agricultural or veterinary chemical products must always read the label and any permit or pesticide control order (PCO) issued by EPA, before using the product, and strictly comply with the directions on the label and the conditions of any permit. Users are not absolved from compliance with the directions on the label or the conditions of the permit by reason of any statement made or not made in this publication.

Labels, Safety Data Sheets (SDSs), permits and PCOs may have changed since this manual was written. Where there is conflict between the manual and these documents, follow the current label, SDS, permit or PCO.
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Chloropicrin

Carbon monoxide – DEN-CO-FUME®

Strychnine

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## Acronyms, definitions and abbreviations

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<thead>
<tr>
<th>Abbreviation</th>
<th>Definition</th>
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<tbody>
<tr>
<td>1080</td>
<td>Sodium fluoroacetate</td>
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<tr>
<td>ACO</td>
<td>Authorised Control Officer</td>
</tr>
<tr>
<td>APVMA</td>
<td>Australian Pesticide and Veterinarian Medicines Authority</td>
</tr>
<tr>
<td>AQF</td>
<td>Australian Qualifications Framework</td>
</tr>
<tr>
<td>CPE</td>
<td>Canid Pest Ejector</td>
</tr>
<tr>
<td>CPO</td>
<td>Commercial Pindone Officer</td>
</tr>
<tr>
<td>CRA</td>
<td>Conservation Risk Assessment</td>
</tr>
<tr>
<td>EPA</td>
<td>Environment Protection Authority</td>
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<tr>
<td>FAAST</td>
<td>Feral Animal Aerial Shooting Team</td>
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<tr>
<td>FARMS</td>
<td>Financial and Rural Management System</td>
</tr>
<tr>
<td>LLS</td>
<td>Local Land Services</td>
</tr>
<tr>
<td>NPWS</td>
<td>National Parks and Wildlife Service, part of Office of Environment and Heritage</td>
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<tr>
<td>DPI</td>
<td>NSW Department of Primary Industries</td>
</tr>
<tr>
<td>OEH</td>
<td>Office of Environment and Heritage</td>
</tr>
<tr>
<td>PAPP</td>
<td>Para-aminopropiophenone</td>
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<tr>
<td>PCO</td>
<td>Pesticide Control Order</td>
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<tr>
<td>PPE</td>
<td>Personal Protective Equipment</td>
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<tr>
<td>PUNP</td>
<td>Pesticide Use Notification Plan</td>
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<tr>
<td>RCP</td>
<td>Restricted Chemical Product</td>
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<tr>
<td>RHD</td>
<td>Rabbit haemorrhagic disease</td>
</tr>
<tr>
<td>RHDV</td>
<td>Rabbit haemorrhagic disease virus</td>
</tr>
<tr>
<td>RSPAMP</td>
<td>Regional Strategic Pest Animal Management Plan</td>
</tr>
<tr>
<td>RSPCA</td>
<td>(NSW) The Royal Society for the Prevention of Cruelty to Animals</td>
</tr>
<tr>
<td>SDS</td>
<td>Safety Data Sheet</td>
</tr>
<tr>
<td>TSR</td>
<td>Travelling Stock Reserve</td>
</tr>
<tr>
<td>VPT</td>
<td>Vertebrate Pesticide Training (course provided to landholders by trained LLS staff)</td>
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</tbody>
</table>
**Authorised officer** means a person authorised as an authorised officer under a particular piece of legislation. An example of this is under Section 167 of *Local Lands Services Act 2013*. Section 185 of the Act states: ‘an authorising authority may appoint a police officer or any other person (including a class of persons) as an authorised officer for the purposes of this Act.’

**Authorised control officer** means a person who: –

(a) holds a current certificate of completion or VET statement of attainment issued by NSW DPI’s Registered Training Organisation or another Registered Training Organisation on completion of the training and assessment components of the Vertebrate Pest Management course delivered by NSW DPI or a Registered Training Organisation; or

(b) is employed by a public authority that has an EPA approved system for evaluating and establishing recognised prior learning that would, at least, be equivalent to obtaining accreditation for the successful completion of the training and assessment components of the Vertebrate Pest Management course; and

(c) holds a current certificate of completion issued by NSW DPI for completion of the Vertebrate Pesticide Accreditation course; and

(d) holds a current certificate of completion or VET statement of attainment on completion of the training and assessment components of a Chemical Accreditation training program assessed at Australian Qualifications Framework levels 3 and 4 and that has been issued by a Registered Training Organisation. To maintain currency of level 3 Chemical Accreditation a person must complete refresher training every 5 years but for level 4 Chemical Accreditation only initial accreditation is required for the duration of their employment, functioning as an Authorised Control Officer; and

(e) is a person who:

   (i) is a member of staff of an LLS, a Wild Dog Destruction Board, NSW DPI, OEH, or other NSW public authority and is currently employed as part of the Public Service under Part 4 of the Government Sector Employment Act 2013 to enable that NSW public authority to exercise its functions; or

   (ii) has obtained approval to operate as an Authorised Control Officer from the Chair and CEO of the EPA prior to completing the training requirements in (c) above.
Introduction

This manual was written primarily for government officers involved in the control of vertebrate pests in New South Wales (NSW). It provides specific information and guidance on vertebrate pest control procedures for NSW in addition to the requirements specified in Pesticide Control Orders (PCOs) issued under the Pesticides Act 1999 (Pesticides Act).

The Manual is intended to promote uniform standards for vertebrate pest control throughout the State including guidance on procedures and requirements for storage, use and supply of vertebrate pesticides. It is essential reading for staff of Local Land Services (LLS), National Parks and Wildlife Service (NPWS) part of the Office of Environment and Heritage (OEH) and all organisations involved in vertebrate pest control.

Information in this manual has been endorsed by all the major agencies involved in administration and implementation of vertebrate pest management in NSW and by the NSW Pest Animal Council.

Framework of vertebrate pest management

Whilst the vast majority of pest animal managers operate at a local or regional level, it is useful to understand the way that strategic pest animal management is conducted. An understanding of broader pest animal strategies at both the national and state level may provide a better understanding of, and opportunities to:

1. Target key areas to facilitate the control of existing species and surveillance for new ones.
2. Implement control at more appropriate times or integrating local control with larger scale control activities such as catchment, state or territory based programs.
3. Adopt long-term planning within a national or state framework.
4. More effectively communicate among stakeholders.
5. Seek funding and support for local or regional control programs which demonstrate integration with state and national strategies.

Australia Pest Animal Strategy

The Australian Pest Animal Strategy, agreed to by all Australian governments, sets out how governments work with each other, and with business, industry and the community to manage the issues and problems associated with vertebrate pest animals in Australia.

In overview, the Australian Pest Animal Strategy establishes key objectives and actions that aim to prevent the introduction and spread of new pest animals in Australia and assist in managing the impacts of those that are already established.

The Invasive Plants and Animals committee is responsible for monitoring the implementation and review of the Australian Pest Animal Strategy. The Invasive Plants and Animals Committee reports to and operates in accordance with Terms of Reference defined by the National Biosecurity Committee. Membership of the committee comprises representatives from the Australian, state and territory primary industry or environment departments. The Invasive Animals Cooperative Research Centre, Commonwealth Scientific and Industrial Research Organisation and others have Official observer status.

The Invasive Plants and Animals Committee convenes a number of Technical Working Groups (which may include Invasive Plants and Animals Committee members) to advise it on technical matters.

National Wild Dog Action Plan

For many years now, wild dogs have been a major problem across all grazing industries in Australia. The issue is not just a matter of direct stock and financial losses, although these losses run into many millions of dollars each year; wild dogs are also increasingly acknowledged as a source of spread for serious animal-borne diseases. They are highly damaging to regional economies, to local wildlife, and are a significant animal welfare concern.

In response to this major industry concern, Wool Producers Australia initiated the National Wild Dog Action Plan Development Project in February 2013. The aim being to bring together all livestock peak bodies, research organisations and Commonwealth/State and Territory governments to confirm a consensus approach to managing the threat of wild dogs.

The development of the Plan showcases how a government/industry collaboration can quickly harness both goodwill and action against threats to Australian livestock industries. Download a copy from http://www.pestsmart.org.au/national-wild-dog-action-plan/

NSW Biosecurity Strategy 2013-2021

Biosecurity is defined as the preventative measures taken to protect the economy, environment and community from the negative impacts associated with pests, diseases and weeds.

The NSW Biosecurity Strategy sets out the government’s long-term objectives for how we will work together to manage biosecurity in NSW.

The NSW Biosecurity Strategy is based on the principle of shared responsibility and has been prepared to increase awareness about biosecurity issues and provide a framework for biosecurity management in NSW.

The strategy will be underpinned by policies, individual program strategies and implementation and operational plans that will provide a detailed road map of how the outcomes of this Strategy will be achieved.


NSW Invasive Species Plan (2018–2021)

The principal strategies for managing invasive species (including: weeds, vertebrate and invertebrate pests) in NSW are outlined in the NSW Invasive Species Plan. The Plan aims to prevent new incursions, contain existing populations and adaptively manage widespread species. The goal is to foster a cooperative culture where all relevant parties contribute to the aim of minimising the impacts of invasive species in NSW. The Plan outlines a coordinated response by stakeholders to minimise the impacts of invasive species in NSW using a risk-based approach. The Plan guides current and future investment in invasive species management and includes existing and planned activities as well as new projects that will commence as agencies redirect resources in response to the priorities in the Plan.

The NSW Invasive Species Plan identifies four Goals to realise its vision:

1. Exclude – prevent the establishment of new invasive species.
2. Eradicate or contain – eliminate, or prevent the spread of new invasive species.
3. Effectively manage – reduce the impacts of widespread invasive species.
4. Capacity building – ensure NSW had the ability and commitment to manage invasive species.

NSW Wild Dog Management Strategy 2017-2021

The primary objective of the NSW Wild Dog Management Strategy is to improve the management of wild dogs in NSW. In particular it aims to minimise the negative impacts of wild dogs on primary production, the environment and the wider community by clearly defining the roles and responsibilities of land managers and other community members in managing wild dogs. This objective aligns with Goal 3 of the NSW Invasive Species Plan to reduce the impacts of widespread invasive species.


State Pest Animal Committee

The State Pest Animal Committee was established in 2017 and has effectively replaced the previous NSW Pest Animal Council. Its terms of reference are broadly consistent with those of the State Weed Committee and key responsibilities include:

- overseeing a consistent approach to the formation and ongoing operation of Regional Pest Animal Committees
- overseeing development of tenure-neutral Regional Pest Animal Management Plans across the State, to ensure they are effective, risk-based and inclusive of all major stakeholders
- advising on regional and State pest animal policy and regulation
- overseeing the implementation of key policy and strategy documents such as the Wild Dog Management Strategy
- improving the consistency and comprehensiveness of reporting on pest animal management inputs and outcomes across the State
- considering response options for managing high-risk incursions.

Principles of strategic pest animal management

Impacts of vertebrate pests

The focus of a vertebrate pest management plan needs to be on effectively managing the negative impacts of pest animals rather than on pest animal numbers. Such impacts may include:

- Agricultural – damage to crops, predation of livestock, pasture competition, land degradation, soil erosion, stream turbidity and the spread of weeds.
- Environmental – competition for food and shelter, habitat destruction and predation.
- Social – being a nuisance, damaging infrastructure or culturally important sites, causing traffic accidents and social and psychological effects on primary producers and their families and the general public.
- Disease – vertebrate pest animals may act as reservoirs and spread mechanisms for diseases that affect native wildlife, livestock or people.

Cross-tenure approach

When developing regional or local vertebrate pest management plans consideration should be given to using a ‘cross tenure’ approach. This method involves the removal of all land tenure issues from the planning stage. This focuses on the problem, rather than on land ownership. Once the problem has been identified and the proposed control actions defined, the tenure
boundaries can be reinstated and the resources and costs allocated proportionally or according to some agreed formula.

**Group control programs**

Areas of pest animal abundance tend to be defined by topography, territoriality and food availability. Property fences do not restrict pests, and control strategies should not be limited to artificial boundaries. Most pests are highly mobile and can readily replace those that are killed on individual properties. Unless actions are well planned and coordinated across a broader area of neighbouring properties, individual control programs are unlikely to have a lasting effect. Control programs are likely to be far more effective when multiple landholdings are involved and are strategically planned. Where possible cooperative action should use existing groups such as Landcare, bushfire brigades and social groups, including neighbouring public land managers.

The benefits of group control include better coordination and communication between all stakeholders. For example, during a pest control program everyone in the group knows who is baiting, where baits are laid, how much poisoned bait has been distributed, and when baits are to be picked up or destroyed.

Where a pest may be difficult to control, the use of a group’s resources to help one land manager for the benefit of all justifies a coordinated approach. Peer pressure may be applied judiciously to facilitate control within an area if required.

The success or failure of pest animal control groups is largely dependent on the enthusiasm and dedication of the group coordinator. The coordinator should have credibility, be well respected and able to draw on personal and or other people’s experiences. The coordinator should liaise closely with their LLS Biosecurity Officer.

**Integrated pest management**

Integrated pest management uses a combination of practices and control methods to manage pests. The use of an appropriate combination of control methods is likely to be more effective than a reliance on one or two methods alone. When conducting a rabbit control program for example it may be useful to employ poisoned baits in combination with harbour removal, warren destruction and the use of a biological control agent such as rabbit haemorrhagic disease virus (RHDV).

Control methods that may be considered when developing a local management plan could include:

- killing or removal by baiting, shooting, trapping or mustering
- exclusion fencing or netting
- biological control
- habitat manipulation by removal of surface refuges and warren destruction
- changes in timing of animal husbandry management such as lambing or planting different crops.

**Developing local and regional plans**

Vertebrate pest management plans should provide a clear understanding of the pest problem in a region or local area, identify the impacts of pest animals and set clear and achievable, goals objectives and actions as well as how the plan will be monitored. See Appendix A for more detail.
Legislation

Vertebrate pest control professionals, authorised officers and Authorised Control Officers (ACOs) from government agencies (and other organisations) conduct themselves within the framework of a number of NSW and Commonwealth Acts and subsidiary legislation including Regulations and other legislative instruments. It is most important that all pest control professionals, regardless of who they work for, know and understand their various legislative functions, obligations and powers. This knowledge provides a high level of assurance that vertebrate pests are controlled effectively, efficiently and humanely, that the rights and obligations of all land managers are complied with, and that work health and safety hazards are identified, risk rated and appropriately managed.

The purpose of this section is to provide a summary of the key legislation governing pest animal management in NSW, as well as other related legislation. It is not intended to replace or interpret the legislation and all officers are urged to read the full text of the relevant Acts, Regulations and Orders.


Note: Legislation in NSW for vertebrate pest management and pesticide use varies from legislation in other States and Territories. All agencies and officers from interstate jurisdictions, conducting pest animal management need to be aware of the relevant legislative requirements in their own State or Territory.

Pesticides Act

The Pesticides Act 1999 is the primary legislative instrument controlling the use of pesticides in NSW and is administered by the NSW Environment Protection Authority (EPA).

The underlying principle of the Pesticides Act is that pesticides must only be used for the purpose described on the product label or an Australian Pesticides and Veterinary Medicines Authority (APVMA) permit and all the instructions on the label or permit must be followed. Consequently, all label or permit directions must be read by or explained to the user prior to each use of the pesticide.

The relevant sections of the Pesticides Act are summarised in Table 1 below.

This summary is not intended to replace or interpret the Pesticides Act and Pesticides Regulation 2017 (Pesticides Regulation) it is intended only to give a broad overview of the duties and responsibilities of ACOs as well as public and private land managers.

The Pesticides Act aims to protect and reduce the risk associated with the use of pesticides to human health, the environment, property, industry and trade and to promote collaborative and integrated policies and establish a legislative framework to regulate the use of pesticides.
Table 1. Summary of relevant sections of the Pesticides Act with regard to pest animals

<table>
<thead>
<tr>
<th>Part 1 – Preliminary</th>
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<tbody>
<tr>
<td><strong>Section 4 – Definitions</strong></td>
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<tr>
<td><strong>Harm</strong> an animal or plant includes poison, injure, contaminate, infect, distress, maim, impair or kill the animal or plant.</td>
</tr>
<tr>
<td><strong>Injury</strong> to a person includes any kind of physical or psychological injury whether temporary or permanent, including conditions such as nausea, allergic reaction, dizziness, headache, stress, and running nose or eyes.</td>
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<tr>
<td><strong>Section 5 – Definition of “pesticide”</strong></td>
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<tr>
<td>(1) A pesticide means:</td>
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<tr>
<td>a) An agricultural chemical product (within the meaning of the Agvet Code), or</td>
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<tr>
<td>b) A veterinary chemical product (within the meaning of the Agvet Code) that:</td>
</tr>
<tr>
<td>(i) is represented as being suitable for, or is manufactured, supplied or used for, the external control of ectoparasites of animals and</td>
</tr>
<tr>
<td>(ii) is concentrated and requires dilution or mixing in water before use and</td>
</tr>
<tr>
<td>(iii) is not prescribed under the Stock Medicines Act 1989 as a low risk veterinary chemical product.</td>
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<tr>
<td><strong>Note:</strong> The Agvet Code defines an agricultural chemical product to be a substance or a mixture of substances that is represented, imported, manufactured, supplied or used as a means of directly or indirectly:</td>
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<tr>
<td>a) destroying, stupefying, repelling, inhibiting the feeding of, or preventing infestation by or attacks of, any pest in relation to a plant, a place or a thing, or</td>
</tr>
<tr>
<td>b) destroying a plant, or</td>
</tr>
<tr>
<td>c) modifying the physiology of a plant or pest so as to alter its natural development, productivity, quality or reproductive capacity, or</td>
</tr>
<tr>
<td>d) modifying an effect of another agricultural chemical product, or</td>
</tr>
<tr>
<td>e) attracting a pest for the purpose of destroying it.</td>
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<tr>
<td>The term also includes a substance or mixture of substances declared by regulations to be an agricultural chemical product. However, the term does not include a substance or mixture of substances declared by regulations not to be an agricultural chemical product.</td>
</tr>
<tr>
<td>(2) For the purposes of this Act, a pesticide continues to be regarded as a pesticide even when it is mixed with some other substance (whether or not the other substance is a pesticide). However, a pesticide does not include a prescribed mixture or a mixture of a prescribed class or description.</td>
</tr>
<tr>
<td><strong>Note:</strong> Subsection (2) generally deals with the situation where a pesticide is diluted, or is mixed, before being used. The effect of the provision is that the mixing of a pesticide does not mean that it is no longer a pesticide.</td>
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</table>
Penalties summarised

The Pesticides Act contains penalties of up to $250,000 in the case of a corporation, or $120,000 in the case of an individual for various offences under each Section.

Some Sections provide defences against prosecution such as:

‘On-farm’ exception where a person does not commit an offence if the person establishes:

(a) that the injury or damage occurred, or is likely to occur, only on the agricultural farm land in respect of which the pesticide was used, and
(b) that the person is the occupier of that land or is employed or engaged by the occupier of that land.

‘On-farm’/residential premises exception where a person does not commit an offence if the person establishes:

(a) that the harm occurred only on the agricultural farm land, or the residential premises, in respect of which the pesticide was used, and
(b) that the person is the occupier of that land or those premises, or is employed or engaged by the occupier of that land and or those premises.

Some Sections have a ‘Due diligence’ defence where it is a defence in any proceedings against a person for an offence under this section if the person establishes:

(a) that the commission of the offence was due to causes over which the person had no control, and
(b) that the person took all reasonable precautions and exercised all due diligence to prevent the commission of the offence.

While other Sections state it is a defence in any proceedings against a person for an offence under Sub-section 1 if the person establishes that

(a) (Repealed)
(b) the person complied with the relevant instructions on an approved label that was, at the time of the alleged offence, affixed or attached to, or appeared on, the container for the pesticide that was used; or
(c) the person:
   i. used the pesticide at a concentration or rate lower than that specified in the instructions on an approved label for the pesticide (provided any such lower concentration or rate was not prohibited by the instructions or by any pesticide control order), and
   ii. otherwise complied with the relevant instructions on the approved label.

‘Wilful or negligent misuse’ of pesticides is distinguished from ‘misuse of pesticides’ in the Pesticides Act. There are higher penalties for people who wilfully or negligently misuse pesticides causing injury, damage or harm.

Part 2 – Control of Pesticides

Division 1 – Wilful or negligent misuse of pesticides

<table>
<thead>
<tr>
<th>Section</th>
<th>What it does</th>
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| **Section 7**<br>Injury to persons or damage to property resulting from pesticide use | (1) A person is guilty of an offence if the person wilfully or negligently uses a pesticide in a manner that:
(a) injures or is likely to injure any other person, or
(b) damages or is likely to damage any property of another person. |
| **Section 8**<br>Harm to animals or plants resulting from pesticide use | (1) A person is guilty of an offence if the person wilfully or negligently uses a pesticide in a manner that:
(a) harms any non-target animal or non-target plant, or
(b) if there is no approved label or permit for the pesticide – harms any animal or plant. |
| **Section 9**<br>Material harm to endangered, vulnerable or protected animals | (1) A person is guilty of an offence if the person wilfully or negligently uses a pesticide in a manner that materially harms:
(a) an animal that is a threatened species within the meaning of the Biodiversity Conservation Act 2016, or
(b) any protected fauna within the meaning of the Biodiversity Conservation Act 2016.
(2) When considering material harm the following matters are taken into consideration:
(a) the number of animals harmed,
(b) the type of animals harmed,
(c) the local population of the type of animal harmed. |
### Division 2 – Misuse of pesticides

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<tr>
<th>Section</th>
<th>What it does</th>
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<tr>
<td><strong>Section 10</strong>&lt;br&gt;Injury to persons or damage to property resulting from pesticide use</td>
<td>(1) A person must not use a pesticide in a manner that:  &lt;br&gt;(a) injures or is likely to injure any other person, or  &lt;br&gt;(b) damages or is likely to damage any property of another person</td>
</tr>
<tr>
<td><strong>Section 11</strong>&lt;br&gt;Harm to animals or plants resulting from pesticide use</td>
<td>(1) A person must not use a pesticide in a manner that:  &lt;br&gt;(a) harms any non-target animal or non-target plant, or  &lt;br&gt;(b) if there is no approved label or permit for the pesticide – harms any animal or plant</td>
</tr>
</tbody>
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### Division 3 – General offences relating to the control of pesticides

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<thead>
<tr>
<th>Section</th>
<th>What it does</th>
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<tr>
<td><strong>Section 12</strong>&lt;br&gt;Possession of unregistered pesticide</td>
<td>A person must not possess an unregistered pesticide unless the person:  &lt;br&gt;(a) is authorised to do so by a permit, and  &lt;br&gt;(b) complies with the permit</td>
</tr>
<tr>
<td><strong>Section 13</strong>&lt;br&gt;Use of unregistered pesticide</td>
<td>A person must not use an unregistered pesticide unless the person:  &lt;br&gt;(a) is authorised to do so by a permit, and  &lt;br&gt;(b) complies with the permit</td>
</tr>
<tr>
<td><strong>Section 14</strong>&lt;br&gt;Requirement to read approved label and permit</td>
<td>(1) A person must on each occasion before using a registered pesticide  &lt;br&gt;(a) read an approved label for the pesticide or  &lt;br&gt;(b) ensure that an approved label for the pesticide is explained to the person  &lt;br&gt;(2) If a permit is in force in respect of a pesticide, a person to whom the permit applies must on each occasion, before using the pesticide:  &lt;br&gt;(a) read the permit, or  &lt;br&gt;(b) ensure that the permit is explained to the person  &lt;br&gt;(3) If a pesticide is mixed with any other substance, any requirement under subsection (1) or (2) in relation to that pesticide is not affected.  &lt;br&gt;Note: The mixing of a registered pesticide with another substance still means that the approved label or permit for the pesticide must be read.</td>
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<tr>
<td><strong>Section 15</strong>&lt;br&gt;Using pesticide contrary to approved label</td>
<td>(1) A person must not use a registered pesticide in contravention of any instruction on an approved label for the pesticide unless the person:  &lt;br&gt;(a) is authorised to do so by a permit, and  &lt;br&gt;(b) complies with the permit  &lt;br&gt;(2) If a registered pesticide is mixed with any other substance, the requirement under subsection (1) in relation to the pesticide is not affected.  &lt;br&gt;Note: The mixing of a registered pesticide with another substance still means that the relevant instructions on the approved label for the pesticide must be followed.</td>
</tr>
<tr>
<td><strong>Section 16</strong>&lt;br&gt;Keeping pesticides in container without approved label</td>
<td>A person must not, without reasonable excuse, keep a registered pesticide in a container that does not have an approved label attached to the container.</td>
</tr>
<tr>
<td><strong>Section 17</strong>&lt;br&gt;Use or possession of restricted pesticides</td>
<td>(1) A person must not possess or use a restricted pesticide unless authorised to do so by:  &lt;br&gt;(a) a restricted pesticide authorisation or  &lt;br&gt;(b) a pesticide control order</td>
</tr>
</tbody>
</table>
Part 4 – Pesticide control orders

<table>
<thead>
<tr>
<th>Section</th>
<th>What it does</th>
</tr>
</thead>
<tbody>
<tr>
<td>Section 38 Making of pesticide control order</td>
<td>(1) The Environment Protection Authority may, with the approval of the Minister, make a pesticide control order.</td>
</tr>
<tr>
<td>Section 39 Operation of pesticide control order</td>
<td>(1) A pesticide control order may: (a) prohibit or control the use of a pesticide or class of pesticide that is specified in the order, or (b) authorise the use or possession of a restricted pesticide or class of restricted pesticide that is specified in the order.</td>
</tr>
</tbody>
</table>

Part 6 – Licences and restricted pesticide authorisations

Division 1 Licensing of prescribed pesticide work

<table>
<thead>
<tr>
<th>Section</th>
<th>What it does</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sections 45 to 53</td>
<td>These sections detail the requirements for licensing for specific commercial pesticide work as defined under Part 2 of The Pesticides Regulation 2017. Persons applying pesticides (e.g. 1080 baits) by aircraft are required to hold an Aerial Applicator Pilot licence and also hold or be employed by a business or person who holds an Aerial Applicator Business licence. There are also licence requirements for Pest Management Technician and Fumigation work.</td>
</tr>
</tbody>
</table>

Part 10 – Procedural provisions

Division 6 – Other procedural provisions

<table>
<thead>
<tr>
<th>Section</th>
<th>What it does</th>
</tr>
</thead>
<tbody>
<tr>
<td>Section 111 Causing or permitting offence</td>
<td>A person who causes or permits, by act or omission, another person to commit an offence under a provision of this Act or the regulations is guilty of an offence under that provision and is liable, on conviction, to the same penalty applicable to an offense under that provision.</td>
</tr>
</tbody>
</table>

Part 11 – Miscellaneous

<table>
<thead>
<tr>
<th>Section</th>
<th>What it does</th>
</tr>
</thead>
<tbody>
<tr>
<td>Section 119 Regulations</td>
<td>(1) The Governor may make regulations, not inconsistent with this Act, for or with respect to any matter that by this Act is required or permitted to be prescribed or that is necessary or convenient to be prescribed for carrying out or giving effect to this Act.</td>
</tr>
</tbody>
</table>

Other relevant legislation

The other major pieces of legislation that need to be considered when conducting pest animal management and using pesticides in NSW includes but is not limited to:

- **Biosecurity Act 2015**
  
The *Biosecurity Act 2015* (Biosecurity Act) embeds the principle that biosecurity is a shared responsibility of government, industry and individuals within communities. It provides for a flexible, outcomes-based approach to managing the biosecurity risks and impacts posed by animal and plant pests and diseases, weeds, contaminants and by pest animals.
• **Agricultural and Veterinary Chemicals Code Act 1994**
  The registration of agricultural and veterinary chemicals and their products is conducted through a national registration scheme. All aspects of agricultural and veterinary chemicals up until the point of retail sale are controlled by this Act.

• **Firearms Act 1996**
  Prescribes and controls the use of firearms in NSW.

• **Game and Feral Animal Control Act 2002**
  Game and feral animal hunting in NSW is subject to regulations to ensure the safety of all users of public land.

• **Local Land Services Act 2013**
  The *Local Land Services Act 2013* (LLS Act) outlines the role of LLS in administering, delivering and/or funding programs and advisory services associated with agricultural production and biosecurity.

• **National Parks and Wildlife Act 1974**
  Native birds, reptiles, amphibians and mammals, except the dingo are protected in NSW under this Act.

• **Prevention of Cruelty to Animals Act 1979**
  Regulates acceptable standards for animal welfare.

• **Protection of the Environment Operations Act 1997**
  Principally deals with the regulation of activities that have the potential to pollute or otherwise harm the NSW environment.

• **Weapons Prohibition Act 1998**
  This Act deals with prohibited weapons that may be used in certain pest control programs e.g. suppressors in urban pest control.

• **Work Health and Safety Act 2011**
  Provides a balanced and nationally consistent framework to secure the health and safety of workers and workplaces.

• **Biodiversity Conservation Act 2016**
  This purpose of this legislation is to maintain a healthy, productive and resilient environment for the well-being of the community, now and into the future, consistent with the principles of ecologically sustainable development.

**Pesticide Control Orders**

When the APVMA declares pesticides to be restricted chemical products (RCP), such RCPs can only be supplied to and used by authorised persons under the Pesticides Act. This Pesticides Act requires a person who uses a RCP to be authorised to do so by way of Pesticide Control Orders (PCOs) or a restricted pesticide authorisation. PCOs specify controls over the preparation, use, clean up of equipment and disposal of RCP, bait material, and animal carcasses.

Each PCO is published in the NSW Government Gazette and commences on the date specified in the order. An advertisement is also placed in certain newspapers so that the public are made aware that the EPA has made these orders.
Currently, sodium fluoroacetate (1080), pindone concentrate, 4-aminopyridine, alphachloralose RHDV and para-aminopropiophenone (PAPP) are all classified as RCPs and must be used in accordance with the directions of the relevant PCO.

ACOs should ensure that they always have current PCOs for the RCPs they issue to land managers. ACOs are also required to provide land managers with a copy of the PCO for each RCP they issue to land managers. PCOs can be downloaded from the EPA website at http://www.epa.nsw.gov.au/pesticides/pco.htm

All pesticide users should take reasonable care to protect their own health and the health of others when using a pesticide. They should also make every reasonable attempt to prevent damage occurring from the use of a pesticide, such as off-target drift onto sensitive areas or harm to endangered and protected species.

Pesticides Regulation

The Pesticides Regulation specifies amongst other things, the qualification required for a person using pesticides when carrying out agricultural operations, the need to keep detailed records, for commercial users to be trained and for public authorities and others to notify when they are intending to apply pesticides to public land to which the public has access.

Records

Records must be made within 24 hours of application, be made in legible English, and kept for not less than 3 years.

If a contractor, LLS or other authority applies pesticides to a person’s property, then they must provide a copy of the record of pesticide application to that person.

While no set form has to be used, records must include the following:

- The full product name of the pesticide used, such as 1080 Poison in chicken wingette baits, Foxoff Fox bait etc.
- Description of the situation in which you used the pesticide, such as rabbit control in pasture.
- The rate of application and the quantity of pesticide bait applied e.g. amount of baits per hectare and total number used.
- A description of the equipment used such as bait layer, using cut furrow-trailing method.
- The property address and a delineation of the area where the pesticide baits were laid, such as, 2km trail of bait laid in paddock D, a sketch of the area may be useful.
- The date and time of the application including start and finish times and the date baits were retrieved.
- The name, address and contact details of the person who applied the pesticide.
- The name, address and contact details of the owner or the person who has the management or control of the land.
- Weather conditions – this only applies to using spray equipment but the EPA recommends when aerially applying vertebrate baits that when starting, wind speed and direction and any significant change during application should be recorded.


The vertebrate pesticide usage and supply record (such as the Financial and Rural Management System (FARMS) is an inventory of vertebrate pesticide use by the LLS or other authorised agencies. While it shows details of type of baits, who was issued with baits and the property where baits were destined, it is not a record of pesticide use. That must be made by the end
user, the land manager, employee or contractor placing the baits, including LLS, NPWS or other government agency staff who lay baits on public or private land.

**Record keeping for aerial application of baits**

Different record keeping rules apply to situations where poisoned baits are distributed from an aircraft. Baits can only be applied from an aircraft if the pilot holds a NSW EPA Aerial Applicator Pilot Licence, has an agricultural rating and the aircraft has an air operator’s certificate endorsed for pesticide application and is employed or is the holder of an EPA Aerial Applicator Business licence. Bait droppers need to have at least Australian Qualifications Framework (AQF) level 3 chemical use accreditation. A pesticide application record applicable to the bait line must be completed by the aerial contractor and supplied to the land manager. Contact the EPA if further information on record keeping rules for aerial pesticide application is required.

**User training**

All pesticide users must complete the prescribed training qualifications in pesticide use and renew this training every five years by completing a refresher course. This includes anyone who uses in their work any type of pesticide which includes herbicides, insecticides, fungicides, bactericides, poisoned baits, poisoned lures and rodenticides.

If a person is working as a pest management technician, conducting fumigation or working as an aerial pesticide applicator under the Pesticides Act the following training requirements do not apply as there are separate training requirements necessary for these types of work.

The minimum prescribed competency level of accreditation for chemical use is AQF level 2. Owner-applicators and pest control personnel are required to be accredited at AQF level 3. ACO’s who issue 1080 and pindone have the added responsibility of supplying and instructing land managers on the safe and effective use of these pesticides and thus must have chemical use accreditation at AQF level 4.

Land managers who only use pre-prepared or manufactured 1080 poisoned baits, PAPP manufactured products, RHDV baits and pindone pre-prepared products to control vertebrate pests, and who use no other pesticides may complete the upgraded Vertebrate Pesticide Training course provided by specially trained LLS staff to satisfy the minimum training requirements for pesticide use.

**Pesticide Use Notification Plan**

The Pesticides Regulation requires a public authority to develop a Pesticide Use Notification Plan (PUNP) for public spaces where pesticides are applied and to which the public has access. Public spaces requiring a PUNP may include gardens, picnic areas, playgrounds, parks, sporting fields, road verges, electricity or rail easements legally accessible by the public, national parks, state forest, and crown land. Water bodies on public lands must be included in a PUNP if aquatic weeds are to be sprayed or if pest fish are to be controlled by application of pesticides to water.

The plan has to define the means by which the community will be notified, such as on-site signs, letters to affected community members, and news items in the local paper or on the local radio.

The PUNP should set out what information will be provided to the community. This should include, the product name of pesticide applied, the purpose for which the pesticide was applied such as fox control, the place, the date, applicator contact details (phone number and/or internet address) and warnings in regards to restricted entry during the application period.
Agricultural fumigant use

The occupational use of certain fumigants in NSW requires an EPA fumigation licence which is issued under Section 49 of the Pesticides Act – previously this was a function carried out by NSW WorkCover (now called SafeWork NSW). The LLS, NPWS and landholders have an exemption from the requirements of having a fumigation licence for the application of aluminium phosphide. These exemptions currently have an expiry date and will be renewed by the EPA prior to reaching their expiry date.

Regulation of fumigants in regards to work health and safety provisions continues to apply under the Work Health and Safety Regulation 2017 of SafeWork NSW.
Governance

Control of vertebrate pest species in NSW

Under the Biosecurity Act government, industry and the people of NSW share the responsibility for protecting the economy, environment and community by preventing, eradicating and managing the negative impacts of pest animals.

Regional Strategic Pest Animal Management Plans (RSPAMPs) have been developed for each of the Local Land Services (LLS) regions in consultation with public and private landholders and key regional stakeholders.

The RSPAMPs inform community members of the priority pest animal species within their region, provide guidance on the general biosecurity duty and other regulatory provisions in place to regulate the management of pest animals. They also provide examples of control and containment outcomes that a landholder or other community member can participate in to discharge their general biosecurity duty.

Exceptions or limits to the protection of native animals

Some native birds are not protected in certain parts of NSW because they are either agricultural or pastoral pests:

- Sulphur-crested cockatoos and galahs have been declared 'locally unprotected' west of the Great Dividing Range (in the Central and Western divisions of the state), because of the damage they do to grain and oilseed crops.
- Crows and ravens (corvids) are protected only in the counties of Camden (Illawarra region), Cumberland (Sydney basin) and Northumberland (Hunter region), because they are blamed for the deaths of lambs in other areas.
- The purple swamphen (*Porphyrio porphyrio*) is not protected in 10 irrigation districts and areas in the Riverina region, where the species causes considerable damage to irrigated crops such as rice.

The householder has the responsibility for rat and mouse control in urban areas, and control is often carried out by private pest control firms. When mice reach plague proportions in rural areas, individual land managers may attempt control. LLS and NSW Department of Primary Industries (DPI) may provide advice on control.

Domestic dog issues are handled by local government under the *Companion Animals Act 1998*.

If native animals are shown to be a threat to human safety, damaging property and/or causing economic hardship, land managers may apply for and the NPWS may issue a licence under the NPW Act to manage the impact.

NPWS regional pest management strategies aim to manage weeds and pest animals in national parks and reserves and for threatened species across NSW. These strategies provide a strategic approach to pest management on lands managed by the NPWS under the *National Parks and Wildlife Act 1974 (NPW Act)*, and feed into the delivery of the NSW Biosecurity Strategy 2013-2021. NPWS pest management is focused on threatened species protection, where pests are likely to affect neighbouring lands and where other park values are affected.

Two legislative instruments drive the focus of activities. Under the NPW Act activities are undertaken to protect the environment and manage pest animals on NPWS estate. The *Biodiversity Conservation Act 2016* aims to support conservation and threat abatement actions to slow the rate of biodiversity loss and conserve threatened species and ecological
communities in nature and to support and guide prioritised and strategic investment in biodiversity conservation.

**Responsibilities for vertebrate pest management in NSW**

**Department of Primary Industries – Biosecurity**

The DPI has an enabling role for pest animal management in NSW. Its primary responsibilities are:

- establishment of the regulatory framework for pest animal management in NSW
- facilitation of the State Pest Animal Committee to promote coordination and improvement in pest animal management
- delivery of training in the management of pest animals
- administration and governance of treasury funding allocated to pest animal management
- delivery of state level reports on the management of pest animals including: NSW State of Biosecurity report, NSW Invasive Species Plan and the publication of distribution maps for priority pest animals.

**Local Land Services**

LLS are formed under the *Local Lands Services Act 2013* (LLS Act). LLS bring together agricultural production advice, biosecurity, natural resource management and emergency management into a single organisation. LLS are also charged with developing LLS Strategic Plans to give state and region direction and priorities.

In relation to pest animal management Local Land Services works with the community and relevant stakeholders and Regional Pest Animal Committees to prepare and deliver Regional Strategic Pest Animal Management Plans.

**Environment Protection Authority**

The EPA regulates the use of all pesticides in NSW, after the point of supply under the Pesticides Act and the Pesticide Regulation. This involves developing and enforcing pesticide use laws for NSW, such as producing PCOs which stipulate how vertebrate pesticides which are RCPs can be used to reduce exposure and minimise impacts on the environment, non-target animals and plants, people and trade. The EPA also provides information and advice on management of pesticides.

**Office of Environment and Heritage - National Parks and Wildlife Service**

NPWS is responsible for managing National Parks and Nature Reserves for the protection and conservation of biodiversity in NSW. This involves the development and implementation of Regional Pest Management Strategies which prioritise programs and specific actions for invasive species including vertebrate pests on lands managed under the NPW Act.

NPWS also works with other government agencies and the community to protect biodiversity and agriculture on neighbouring private lands. It also provides advice and undertakes species recovery, threat abatement and community education programs and research to ensure that threatened species are protected.

**Office of Environment and Heritage - Regional Operations Group**

Delivers integrated and customer focused services at the regional and local level to strengthen communities and partnerships across NSW. This includes services, programs and grants to support land use planning, threatened species, native vegetation, education, community engagement, energy efficiency, volunteering, environmental water management, coast and flood protection, compliance and enforcement, adapting to a changing climate and private land conservation.
Land managers, communities and special interest groups

Effective long-term pest animal management requires the cooperation of a majority of land managers in any area. Private land managers may be obligated under Pest Control Orders to control some pest animals on their land. Pesticide Control Orders assist in allowing for coordinated pest animal control programs across affected land tenures. Acknowledgement should be given to the important role of community volunteers and special interest groups in the management of vertebrate pests. These individuals and groups provide hundreds of hours each week assisting in the management of private and public lands through direct vertebrate pest control and monitoring activities.

Department of Industry - Lands

DOI-Lands is a significant land manager in NSW administering and managing Crown Land. DOI-Lands develop and implements invasive species management strategies on land under its direct control. It also supports activities undertaken by community groups and other stakeholders that manage land on its behalf.

Forestry Corporation

Forestry Corporation of NSW is the largest manager of commercial native and plantation forests in NSW. Managing more than two million hectares of forests, the corporation balances the need for products and services, such as timber and recreational opportunities, with the needs of forest ecosystems to ensure sustainable management of the State’s forests. In terms of pest animal management, Forestry Corporation has developed and implemented Pest Animal Management Plans, and works with other government agencies as well as adjoining landowners.

Department of Primary Industries - Game Licensing Unit

The Game Licencing Unit within DPI is established under the Game and Feral Animal Control Act 2002. The Game Licensing Unit is responsible for the administration of public land hunting in NSW. This includes hunter licensing, hunter education, assessing compliance of game hunters and enforcing hunting regulations.

Local government and other public land managers

All public land managers including Local Councils and County Councils have an obligation under the LLS Act to manage declared pests on land they own, occupy or manage.

Industry

Industry has three main roles in invasive species management:

- Managing pests on land and in aquatic environments used for production.
- Managing the trading of known invasive species held by zoos or collectors.
- Preventing vectors or pathways for invasive species establishment through movement of goods, produce and equipment or related activities.

Vertebrate pest management planning

Local Land Services strategic plans

The LLS Act under Part 4 specifies the requirements for both State-wide and Local Strategic Plans. Each LLS is required to develop a Local Strategic Plan under Part 4 of the LLS Act. These strategic plans must address the state priorities for LLS. One of these priorities is biosecurity, including animal pest and disease and plant pest and disease prevention, management, control and eradication.
The purpose of the strategic plans is to set the vision, priorities and overarching strategy for LLS at the state and local level, with a focus on appropriate economic, social and environmental outcomes. The State Plan will have effect for a period of ten years whilst the Local Plans will have effect for five years.

**Local Land Services Regional Strategic Pest Animal Management Plans**

Each LLS will have a Regional Strategic Pest Animal Management Plan (RSPAMP) for its region as part of their documented planning, monitoring and control work regarding pest animals.

The RSPAMPs:
- identify the priority pest species in each local area
- outline management outcomes for each pest type
- outline local management approaches and provide local guidance on how people can contribute to managing pests animals.

LLS also:
- provide advice, education and guidance to land managers about pest management
- coordinates local pest management programs and distribute Restricted Chemical Products vital for effective management of many priority pest animals.
- enforce the regulations when necessary.

Appendix C provides guidelines.

Local Pest Animal Management Plans (LPAMP) should be developed for the priority pest animal species listed in the RPAMP. A LPAMP allows priority pest animals to be managed efficiently across-tenure, tailored to a community’s specific needs and available resources with a process for monitoring and review of the plan’s success.

**NPWS Branch Pest Management Strategies**

NPWS Branch Pest Management Strategies (BPMS) detail priorities for each region, including actions listed in the Saving our Species Plans and Threat Abatement Plans as well as other actions such as wild dog and feral pig control to protect neighbouring properties and site-based weed control.

NPWS BPMS were developed in consultation with the community. They aim to minimise the adverse impacts of pests on biodiversity, protected areas and the community. They achieve this by identifying the highest priority programs and focusing on these, ensuring that actions are achievable, and delivering measurable outcomes.

The BPMS recognise that pest species are a problem across the landscape. Programs are developed and often carried out in collaboration with neighbours, other government agencies, LLS, local councils, regional pest committees, universities and community groups.

**NPWS Programs**

NPWS pest management programs are defined by;
- Reserve: where the program is taking place
- Site name: clearly identifies where in the reserve(s)
- Target pest animals or weeds: may be multiple species
- Asset at risk: ecological, heritage, agricultural, economic
- Aim of control: eradication, containment or asset protection
- Action: control techniques and monitoring
- Priority: critical, high, medium, low.

Prioritisation ensures resources are given to programs and actions where it is most needed for protection of NPWS assets (e.g. biodiversity) and our neighbours’ assets (e.g. livestock).
Four critical priorities are:

- Threatened Species Conservation.
- New and Emerging pest species.
- Economic Impacts on neighbours.
- Health and Disease.
Vertebrate pesticides

This section provides information on the preparation and use of pesticides to control vertebrate pests. It also covers the authorisations to obtain, store and supply the RCPs; 1080, pindone concentrate, PAPP and RHDV.

These pesticides have significant economic, social, public health and environmental benefits, however, many vertebrate pesticides are toxic to non-target species and there are environmental risks associated with their use. Consequently they are strictly regulated in NSW. It is essential that suppliers and users of vertebrate pesticides comply with legislation for pesticide use. Vertebrate pesticides need to be used in a safe, efficient and economical manner to maximise their benefits and to ensure their continued availability. Pesticides are just one element of pest management and should be used in combination with other techniques as part of an integrated pest animal management plan.

A number of RCPs are available for use in NSW under the Agricultural and Veterinary Code Act 1994. A summary of the main vertebrate pesticides currently registered and permitted for use in NSW are listed in Appendix D.

A number of government agencies and organisations will have their own standard operating procedures in relation to vertebrate pest use and management. These must be followed in addition to this document.

Access to restricted chemical products

The PCOs issued under Section 38 of the Pesticides Act specify the requirements around the possession and use of RCPs such as 1080 liquid concentrate, pindone liquid and powder concentrate and RHDV for the preparation and supply of baits by ACOs subject to the conditions specified in the relevant PCO or APVMA permits.

An ACO is a person who is a member of staff of LLS, Border Fence Maintenance Board, DPI, OEH or other NSW public authority and has undergone specific training and received accreditation in the storage, preparation and use of these RCPs. The requirements to gain and maintain accreditation as an ACO are outlined in the PCOs.

Accessing pindone liquid and powder concentrates only

A Commercial Pindone Officer (CPO) is a person who is a pest management technician who is permitted to access pindone liquid and powder concentrates ONLY after the person has undergone specific training and received accreditation in the storage, preparation and use of pindone concentrates. The requirements to gain and maintain accreditation as a CPO are outlined in the PCO for Commercial Pindone Officers.

Only an ACO and CPOs may use pindone concentrate to prepare fresh pindone bait material as described under the Access to restricted chemical products heading above. However, ready to use pindone bait products are available over the counter from rural merchants and some LLS offices.

Vertebrate pesticide usage and supply record

Separate, clear and accurate registers (manifests) must be kept by all ACOs using vertebrate pesticide concentrates and manufactured products. Records in these registers must be made within 24 hours of the activity and kept for at least three years from the last date recorded in it.

The register must contain every usage and supply record and may be a hard copy or electronic. Only ACOs who use the vertebrate pesticides may make or approve entries into the usage record, subject to ACOs who work together having some prior agreement.
Auditing vertebrate pesticides

- For all RCP concentrates and manufactured products monthly audits must be undertaken by the ACO and submitted to the 1080 Supervisor each month. This should be within the first three working days each month where practicable or by local agreement.

- The 1080 supervisor will undertake twice yearly audits of all RCP concentrates and manufactured products.

- For all other vertebrate pesticides a minimum of a quarterly audit is undertaken by the ACO responsible for those pesticides. The 1080 supervisor must be shown the results of these audits and they must audit these pesticides annually.

Auditing 1080 liquid concentrate

To undertake audits of 1080 liquid concentrate ACOs should measure by weight. Use a set of accurate digital scales that will measure with 1 gram graduations. Scales need to be calibrated and equipment maintained as part of the twice yearly audits by the 1080 supervisor.

For the LLS, when receiving 1080 liquid from your supervisor, transfer the amount in mls to your register that has been calculated by your supervisor. This happens automatically for LLS staff through FARMS transfer. This calculation is made by subtracting the average bottle weight, including cap, label and directions (from manufacturer), from the total weight, bottle, cap, label, directions and 1080 liquid. If you receive 1080 direct from manufacturer like NPWS does, then apply the same rule and add this amount to your register.

Prior to using a new bottle of 1080 remove the wrapping and directions, leave the label intact. This will remove the possibility of 1080 being soaked into the directions.

To audit 1080 liquid concentrate, (Bottle)

1. Weigh the container of 1080 liquid concentrate, cap on.
2. Subtract the average weight of the container + cap. (* from manufacturer see below)
3. This gives the weight of 1080 solution.
4. Enter this amount into your register as mls.
5. To audit 1080 liquid concentrate (injection gun with bottle attached or injection gun, bottle and plastic line).
6. Empty injection gear of all 1080 solution and weigh.
7. Substitute this weight for average container weight in 2 above and then follow same directions to 4.
**Worked example**

Audit of 1080 container

Total weight of container + 1080 liquid concentrate = 750 g

Weight of container (supplied by supplier 1L bottle) = 80 g

Amount of 1080 liquid concentrate = 750 g – 80 g = 670 g

670 mls is the audit amount entered into the register

* ACTA Bottle, cap, label attached (booklet removed)
  
  200 ml = 28 g
  
  1 L = 80 g
  
  5 L = 220 g

* PAKS Bottle, cap and label attached
  
  200 ml = 30g
  
  1 L = 80g

**Minimum information for usage and supply records**

The following is a list of information that should be recorded when completing usage and supply records. Appendix E provides the list below in a format that can be ticked and used for recording purposes.

- Type of vertebrate pesticide register e.g. 1080 liquid concentrate or Foxoff.
- Date - month and year of record.
- Agency or organisation’s name.
- ACO/s name/s.
- Carried forward balance.
- Usage and supply records to end users.
- Daily receipt (from), transfer (to) record and use for that month.
- Balance left in stock.

The usage and supply records to end users.

- Bait type such as red meat (wild dog) carrot (rabbit).
- Number or quantity (kg) of bait used.
- Name of person the bait was supplied to.
- Location of bait usage (property name).

**Vertebrate pesticide storage**

Below is the list of essential storage requirements (including *Work Health and Safety Regulation 2017* (WHS Regulation) and the Australian Standards *(AS 2507-1998 The storage and handling of agricultural and veterinary chemicals)*) that the ACO’s employer must comply with for all vertebrate pesticides. Additional requirements for specific vertebrate pesticides must also be complied with and are listed under the relevant headings on the following pages.
General storage requirements

The general pesticide storage facility requires all of the following features:

- Located in a dry area out of direct sunlight.
- Located in a secure separate building or in a secure segregated area that is not used as an office.
- Concrete or impervious floors bunded with spillage containment.
- Storage area shall be ventilated as required (dilution, natural or mechanical ventilation).
- Impervious shelving and spill control trays on shelving.
- The store should be constructed from non-combustible materials.
- Locked room and/or caged area accessible only to ACOs and those persons approved by ACOs.
- Lighting sufficient to allow labels to be read i.e. at least 200 lux, but not so that labels are exposed to direct sunlight, which causes deterioration.
- Spills kit.
- Appropriate fire extinguisher(s).
- Free access to safety showers and eye wash facilities (or portable shower and eyewash kits).
- All electrical installations shall be kept to a minimum.
- Fuse board with RCD must be kept outside the building.
- Emergency contact details – Poisons Information Centre (131126), 000 for ambulance, police and fire brigade, local hospital and doctor, State Emergency Services, SafeWork NSW (131050).
- Appropriate signage (see examples Figure 1), (Clause 353 of WHS Regulation requires a safety sign to control an identified risk in relation to using, handling, generating or storing hazardous chemicals at a workplace and warn of a particular hazard associated with the hazardous chemicals). For placarding refer to SafeWork NSW guidelines for “Placarding for storage of hazardous chemicals”.
- When manifest threshold quantities of hazardous chemicals are involved, provide a manifest and site place (Division 4 Placards as per WHS Regulation 2017) and notify SafeWork NSW of this circumstance.
- A current Safety Data Sheet (SDS) for every chemical and poison should be located in a readily accessible weatherproof container positioned outside the building where they can be easily retrieved by emergency service personnel in case of an incident.
- Personal protective equipment (PPE) for handling of pesticides must be retained on the premises in a separate cabinet.

Figure 1. Example of signage for pesticide storage facility.
For all workplace purposes GHS pictograms can be used and when chemicals stored above the placard quantities, your above Dangerous Goods pictograms can be used see Figure 1.

For details such as displaying placards, maintaining placards, placards for bulk storage, placards for packages etc. refer WHS Regulation, Schedule 13 – Placard requirements.

The best practice for operation of the pesticide storage facility encompasses:

- Segregation of classes of chemicals from one another e.g. flammable from non-flammable product aerosols by three metres; combustible liquids from flammable solids by five metres; corrosive substances from other chemicals by three metres (refer the storage incompatibilities segregation guides).
- Scheduled poisons shall be stored as required by poisons schedule (as per manufacturer’s SDS)
- Storage of liquid containers beneath containers with dry formulations e.g. powders and granules.
- Ensuring all chemical containers are sealed and labels intact.
- Do not decant or dilute the chemicals inside the storage area.
- Use of older stock first – this is facilitated by the dating on the storage register.
- Keep the amount of flammable and combustible substances at the lowest practicable quantity.
- Opening flammable liquid containers, Dangerous Goods Class 3, outside the chemical store in a purpose built area or a well-ventilated area.
- Securing leaking or damaged containers within a larger drum or by decanting into a secure container and transferring the label or label information to the new container.
- Keeping packages and liquid containers at least 600 mm from the inner crest of the bund wall.
- Keeping the storage clear of residues and combustible wastes.
- Clearing the ground outside the store of combustible vegetation or refuse for at least three metres.
- Ensure entry and exits are not blocked and do not store or handle chemicals in such a way that block entrance or exit in an emergency.

Additional storage requirements for vertebrate pesticide concentrates

- A bund made from concrete or impervious material, able to contain a spillage of at least 100% of the largest container or 25% of the total volume of liquid being stored, whichever is largest.
- A locked storage cabinet constructed from metal accessible only by ACOs.
- Access to water for washing, particularly an eye wash.
- The storage cabinet must be affixed to the building.
- The building where hazardous chemicals are stored and the cabinet must have appropriate safety signage to control an identified risk and warn of a particular hazard associated with the hazardous chemicals.
- For placarding refer to SafeWork NSW guidelines for “Placarding for storage of hazardous chemicals”.
- For storage of pindone liquid the storage cabinet can be a locked refrigerator.
Additional storage requirements for manufactured baits and Canid Pest Ejector capsules

- A locked storage cabinet constructed from metal accessible only by ACOs. This storage cabinet must be in a locked room and/or caged area accessible only to ACOs and those persons approved by ACOs.
- The building where hazardous chemicals are stored and the cabinet must have appropriate safety signage to control an identified risk and warn of a particular hazard associated with the hazardous chemicals.
- For placarding refer to SafeWork NSW guidelines for “Placarding for storage of hazardous chemicals”.
- The storage cabinet must be affixed to the building.

Additional storage requirements for rabbit haemorrhagic disease virus

- Store RHDV product in a locked refrigerator below 4 - 8°C.
- RHDV freeze dried product is to be stored in a locked storage cabinet constructed from metal accessible only by ACOs. This storage cabinet must be in a locked room and/or caged area accessible only to ACOs and those persons approved by ACOs.

Additional storage requirements for fumigants

- Cross-flow ventilation by vents in opposite walls above bund height.
- At least five metres from any ignition source.
- The building where fumigants are stored and the cabinet must have appropriate safety signage to control an identified risk and warn of a particular hazard associated with the hazardous chemicals.
- For placarding refer to SafeWork NSW guidelines for “Placarding for storage of hazardous chemicals”.
- Access to water for washing, particularly an eye wash.

Aluminium phosphide:

- Should be stored away from water and other liquids which will cause immediate release of phosphine gas.
- At least 5 m away from Schedule 6 and 7 poisons such as 1080, Larvacide® (chloropicrin) and pindone.
- Do not store aluminium phosphide containers in a small enclosure that has no ventilation.
- Dispose of the residues/wastes appropriately as per SDS directions.

Chloropicrin:

- Should be stored away from extreme heat.
- Do not store near oxidising material or water.
- Chloropicrin must be stored securely in a tray capable of holding at least 100% of the largest container or 25% of the total volume of liquid being stored, whichever is largest.
- Soda ash or lime should be stored to be used to neutralise any chloropicrin spillage that occurs. Keep approximately an equal amount of soda ash or lime and chloropicrin. That is, if there is usually about 50 L or chloropicrin in store then keep about 50 kg of soda ash or lime on hand.
- Refer to SDS for spill management.
Carbon monoxide storage

DEN-CO-FUME® fumigant cartridges are classified as Dangerous Goods Class 1.4G and must be stored and transported safely. When DEN-CO-FUME® cartridges are stored in bulk consider Dangerous Goods Storage related Regulatory requirements. It is flammable, so consider compatibility and separation issues.

Store carbon monoxide fumigant cartridges in the closed, original container in a dry, cool, well ventilated area out of direct sunlight and away from other heat or ignition sources or oxidising agents.

Bait preparation vertebrate pesticides

Bait preparation sites

Facility

The bait preparation area must meet the following conditions:

- Bunded or appropriately sloped impervious floor, drained for effective washing down into a dilution pit or septic system. The dilution pit or septic system, of at least 50 L capacity, must be accessible for sampling. All liquid waste must be able to be held for at least one hour if it enters a sewerage system unless approvals have been received from the relevant authority for liquid waste to flow directly into the sewerage system.
- Drain must be sealable and closed off at all times other than when the equipment or the area is being hosed down.
- Sealed floor that must be able to contain the total volume of concentrate in use if the entire contents were spilled.
- Drainage of waste, rinsate and wash down from each facility, whether into a septic or sewerage system, is regulated by local government. Contact the relevant council for the requirements for waste disposal systems.
- Labelled equipment used for measuring and handling pesticides must be thoroughly rinsed and cleaned and securely stored in an area only accessible by an ACO. All equipment used for mixing 1080 bait and preparing ejector capsules must be clearly labelled ‘1080 Poison’ in large red lettering.
- Adequate space for bait cutting and mixing machines, packaging of baits and temporary storage of poisoned baits awaiting distribution.
- Tap with a hose for washing down the facility and equipment after bait has been prepared.
- Provided with sink or hand basin with water facility
- Absorbent material such as hydrated lime to soak up any major spillage.
- Other people can access the facility to use bait cutting machines and to load bait if under the authorisation or supervision of the ACO.
- Access to the 1080 locked safe or metal storage locker is ONLY permitted by an:
  - ACO
  - 1080 Supervisor
  - An authorised DPI Officer or
  - EPA or SafeWork NSW inspector.
Figure 2. Example of a facility for storage and bait preparation that will satisfy requirements.

1. Lockable 1080 storage locker.
2. Locker for gloves and respirator.
3. Hand basin.
4. Sealable floor drain into dilution pit or absorption pit.
5. Locker for plastic bags, etc.
6. Carrot cutter (optional).
7. Tap with hose.
9. Lockable door.
11. Fire-fighting equipment.
12. First aid kit.
15. Ventilation.
16. Ventilation above the mixing area.
17. Distance between the chemical storage and bund crest (600 mm distance).
18. Appropriate signage on the door.
**Field preparation**

Vertebrate pesticide baits may be prepared in the field providing the following conditions are met:

- A risk assessment for in-field bait preparation must be carried out by the ACO, this will provide a guide for burial of rinsate and signage requirements.
- Only ACOs are permitted to handle 1080 and pindone concentrate.
- All PPE as required such as washable hat, overalls, chemical apron, gloves, eye protection, respirator or duck mask, and plenty of water are taken to the site.
- The concentrate is transported in a sealed and locked metal or strong plastic box securely fixed to the vehicle, with appropriate signage.
- All bait preparation and mixing should be done over an impervious surface to ensure any spills, chaff or blood is contained for appropriate disposal.
- At the completion of bait preparation all equipment must be washed down before leaving the site. If practical rinsate should be drained into a burial pit. The burial site must be clear of permanent and ephemeral waterways to avoid pollution.
- Alternatively all rinsate may be collected into a hard plastic container labelled “poison” in large red lettering and transported to the bait preparation facility for disposal.
- See Appendix E for a checklist that can be used to assist with meeting the record keeping requirements when completing pesticide usage and supply records.

**Equipment for bait preparation**

**Preparing bait material for poisoning**

When preparing bait material the ACO must ensure that no unauthorised person(s) are in close proximity to ensure their safety and the security of the concentrate being used.

Prior to bait preparation ensure that the plug must be in all drains to prevent any off site spillage.

It may be appropriate to notify office staff that bait preparation is being undertaken and advisable to have a communication protocol in place.

**PPE - Personal protection equipment**

The minimum personal protection equipment to handle concentrate is:

- impervious gloves
- cotton overalls buttoned to the neck and wrists or chemical apron
- washable hat
- impervious footwear
- face shield or eye protection when injecting baits, and
- P2 dust mask when mixing dusty baits such as grain or pellets.

**Equipment**

Equipment must include:

- Towel, soap, or washing facilities.
- Plenty of clean water.
- Laboratory grade equipment is required whenever preparing baits or measuring concentrate. Laboratory grade equipment must be used as most domestic measures are inaccurate; some vary by up to 50 mL.
- A set of accurate digital scales that will measure with at least 1 g graduations.
Other equipment may be required depending on type of baiting and include:

- Injection gun, with 0.1 mL graduations. A plastic shield that fits behind the needle may be used to protect the user from splash back. The injector gun must be directly attached to a 120 mL or 200 mL bottle or via a clear plastic tube to a 1 L 1080 liquid concentrate bottle.
- Appropriate scales for weighing bait.
- Moree mixer (optional).
- Carrot cutter (optional).
- Draining racks for meat or offal baits (optional).

Figure 3. Injector guns set up to prepare meat baits (Rob Hunt).

**Bait Colour**

All 1080 liquid concentrate purchased from the distributor comes pre-mixed with a blue dye, so there is no need for an ACO to incorporate dye into baits. The reasons for dyeing baits are:

- the distinctive blue colouring readily identifies the bait as being poisoned with 1080
- there is scientific evidence that demonstrates bait uptake by rabbits and feral pigs is not affected by the normal quantities of dye used on baits and it reduces the uptake by birds
- the dye readily indicates where 1080 liquid concentrate moves throughout the bait preparation and distribution process. This should assist ACOs to improve work practices and reduce contamination of clean work areas by 1080 liquid concentrate
- the dye indicates the efficiency of the 1080 bait mixing process.

When baiting is to be carried out in areas known to be populated by satin bower birds a green dyed bait may be used. ACOs can add a yellow dye to the concentrate until it is a definite green.
Bait mixer (Moree Mixer)

The bait mixer provides for even mixing of concentrate with baits and protects the operator from exposure to the poison being used as well as grain dust when grain is used as bait material.

Meat baits are not to be put in the mixer.

- Use appropriate PPE
- Ensure all guards are in place and safety switches are working. Mixers should be fitted with an automatic shut-off so the mixer does not operate with the lid open

Using the bait mixer

Mix baits in a designated bait preparation facility or in another suitable place that will sufficiently contain any spills.

- Load the machine from the top - maximum loads are 25 kg of carrots, 22 kg of grain or 16 kg of pellets. Secure an approved and correctly labelled bag below the chute at the bottom of the mixer.
- A hand pump mounted on the mixer may be used to deliver the poison via spray nozzles that gives an even, flat shaped spray.
- Alternatively the concentrate may be poured over the top of the bait material and then thoroughly mixed to ensure all bait material is coated by the concentrate.
- Mix for a sufficient period of time to ensure even coverage of all bait material (two or more minutes).
- Poisoned bait is removed through an opening in the bottom of the bait mixer. The bait drops through this opening into the appropriately labelled plastic bag, which is secured on hooks on each corner of the runners.
- Wash mixer with water and degreaser or detergent.

Figure 4. 1080 rabbit bait with un-poisoned carrot on left and enclosed bait mixer on right (David Croft).
Mixing in bags

When mixing carrot or grain in small quantities such as 10 kg, it can be mixed manually in an appropriately labelled bag or in a bag before placing in an appropriately labelled bag. Measure the required amount of grain or carrot and mix with the required amount of vertebrate pesticide (depending on species being targeted). Hand mixing should be undertaken using a primary (bag) and secondary (container) containment process in case bags split or fall open. This can be undertaken in the bait preparation room or in the field just prior to use.

Figure 5. An ACO preparing 1080 poisoned grain for feral pig control (Rob Hunt).

Vertebrate pesticide preparation

Application and mixing rates for RCP concentrates and bait material is detailed in Appendix F.

Preparation of meat baits for wild dogs and foxes

1080 bait types for wild dogs and foxes

Shelf stable baits

Shelf stable baits are available from manufacturers.

Fresh meat baits

Fresh meat baits for wild dogs and foxes are prepared locally by ACOs.

Types of boneless red meat that may be used as bait material may include but are not restricted to cattle, horse, deer, goat, sheep meat and kangaroo meat subject to NPWS approval or commercial availability.

The use of offal for wild dog and fox control includes tongue, liver and heart.

Meat baits should be as close to a cube shape as possible to ensure the poison is in the centre of the bait.

Meat baits should be drained to a point where a light skin has formed and the bait is not leaking blood or fluid. Draining removes excess fluid that might otherwise leach out the 1080 liquid concentrate and cause it to collect in the bottom of the appropriately labelled plastic bag.

Meat baits cannot be dried beyond 70% on private land or 80% for National Parks of their minimum required weight as stated below.
If baits have not been picked up due to an unforeseen event, for example, the weather being unsuitable to lay baits the ACO can freeze baits for the purpose of disposal only.

**Preparation of 1080 bait for wild dogs**

Legislative requirements under the Pesticides Act for the preparation of 1080 wild dog baits are detailed in the current 1080 PCO under Schedule 1.

The wet mass for meat or offal should be approximately 250g.

Only the bait materials listed below may be used when preparing 1080 poisoned baits for wild dogs (for ground and aerial baiting):

- Boneless red meat.
- Offal (heart, tongue, and liver).

Where possible all fresh poisoned baits should be used on the day of preparation. Baits must be used within 7 days. Fresh poisoned baits must be kept in the labelled plastic bag/container supplied by the ACO and must not be frozen. Poisoned baits must be stored in a lockable storage area away from children, animal food, foodstuffs, seed and fertiliser.

When determining the number of baits to be supplied to an authorised person (as defined in the PCO) the following conditions apply.

1. A risk assessment must be undertaken and part of this is to determine the area of the baiting location taking into consideration other requirements within the PCO such as distance restrictions.
2. Once the area of the baiting location is determined the maximum number of baits to be supplied must not exceed 1 bait per 5 ha. NB: the area of the baiting location may be less than the total area of the holding.
3. For further information on risk assessments and baiting procedures see Appendix G and K.

**Preparation of 1080 bait for foxes**

Legislative requirements under the Pesticides Act for the preparation of perishable 1080 fox baits are detailed in the current 1080 PCO under Schedule 2.

The minimum wet mass for meat or offal is 100 g.

Only the bait materials listed below may be used when preparing 1080 poisoned baits for foxes:

- Fowl heads.
- Chicken or turkey wingettes.
- Boneless red meat.
- Offal (beef tongue, heart and liver. An exemption to the minimum 100 g weight applies for whole lamb tongue and whole lamb kidney but they must weigh more than 70 g).
- Bird eggs (ground baiting only).
- Manufactured sausage.

The recommended poison injection sites for the various bait types are:

- Fowl heads – inject through the eye into the brain cavity.
- Tongue – inject into the fleshy underneath meat.
- Chicken or turkey wingettes – inject between the two major bones.
- Bird eggs – inject into the pointy end of bird eggs using a vaccinator gun. Seal the hole with paraffin wax, candle wax or similar and place in an egg carton with ‘1080 poison’ in large red letter. Each bird egg must be labelled ‘1080 poison’ in red lettering.

Refer to Appendix F for more details.
Preparation of 1080 capsules for Canid Pest Ejectors

Only ACOs who have successfully completed Ejector training as per the conditions of the 1080 Ejector Capsule PCO can prepare 1080 ejector capsules.

Preparation of poisoned baits for rabbits

1080

Legislative requirements under the Pesticides Act for the preparation of 1080 rabbit baits are detailed in the current 1080 PCO under Schedule 4.

Only the bait materials listed below may be used when preparing 1080 poisoned baits for rabbits:

- Carrots (preferred).
- Oats.
- Manufactured pellets.

Carrots are generally the most effective bait for rabbits, being used extensively throughout two-thirds of NSW, combining high acceptability with reasonable economy.

Cut carrots manually or in a carrot cutter before 1080 liquid concentrate is applied. The carrots should be cut with a swift, clean action. Avoid small chaffy pieces that dry quickly or large chunks that rabbits find hard to eat. Prior to treatment with 1080 and during free feeding carrots must be kept chilled. Rabbits can be fussy eaters and it is very important to present carrots in a fresh condition.

Although carrots are preferred, oat grain has certain advantages in dry seasons because it is readily available, suitable for storage, easier to handle and does not deteriorate or require processing. Pellets have similar advantages to oats.

Section 7 of Schedule 4 requires that a person must free feed rabbits on at least three occasions at intervals of at least two days to determine the amount of bait to be poisoned with 1080. The amount of bait to be poisoned is determined when there is a small amount (up to 10%) of the free feed remaining the morning after the free feed bait is laid. The amount of bait to be poisoned shall be no more than two thirds the amount used for the final free feed.

Pindone

Legislative requirements under the Pesticides Act for the preparation of pindone bait material are detailed in clause 8 of the current Pindone Products PCO.

Only the bait materials listed below may be used when preparing pindone poisoned baits for rabbits:

- Carrots (preferred).
- Oats.

Carrots are generally the most effective bait for rabbits, being used extensively throughout two-thirds of NSW, combining high acceptability with reasonable economy.

Cut carrots manually or in a carrot cutter before pindone concentrate is applied. The carrots should be cut with a swift, clean action. Avoid small chaffy pieces that dry quickly or large chunks that rabbits find hard to eat. Prior to treatment with pindone and during free feeding carrots must be kept chilled. Rabbits can be fussy eaters and it is very important to present carrots in a fresh condition.

Although carrots are preferred, oat grain has certain advantages in dry seasons because it is readily available, suitable for storage, easier to handle and does not deteriorate or require processing.
Preparation of RHDV Products

Humans cannot contract Rabbit haemorrhagic disease (RHD) however allergic reactions may occur with some users of RHDV. When mixing the virus on oats or carrots, it is advisable to wear impermeable gloves and a full face shield to reduce the opportunity for the foreign protein to contact skin, eyes, or mucous membranes.

Instructions for the preparation of RHDV treated baits are provided on the product label. Only carrots or oats may be treated with RHDV products. Oats should be intact oat grain with husks attached. Carrots should be of good quality and freshly diced.

The appropriate quantity of feed material is added to the mixer. The RHDV product should be reconstituted according to label instructions and the viral solution should then be added to the mixer, preferably through spray nozzles inside the drum. The bait and viral solution should be evenly mixed. The bait is then delivered directly into plastic bags, (labelled with Rabbit Haemorrhagic Disease Virus Suspension) which meet the specifications outlined in the current APVMA Permit.

Note: Baits must be used the day of inoculation.

Preparation of poisoned baits for feral pigs

Legislative requirements under the Pesticides Act for the preparation of 1080 feral pig baits are detailed in the current 1080 PCO under Schedule 3.

Only grain and manufactured pellets may be used when preparing 1080 poisoned baits for feral pigs (unless authorised by APVMA permit).

In some areas fruit and vegetables may increase bait acceptability and can be mixed with grain or pellets as attractants to a bait station during free feeding. Fruit and vegetables must not be poisoned. Other attractants like molasses can be mixed on grain to get pigs eating.

Grain is generally recommended and when soaked for 12 to 24 hours in water the swollen grain is more likely to be taken by feral pigs than dry grain. This needs to be well drained prior to poisoning. An alternate is to use cracked grain to soak that is more absorbent than whole grains. Oats is not a preferred grain for pig poisoning due to the hull on the grain that some pigs “husk” when eating, that increases likelihood of sub lethal dosing as the majority of the poison is in the hull. However, in some situation baiting with oats may be mandatory to prevent off target impact. For example the current 1080 PCO allows for other 1080 bait material to be approved for use under an APVMA permit. If meat, offal or swill are to be used then DPI must also issue an approval under clause 71(2) of the Stock Diseases Regulation 2009 before this can be done.

Feral pig approved delivery device assessment

Under the 2017 Pesticide Control Order feral pig baiting using an approved delivery device allows for extended presentation of 1080 bait in the field. An approved delivery device (Appendix M) must demonstrate both target selectivity and effectiveness as a feral pig control device under closely monitored field conditions prior to endorsement.

A number of baiting methods can be used to increase target selectivity when baiting for feral pigs. Unless formally approved as a delivery device these methods must adhere to all conditions under the current PCO.

Field monitoring of a proposed delivery device for feral pig control

Innovation in delivery and presentation of bait types is regularly undertaken by those involved in pest animal management. In order to identify the level of target selectivity and effectiveness of these presentation methods the following conditions are considered to be the minimum requirements for assessment as an approved delivery device for feral pig control:
• The presentation device must contain free feed (un-poisoned) bait during the monitoring period.

• A minimum of 3 trial sites with 1 delivery device per site. Sites may be run concurrently or in sequence as resources allow. Sites should be a minimum of 2 km apart.

• A minimum field trial period per site of 30 days giving a total of 90 bait presentation nights across the 3 sites.

• Remote cameras capable of capturing attendance and behaviour of species at each individual site must be used. A suitable camera would have the capacity to take multiple rapid shots with no delay set between image captures and have less than one second response speed.

• Remote camera memory cards would require at least 16 gb of memory with regular checking of sites to ensure no blank periods where cards are full or batteries have discharged. Weekly checks will allow these conditions to be met and ensure free feed (un-poisoned) bait can be replenished.

• To ensure remote cameras capture images of both large and small non-target species at sites cameras must be positioned 3 m from delivery device and 1m above ground level. The delivery device should be centre of frame with camera positioned on a suitable tree or star picket.

• In order to be considered as an approved delivery device remote camera images must identify a high level of target selectivity for non-target species and consistent bait uptake by feral pigs.

• When summarising images to assess species attendance at a trial site the following applies. If a species comes in and out of camera frame and the interval of absence is less than 30 minutes it should be recorded as one species. If however the interval of absence is greater than 30 minutes, or a different species enters frame then it should be recorded as a new species visit.

• A report summarising the results of the proposed delivery device monitoring should be submitted to the Vertebrate Pesticide Training Committee (email: birgitte.verbeek@dpi.nsw.gov.au) for review.

**Preparation of poisoned baits for mice**

**Bromadiolone poisoned bait**

One litre of bromadiolone is mixed with of clean wheat in a Moree mixer and supplied in an appropriately labelled container.

Mixing can be undertaken in an appropriate preparation room or in the field prior to use.

**Coumatetralyl rodent bait – Racumin 8®.**

Clean wheat, barley, sorghum or triticale can be used as a bait material. Mix 500 g of Racumin® powder with 10 kg of grain.

100-200 ml of canola oil per 10 kg grain is added to help bind the powder to the grain plus it will act as an attractant.

Mixing can be undertaken in a Moree mixer in an appropriate preparation room or can be bag mixed in the field prior to use.

**Containers and labelling of poisoned baits**

Under the Regulations of the *Agricultural and Veterinary Chemicals Code Act 1994*, 1080 bait material must be supplied to the user in an approved container impervious to the poison and of sufficient strength to prevent leakage arising from the ordinary risks of handling and transport.
Each Schedule (condition 3.3) in the current 1080 PCO for the supply of baits by an ACO to an authorised user allows for manufactured 1080 bait product to be placed in an appropriately labelled plastic bag or a container from an appropriate registered 1080 pesticide product.

Suitable plastic bags are a minimum of 100 μm thick and are printed with the required labelling, as specified in the Schedules of the current 1080 PCO.

1080 ejector capsules must be supplied in containers that comply with Section 18(1) of the Agvet Code Regulations. Attached to the container must be a printed label as per the Schedule of the current 1080 Ejector Capsules PCO or any order that subsequently replaces this.

An ACO may only supply pindone baits in either an appropriately labelled plastic bag or in a container supplied by the manufacturer of registered bait products.

Suitable plastic bags are a minimum of 100 μm thick and printed with the appropriate approved label.

Buckets may be used for all 1080 baits. The PCO specifies HDPE plastic, however in case where a suitable bucket in HDPE cannot be found Polypropylene may be used as long as the bucket is strong and has a lid that can provide a secure seal. The appropriate label must be applied to the bucket. This can be a lithographed label or a water proof sticker.

Buckets and lids which have been used to contain 1080 bait products must not be used for any other purpose. When the bucket is empty or at the end of any ground baiting program, the bucket and lid must be returned to an Authorised Control Officer for reuse or disposed of in accordance with condition 3.8 of the Pesticide Control Order.

Where buckets are to be returned to an Authorised Control Officer for reuse, the buckets and lids must be triple rinsed or pressure rinsed, and rinsate must be:

(a) buried on the property where the 1080 bait products were used, in a disposal pit covered with at least five hundred (500) mm of soil; or
(b) disposed of within the 1080 storage and mixing facility.

 Appropriately labelled bags must also be used for supplying bait for mice using bromadiolone and Racumin 8®.

**Washing and cleaning procedures**

**Washing and cleaning: 1080 and pindone**

As 1080 and pindone liquid concentrates are very soluble in water, all equipment, trays and benches must be cleaned by washing with plenty of cold water. All equipment should be thoroughly rinsed and allowed to drain. When washing down in the field, waste water, bait and other waste should be buried in a pit or collected in a container marked ‘poison’ and returned to the 1080 facility for disposal. ACOs should wear impervious gloves, washable hat, overalls or apron and rubber boots while washing equipment that has been contaminated with 1080.

To safely remove the ACO’s PPE, wash the gloves, remove the eye protection, hat and overalls then the gloves, then thoroughly wash hands and face with soap and water.

**Washing and cleaning: Bromadiolone and coumatetralyl (Racumin 8®)**

Bromadiolone and coumatetralyl are emulsifiable in water so all equipment should be thoroughly rinsed with water and allowed to drain.

When washing down in the field, waste water, bait and other waste should be buried in a pit or collected in a container marked ‘Poison’ and returned to the pesticide facility for appropriate disposal. ACOs must wear PPE.
Washing and cleaning: RHDV

Equipment used to prepare the bait should be decontaminated and cleaned at the completion of bait preparation each day by rinsing with 0.5% sodium hypochlorite (bleach). Following this, rinse the bait mixer and utensils with water and allow to dry.

Accident and incident reporting

Following a risk assessment each pesticide storage facility should have an Emergency Plan that details steps to take in event of fire or other incident at the facility. The Emergency Plan may include:

1. Who to contact.
2. Activation procedures.
3. Evacuation procedure.
4. Control and containment of spills and leaks.
5. Fire-fighting procedures.
6. Protection of persons engaged in emergency assistance.
7. Assistance by emergency authorities such as police and fire brigade.
8. Emergency contacts.
9. A list of individuals and organisations to be provided with a copy of the emergency plan.

All incidents that require activation of the Emergency Plan procedures should be recorded and reported to the SafeWork NSW or other relevant authority.

Disposal of 1080 containers and unused bait

After triple rinsing break, crush or puncture and dispose of empty containers in local authority landfill. If no landfill is available, bury containers and rinsate below 500 mm of soil in a disposal pit specifically marked and set up for this purpose clear of water ways, desirable vegetation and tree roots. Empty containers may be burnt in an incinerator.

Disposal of pindone containers and unused bait

After triple rinsing break, crush or puncture and dispose of empty containers in local authority landfill. If no landfill is available, bury containers and rinsate below 500 mm of soil in a disposal pit specifically marked and set up for this purpose clear of water ways, desirable vegetation and tree roots. Empty containers should not be burnt.

Any bait that is uneaten four days after bait consumption ceases should be collected and destroyed either by incineration (where permitted) or burying at a depth of 500 mm of soil. Alternately, trails of poisoned carrot or oat bait can be covered with sufficient soil to prevent non-targets from gaining access. Carcasses of poisoned rabbits should be collected for a minimum of 12 days after the last application of poisoned bait. The carcasses should be destroyed by incineration (where permitted) or buried under 500 mm of soil in a disposal pit.

Disposal of Racumin 8® containers, Coumatetralyl bags and unused baits

All unused bait, rinsate and carcasses should be collected and destroyed by deep burial. After triple rinsing break, crush or puncture and dispose of empty containers in a local authority landfill. If no landfill is available, bury the containers and rinsate under 500 mm of soil in a disposal pit specifically marked and set up for this purpose clear of dams, waterways or drains.

Disposal of RHDV vials and unused baits

Used vials should be soaked in 0.5% sodium hypochlorite, or 1 in 20 dilution of household bleach containing 10% sodium hypochlorite and water and buried in a local authority landfill or buried below 500 mm of soil in a disposal pit specifically marked and set up for this purpose.
Empty vial containers and products should not be burnt. Unused bait and bags must be disposed of by deep burial.

**Aerial baiting**

Aerial baiting is restricted to areas and situations that meet the restrictions stated in the LLS and OEH approved guidelines/procedures for aerial baiting.

Written approvals to undertake aerial baiting are required as stipulated in Section 9.1 of the current 1080 PCO. Aerial baiting can be conducted from fixed wing aircraft only in the Western Division of NSW (see Figure 6).

Aerial baiting must only use bait types and rates as specified under vertebrate pesticide preparation heading above.

**Issuing pesticide products and assessing risk**

An ACO must undertake a risk assessment of the proposed programs with the persons authorised to use the baits. (see Appendix G and K)

Poisoned baits must be issued only after an approval by the ACO has been given and the occupier has received the relevant PCO and signed an Indemnity Form.

**Indemnity versus consent forms**

An indemnity is a legal document that passes on ownership and responsibility of vertebrate pesticides to the person taking possession – 1080 PCOs mandate the requirement for an indemnity to be completed and signed for each property being baited. A consent is a voluntary agreement that allows the authorised person to act on behalf of another.

Indemnity and Consent Forms must be kept for a minimum of three years so that they can be correlated with the vertebrate pesticide usage and supply record in case of legal action.
Indemnity Form – issuing pesticide baits to a private land manager

Before supplying 1080, pindone, PAPP, bromadiolone, coumatetralyl, and RHDV bait or strychnine cloths, the ACO must get the person being supplied baits to sign an Indemnity Form that releases the LLS ACO and the LLS from any liability for accidental poisoning on the land manager’s property. This also applies in situations where the ACO is employed by a government department, Wild Dog Destruction Board or any other public authority and is supplying these baits to private land managers.

The ACO must explain to the person being supplied baits what is contained in the Indemnity Form and ensure that the person signing understands that it is a legal document. The Indemnity Form is either filled out by the person signing the form or they can request help filling out the form from the ACO or someone else. Once signed, a copy of the Indemnity Form must be provided to that person and a copy kept on file by the LLS or other public authority.

An ACO must only supply 1080 bait material to a person authorised, their nominated person or the authorised agent of the owner or occupier of the land on which the 1080 baits are to be used.

Written approval is required from the landholder, occupier for an authorised agent to lay baits on their behalf.

When supply of bait material is to another government agency the agency must provide written approval for the authorised agent. See Appendix L for ACO to ACO record of RCP transfer (external agency only).

A person who owns or occupies more than one property must complete a separate Indemnity Form for each property or program before any 1080 bait may be used on the specified property.

The minimum information that should appear on an LLS Indemnity Form is (for other government agencies refer to their own SOP):

- Name and contact information of the authority or agency issuing the baits.
- Specify which pesticide the form relates to.
- Name and address and chemical accreditation card number details of the person authorised to lay the baits and name of authorised agent if applicable.
- Name of property where baits are to be laid.
- An acknowledgement that the person has received the following information:
  1. A copy of the PCO and relevant Schedule relating to wild dogs, foxes, feral pigs and rabbits for 1080. Customise as required for other pesticides.
  2. The person has been advised that all baits must be laid in accordance with the label and PCO or permit as required.
  3. The person has been reminded that other requirements under the Pesticides Act such as record keeping must also be complied with.
- Details of the notification process that has been carried out.
- Acknowledgement of amount and type of bait material received, for which pest species for use on stated property.
- Acknowledgement of amount of signage received to identify baiting location and the area being baited in hectares.
- A statement indemnifying the authority or agency.
- Section for the authorised person or agent and officer of the authority or agency to sign and date.
Consent Form – baiting at the request of a land manager

Where an ACO is undertaking the baiting on behalf of a land owner, occupier or manager, a consent form must be completed by the owner, occupier or manager and a copy provided to the ACO.

Authorisation Form

All persons taking possession of 1080, pindone, bromadiolone, coumatetralyl, PAPP, RHDV bait or strychnine cloths on behalf of another landholder, as their authorised agent, must provide evidence to the ACO of the authorisation given to them by the landholder whose property is being baited. The authorisation must not cover a period of time greater than 12 months.

Supplying bait to authorised persons

Supplying 1080 and pindone baits

An ACO must only supply or give approval to supply baits to a person who is an authorised user or their agent.

For RCPs, an authorised user is defined in the relevant PCO.

A person taking possession of 1080 baits must first complete and sign an Indemnity Form for each property or NPWS Regional Pest Management Strategy program on which baits are to be used.

When an ACO is supplying 1080 prepared or manufactured baits to another ACO only the ACO who is taking possession of the 1080 prepared or manufactured baits needs to have completed a risk assessment for the program being undertaken. For example when an LLS ACO supplies baits to a NPWS ACO the NPWS ACO will be responsible for the risk assessment.

The conditions to supply pindone baits to an authorised person are the same as supplying 1080 baits.

A person taking possession of prepared pindone baits from an ACO must first complete an Indemnity Form for each property on which baits are to be used.

Supplying Bromadiolone baits

A person taking possession of prepared bromadiolone baits from an ACO or other operator must first complete an Indemnity Form for each property on which baits are to be used.

A person taking possession and applying bromadiolone baits must receive or be given a copy of the pesticide label and the current APVMA minor use permit, read it and follow all directions.

Supplying Coumatetralyl rodent baits

A person taking possession of prepared coumatetralyl rodent baits from an ACO must first complete an Indemnity Form for each property on which baits are to be used.

A person taking possession of coumatetralyl rodent baits must receive or be given a copy of the pesticide label and the current APVMA minor use permit and read it and follow all directions.

Supplying RHDV baits

ACOs may only supply baits inoculated with RHD virus to people who meet the criteria in the current Pesticide Control (Rabbit Haemorrhagic Disease Virus) Order 2017 (RHDV PCO).

A person taking possession of baits inoculated with RHD virus must receive or be given a copy of the current RHDV PCO, copy of the approved RHDV label with the relevant instructions on how to use the bait material or how to inject.
Vertebrate pesticide risk assessment guideline

An ACO must conduct a risk assessment to determine if it is appropriate to supply 1080 and PAPP baits to any person. Risk assessments should consider threats to non-target species particularly domestic dogs, human health and the environment.

ACOs must conduct a risk assessment of planned group baiting programs where baiting occurs less than the prescribed minimum distances provided in the current 1080 or PAPP PCO.

When issuing other vertebrate pesticides ACO’s must consider if a risk assessment is relevant.

The following should be considered as a guideline only and is not an exhaustive list of risks that need to be considered when undertaking a baiting program. Authorised Control Officers should consider any specific or local issues that may constitute a risk.

A risk assessment may assist to demonstrate that risks were appropriately assessed and recorded and that due diligence was exercised in relation to a vertebrate pest control program.

When undertaking a risk assessment, consider:

1. Can the requirements of the PCO or label be met? If not, then the program may not proceed.
2. Are there risks to human safety? Assess the risk and whether the program can proceed by minimising the risk to an acceptable level by, for instance, isolating with signage or fencing the area.
3. Are there risks to the environment (e.g. threatened, endangered or non-target species that are vulnerable or susceptible to 1080)? Assess the risk and whether the program can proceed by determining the measures acceptable to minimise the risk of baiting on the environment.
4. Are there risks to domestic livestock? Assess the risk and whether the program can proceed by considering methods of husbandry necessary to minimise the risk; such as removing grazing livestock from a paddock during a rabbit baiting program.
5. Are there risks to domestic pets? Assess the risk and whether the program can proceed by minimising the risk to an acceptable level. For instance, will domestic pets need to be restrained or caged during the baiting program?
6. Are there risks to working or guard dogs? Assess the risk and whether the program can proceed by minimising the risk to an acceptable level. For instance, will working or guard dogs need to be muzzled during the baiting program?
7. Are there other risks not mentioned or risks that may have adverse outcomes such as negative media coverage of the program? If so, manage risks appropriately.

A risk assessment template is provided in Appendix G. This template may be used as a guide to record each risk and the management controls used to mitigate or minimise the risk to acceptable levels. Where a Conservation Risk Assessment (CRA) has been undertaken and endorsed by an ACO such as for aerial baiting, there is no need for an additional risk assessment to be undertaken for that activity.

Under NPWS policy there must be a CRA for all 1080 baiting programs undertaken by NPWS. It should be noted that this does not replace an ACO risk assessment unless:

- the CRA also addresses all non-target risks (particularly to domestic animals), risks to humans, risks to the environment
- and is endorsed by a NPWS ACO.
Toxicity

Toxicity is the degree to which a substance can damage an organism. Most substances are toxic under some circumstances. When the amount of toxin exceeds the body’s ability to excrete or inactivate it there is a risk to health.

Users of poisons must have an understanding of toxicity:

- for their safety
- to control the target pest economically
- to minimise the risk to non-target animals.

The toxicity of a poison varies with the:

- species
- weight, age and health of the animal
- method of administration. Poisons are, generally, more toxic when ingested than when applied to the skin.

Measuring toxicity

Toxicity is measured by use of the lethal dose for 50% of a group of test animals under experimental conditions and is known as the LD$_{50}$.

**Lethal dose, 50% (LD$_{50}$)**

The Lethal Dose 50% (LD$_{50}$) is the amount of the active ingredient of a formulation of poison, expressed in milligrams per kilogram (mg/kg) live weight that will kill 50% of a group of animals of one species under experimental conditions. The LD$_{50}$ of a poison is used to compare different poisons and the effect of one poison on different animal species. The lower the LD$_{50}$ the more susceptible the species is to the poison.

The LD$_{50}$ benchmark is used as there are always individual animals of the one species that are more tolerant to a poison and this tolerance of one animal in a test group may skew the results of the average toxic dose for the rest of the group. This means that LD$_{50}$ is not the lethal dose for all subjects; some may be killed by much less, while others survive doses higher than the LD$_{50}$. Appendix I shows the LD$_{50}$ for a range of species to 1080. Note the comparatively low LD$_{50}$ for dogs, foxes and cats.

**Absolute lethal dose (LD$_{100}$)**

The Lethal Dose 100% (LD$_{100}$) is the amount of active ingredient of a formulation of poison, in milligrams per kilogram (mg/kg) live weight that will kill 100% of a large group of animals of one species. The LD$_{100}$ is more difficult to determine because there are always individual animals that are more tolerant to a poison. So an LD$_{100}$ figure will depend on the number of highly tolerant animals in a test group and the sample size needs to be very large.

**Application of lethal dose rates**

The LD$_{50}$ rate is the main method to determine the toxicity of a poison however it is not the amount of poison applied to pest animal baits.

The aim of a baiting program is to kill all the target animals that consume bait. For example, the LD$_{50}$ of 1080 for wild dogs is 0.1 mg/kg. Therefore, 1 mg of 1080 will kill 50% of wild dogs weighing 10 kg and 3 mg of 1080 will kill 50% of wild dogs weighing 30 kg.

To ensure that the largest, most tolerant wild dogs die from eating baits poisoned with 1080 and to account for seepage and microbial breakdown in the environment, 6 mg of 1080 or 0.2 mL 1080 liquid concentrate is injected into wild dog baits.
Acute and chronic poisoning

Acute poisoning occurs when a poison is administered with a single lethal dose, e.g. a rabbit suffers acute poisoning by eating 1080 poisoned carrot bait.

Most vertebrate pest poisons are acute poisons.

The acute or immediate toxicity of a pesticide is reflected in the Poisons Schedule or poison warnings, which appear on the label.

Chronic poisoning occurs when poisons are administered in smaller doses that have a cumulative effect that causes death such as pindone.

First and second generation anticoagulants

First generation anticoagulants require multiple feeds to deliver a lethal dose whilst second generation anticoagulants are more toxic and persistent and generally only require one feed to consume a lethal dose. Second generation anticoagulants may pose a greater secondary poisoning risk due to its persistence in carcasses.

Primary and secondary poisoning

Primary poisoning occurs when the target animal consumes a toxic substance. For example, a rabbit suffers primary poisoning by eating 1080 poisoned carrot bait.

Secondary poisoning refers to one animal being poisoned after consuming the flesh or regurgitated material of another animal which has digested the poison such as when a carnivore consumes the carcass of a poisoned animal or a poisoned animal vomits.

The pesticide 1080 may persist in the muscle tissue and stomach contents of poisoned animals long after death. Because most canids are highly susceptible to 1080 poison, it is highly likely that sufficient poison remains in the carcass of a poisoned rabbit to cause the death of a working dog.

Secondary poisoning may be a significant risk factor to working dogs and domestic pets immediately after a baiting program and may remain a threat longer in cold or dry conditions that retard the breakdown of pesticide residues.

The 1080 PCO requires users cover or collect all uneaten bait material and poisoned carcasses and to dispose of them by deep burial to reduce the risk of secondary poisoning of non-target animals.

Birds of prey and other avian scavengers are less likely to be at risk of 1080 poisoning because of their lower susceptibility to the pesticide and their reduced ability to consume enough of the carcasses, however there may be a risk of fatalities with use of pindone.

1080

1080 is a S7 (Highly Toxic, Dangerous Poison) used to control wild dogs, foxes, rabbits and feral pigs. It was discovered by Belgian researchers in 1896 and was first used around 1944 as a rodenticide in the United States. It was introduced into Australia for rabbit control programs in the early 1950s.

1080 is the synthetic form of sodium fluoroacetate – the chemical occurs naturally in 41 species of the family Fabaceae including 39 species of Gastrolobium and two species of Acacia. These species grow in Western Australia, across northern Australia in the Northern Territory and in central Queensland.

1080 Physical and chemical properties

In its pure form, 1080 is a synthesised organofluorine compound that is stable in the absence of water. It is an odourless white powder that is highly soluble in water. It produces a clear solution
when mixed with water. Commercial 1080 liquid concentrate contains 1 part 1080 powder to 30 parts of water. A dark blue dye is added to distinguish the resulting solution from water. 1080 liquid concentrate is not soluble in organic solvents such as fats or oils. It becomes unstable above about 110°C and decomposes at about 200°C. Once in solution, 1080 is readily degraded in the environment by microbial action.

**1080 Mode of action**

1080 can be absorbed through the stomach, intestines, lungs, mucous membranes, eyes and open cuts. It is not readily absorbed through healthy skin. 1080 acts by disrupting the ‘Krebs cycle’, the complex metabolic pathway in the mitochondria that breaks down food providing glucose and energy for cells to function. Once the energy reserves are depleted, death occurs fairly quickly from heart or respiratory failure. Cardiac failure is the most common cause of death in herbivores poisoned by 1080. Carnivores experience central nervous system disturbances and convulsions as their energy supplies are exhausted, eventually leading to respiratory failure. In omnivores, death tends to result from disturbances of both the heart and central nervous system.

The heart, brain and lungs are organs significantly affected by 1080 due to their high energy usage. The diaphragm is also affected.

Death usually occurs within 4 to 24 hours after ingestion of a lethal dose of 1080 poison. Animals that eat sub-lethal doses of 1080 may show mild signs of poisoning, but the 1080 is metabolised and excreted within one to four days and the animal recovers. All traces of 1080 are excreted within one week.

There is no known antidote for a lethal dose of 1080. However, some animals seen ingesting 1080 baits may be saved so emergency action should be taken if 1080 poisoning is suspected. See Appendix H for further details.

**Advantages of 1080 as a poison**

- **Cost** – 1080 poison is relatively cheap. This is important for cost-effective vertebrate pest control and in removing any temptation for unscrupulous people to seek less acceptable ‘home-made’ alternatives.
- **Convenience** – 1080 bait products are easily prepared and the clean-up process is quick, safe and efficient.
- **Availability** – Currently 1080 is the predominate pesticide used in wild dog, feral pig, wild rabbit and fox control as there are limited alternative pesticides available in NSW.

**Species sensitivity and susceptibility to 1080**

Species vary widely in their sensitivity to 1080. The susceptibility of different animals during 1080 poisoning programs depends on the amount of 1080 consumed and the body size of the animal. Carnivores, especially dogs and foxes, are the most sensitive to 1080 poisoning, followed by herbivores, with birds and reptiles less sensitive. Introduced species are generally more sensitive than native wildlife.

More information on susceptibility of a range of animals is available in Appendix I.

**Environmental fate of 1080**

Studies, both in Australia and New Zealand demonstrated that 1080 is rapidly degraded by microbial action. Degradation occurs by enzymes defluorinating fluoroacetate. The rate of detoxification in baits depends on:

- **bait type**
- **placement of baits, such as buried or exposed on the surface**
- **soil temperature and moisture**
microbial action.

In laboratory experiments, the amount of 1080 remaining in soils was reduced to 50% after 10 days at 23°C, 30 days at 10°C and 80 days at 5°C. Leaching experiments in soil showed that traces of 1080 might be leached through soil, particularly if heavy rainfall occurred shortly after 1080 was applied.

Most soils can be expected to contain micro-organisms such as Pseudomonas, Fusarium and Penicillium capable of degrading 1080. This means that residues of 1080 that leaches from baits or carcasses should have little persistence in soils. The loss of 1080 from distributed baits by leaching or microbial degradation is highly variable depending on bait type and environmental factors, but most baits have low toxicity after several weeks in the field.

Breakdown of 1080 residues occurs rapidly in water. At 21°C, micro-organisms in water degrade 1080 in two to six days. At lower temperatures, microbial action is slower and degradation may take two weeks, or longer, at temperatures below 7°C.

1080 is also rapidly diluted in water. This dilution effect, especially in flowing water, quickly reduces the level of 1080 to insignificant concentrations compared to the time taken by micro-organisms in the water.

The 1080 in CPE ejector capsule is likely to remain viable for a number of years due to the capsules being sealed, providing limited opportunity for degradation of 1080 due to lack of contact with soil or water

1080: Minimising the risk to non-target animals

Differences in susceptibility to 1080 between species means that application rates can be varied to kill target species whilst minimising the risk to others. For example, a single poisoned bait prepared to kill a fox will not kill a Wedge-tailed eagle.

Differences in dietary preferences between species can be exploited by selecting bait substrates that are more attractive to target species and less attractive to non-target species.

Bait placement strategies can utilise feeding behaviours between species such as burying baits for wild dogs and foxes to make baits less available to non-target species. There is, however, no single procedure that guarantees 1080 baits will always be totally target specific.

Techniques to reduce the risk to non-target animals include:

- monitor bait sites prior to baiting programs for non-target species activity
- using the most appropriate bait size
- using the most appropriate type of bait material
- burying, tying down and dyeing baits
- injecting liquid concentrate into the centre of freshly prepared meat baits
- making baits attractive to pest species only
- using fencing or bait stations that exclude non-target animals from bait sites
- using CPE ejectors as they require an animal to possess sufficient strength to exert an upward pull force to be activated and cannot be cached or moved
- timing bait placement when pest species are most vulnerable and non-target animals are least vulnerable
- using pulse baiting to reduce the opportunity for multiple bait take and caching by an individual animal, particularly predators such as foxes.

Note: The non-target animals most at risk from 1080 poisoning are domestic dogs.

See Appendix H – First aid for working dogs and other domestic animals.
### Applying 1080 baits

**Distance restrictions**

Minimum distances for laying 1080 baits and 1080 ejector capsules have been set to minimise the risk to non-target animals particularly humans, domestic dogs and cats. If control is necessary in the areas excluded from baiting, other control methods must be used. Instructions relating to distance restrictions are contained in the current 1080 PCOs.

**Public notification**

Persons who use 1080 baits and 1080 ejector capsules on their own land or on public land are required to notify others before laying 1080 baits. The requirements for public notification are contained in the current 1080 PCO and it outlines who must be notified, how they are to be notified and when they are to be notified, before 1080 bait is laid. In addition to this, all public land managers must have and follow a PUNP.

**1080 poisoning notices**

Persons using 1080 must erect notices before laying baits and/or ejector capsules on any land. The notices must remain displayed for at least 4 weeks after the last day of baiting (meaning the last date baits were laid). Refer to the current 1080 PCOs for details on where notices must be placed.

Notices must specify the following:

- that 1080 (wild dog, fox, feral pig or rabbit) baits and/or ejector capsules are laid on this property, and
- the dates on which 1080 (wild dog, fox, feral pig or rabbit) baits and/or ejector capsules are first laid or the dates between which baits will be laid, and
- contact details of a person that can be contacted to get details on the baiting program, and
- a warning that domestic animals may be affected.

Authorities must keep adequate supplies of these notices for each animal species. Notices for ejector capsules should specify ejector capsules as opposed to baits. Where both baits and ejector capsules are being used, notices are required to mention both.

The following are the recommended specifications for the notices.

**Size and materials**

- 253 gsm white System board (cardboard) or a similar synthetic Corflute® of approximately 40 cm × 30 cm (A3 Size).

**Lettering**

- Lettering is to be in red or a colour that contrasts with the background:
  - about 5 cm or larger for the words ‘1080’
  - 3 cm or larger for the words ‘RABBIT’, ‘WILD DOG’, ‘FOX’ or ‘FERAL PIG’ ‘POISON’,
  - 2 cm or larger for the words ‘LAID ON THIS PROPERTY’ (or Area); and
  - about 1 cm high for the words ‘DATE POISON LAID / / ‘. The date can be written in permanent marking pen.
  - Warning - domestic animals may be affected.
Figure 7. A 1080 poisoning notice that shows the recommended style and layout for NPWS on left (Grant Eccles) and LLS on the right (Dean Chamberlain).

First Aid: Specific recommendations for 1080

In all cases seek advice from the Poisons Information Centre (131 126) or a doctor, and get the affected person to a doctor or emergency centre as soon as possible.

The following information is taken from the relevant SDS.

- 1080 is a deadly poison. Prompt treatment is vital whenever contact is made with this product.
- Seek immediate medical assistance and transport to hospital. Give large quantities of water if medical assistance is delayed. DO NOT induce vomiting.
- Hold eye(s) open and wash with running water for at least 15 minutes and see a doctor.
- Do not attempt to remove contact lenses unless trained to do so.
- If skin contact occurs, remove contaminated clothing immediately and wash skin thoroughly with soap and water. Transport to hospital or doctor if skin irritation develops. This risk is minimal as the product is supplied as an aqueous concentrate.

For medical practitioners.

The standard references for doctors (not first aiders) are:
- Poisons Information Centre 131 126.

PAPP

History

PAPP was originally studied as a treatment for cyanide poisoning but due to its high toxicity to dogs (Canis sp.) it has been evaluated as a potential agent for use against coyotes (Canis latrans) in the USA and more recently against a variety of mammalian predators in New Zealand and Australia.

PAPP Mode of action

PAPP is transformed by enzymes to PHAPP (N-hydroxylaminopropiophenone) when ingested and absorbed into the bloodstream via the stomach. This causes rapid oxidation of haemoglobin to methaemoglobin which is not effective at transporting oxygen in the blood causing a condition called methaemoglobinaemia. Methaemoglobin is normally present in blood at low levels (<1%).
As methaemoglobin concentration in the blood increases a lack of oxygen to the brain and heart occurs, which results in loss of consciousness and death due to respiratory failure.

Symptoms of methaemoglobininaemia are proportional to the concentration of the methaemoglobin in the blood. One of the first visible signs of the effect of increased levels of methaemoglobin in the blood is the pale bluish appearance of skin and mucus membranes. Death usually occurs within two hours after a lethal dose and animals become lethargic and sleepy before they die.

The effects of PAPP can be overcome by administering an agent that reduces methaemoglobin back to haemoglobin in the blood. The chemical methylene blue converts methaemoglobin back to haemoglobin and immediately reverses the effects of PAPP poisoning, with full recovery usually occurring within an hour. The antidote must be administered by a vet soon after the poison is taken and is most effective if given within 30 minutes.

**Physical and chemical properties of PAPP**

PAPP in its pure form is a yellow crystalline powder which has low solubility in water and many organic solvents. Commercially PAPP will be supplied in bait products containing 400 mg of PAPP in a 35 g fox bait (FOXECUTE Fox Bait®) and 1000 mg of PAPP in a 60 g wild dog bait (PAPP Wild Dog Bait®).

**Species sensitivity and susceptibility to PAPP**

Mammalian carnivores and monitors (Varanus sp.) are more susceptible to PAPP than other species. Birds tend to be less susceptible, although some species such as mallard ducks (Anas platyrhynchos) are adversely affected.

More information on susceptibility of a range of animals is available in Appendix I.

**Advantages of PAPP as a poison**

PAPP when delivered at a lethal dose causes a rapid increase in levels of methaemoglobin quickly leading to death with minimal symptoms of distress. Secondary poisoning is unlikely to occur due to the rapid degradation of PAPP and the low concentrations of PAPP in tissue of poisoned animals. One of the main advantages of PAPP is that it has a simple antidote that will reverse its effects.

**Environmental Fate of PAPP**

PAPP is readily broken down in the soil and water by microorganisms.

**PAPP: Minimising risks to non-targets**

Monitors, quolls, bandicoots and domestic dogs are at risk of poisoning and a risk assessment will specify control measures that must be put in place. The requirement to bury baits in holes approximately 8 cm deep is an example of how to minimise uptake by non-target species.

Notification of baiting program is required to minimise risk to domestic dogs. Whilst there is a means to reverse the effects if PAPP for dogs people still need to be very vigilant. The reality is if a dog strays and takes a PAPP bait unless the they can get the dog to the vet quickly (within 30 minutes most desirable) and the vet has the antidote methyl blue in stock it is highly likely the dog will die.

Investigation has occurred to have an antidote available for landholders to administer. However nothing is available at this point in time.
Applying PAPP baits

Distance restrictions

Minimum distances for laying PAPP baits have been set to minimise the risk to non-target animals particularly humans, domestic dogs and cats. If control is necessary in the areas excluded from baiting, other control methods must be used. Instructions relating to distance restrictions are contained in the current PAPP PCO.

Public notification

Persons who use PAPP baits on their own land or on public land are required to notify others before laying PAPP baits. The requirements for public notification are contained in the current PAPP PCO and it outlines who must be notified, how they are to be notified and when they are to be notified, before PAPP bait is laid. In addition to this, all public land managers must have and follow a PUNP.

PAPP poisoning notices

Persons using PAPP must erect notices before laying baits on any land. The notices must remain displayed for at least 4 weeks after the last day of baiting. Refer to the current PAPP PCO for details on where notices must be placed. Notices must specify the following:

1. that PAPP (wild dog, fox) baits are laid on this property, and
2. the dates on which PAPP (wild dog, fox) baits are first laid or the dates between which baits will be laid, and
3. contact details of a person that can be contacted to get details on the baiting program, and
4. a warning that non-target animals may be affected or that domestic dogs may be at risk.

Authorities must keep adequate supplies of these notices for each animal species. The following are the recommended specifications for the notices.

Size and materials

- 253 gsm white System board (cardboard) or a similar synthetic Corflute® of approximately 40 cm × 30 cm (A3 Size).

Lettering

- Lettering is to be in red or a colour that contrasts with the background:
  - about 5 cm high for the words ‘PAPP’ and
  - 3 cm high for the words ‘WILD DOG’ or ‘FOX’ ‘POISON’
  - 2 cm or larger for the words ‘LAID ON THIS PROPERTY’ (or Area); and
  - about 1 cm high for the words ‘DATE POISON LAID / / ’. The date can be written in permanent marking pen.
  - non-target animals including dogs may be affected.

See Figure 7 example for 1080 as a guide.

First Aid - specific recommendations for PAPP

Swallowed: Rinse mouth. Call Poisons Information Centre or call doctor immediately. Do not induce vomiting unless advised by Poisons Information Centre or doctor. Apply artificial respiration if not breathing.

Eye: Hold eye(s) open and wash with running water for at least 15 minutes until product is removed. Ensure irrigation under the eyelids by occasionally lifting the eyelids. Transport to hospital or doctor immediately if eye irritation develops. Do not attempt to remove contact lenses unless trained.
Skin: If skin contact occurs, remove all contaminated clothing including footwear and wash skin thoroughly with soap and water. Transport to hospital or doctor if skin irritation develops.

Pindone

Pindone is a first generation anticoagulant used to control rabbits in areas where distance restrictions and the impact on non-target animals and domestic pets make 1080 unsuitable. These include urban and closer settled semi-rural areas, golf courses, sporting fields and horticultural areas.

Pindone has a long history of use in Australia; the pindone acid formulation was introduced into Western Australia in 1984. Both pindone acid and pindone sodium formulations are registered in Australia for use as a vertebrate poison to control rabbits.

An advantage of pindone compared to 1080 is that there is an antidote for use where domestic animals may be exposed.

Anticoagulants have a low level of hazard to humans and domestic animals when used according to the label. Pindone should be considered where:

- rabbits are to be controlled in urban or closely settled areas and areas where 1080 is restricted from use
- the land manager objects to the use of 1080 and is willing to use pindone
- stock must be returned to the treated paddock soon after a control program.

There are several registered products containing pindone; ready-to-use bait products and pindone powder and liquid concentrates. While ready-to-use baits are available through rural merchants and some LLS, the liquid and powder concentrate products are restricted for use by ACOs. Factory prepared baits include RABBAIT® Pindone Oat Bait and Aldi Bunnybait Oat Bait for Rabbits® products are Pindone-25 Rabbit Bait Rodenticide®, ALDI Pindone 25 Liquid Concentrate® and RABBAIT Aqueous Pindone Concentrate® and must be used in accordance with the conditions of use in the current PCO for Pindone Products and the pindone label.

Pindone physical and chemical properties

Pindone is a green synthetic chemical product available in both powder and liquid formulations containing either pindone acid or pindone sodium. The main difference between the two is that baits prepared from pindone sodium may be expected to lose the toxicant more rapidly under wet conditions because the sodium salt is water-soluble, whereas pindone acid is water-insoluble. Pindone acid is mainly available in Western Australia.

Pindone concentrates typically used by ACOs are Pindone-25 Rabbit Bait Rodenticide® powder containing 2.5% pindone as a sodium salt in an inert base of caster sugar and corn starch or as RABBAIT Aqueous Pindone Concentrate® or ALDI Pindone 25 Liquid Concentrate®; the latter two also contain 2.5% Pindone as a sodium salt in solution.

Rabbits are generally more sensitive than other vertebrates to pindone. See Appendix I. Pindone is considered safer than 1080 however caution should be taken in areas to be baited that are frequented by native wildlife as some raptors and kangaroos are highly sensitive to pindone. Strategies should be put in place to prevent access to pindone bait by non-target animals.

After ingestion with pindone rabbits will show signs of lethargy and anorexia followed by manifestations of haemorrhage including anaemia, laboured breathing, pale mucous membranes and weakness. Bleeding may be visible around the nose, mouth, eyes and anus and animals may pass bloody faeces.

Pindone Mode of action

Pindone is a cumulative poison and reduces the clotting ability of blood by disrupting the vitamin K cycle. Rabbits die from internal haemorrhaging within 5 – 20 days after the initial dose.
At least three applications of pindone poison bait are required at 3 – 5 day intervals to ensure rabbits receive a lethal dose. Few rabbit carcasses are seen after poisoning, because most rabbits die in the warren, but rabbits may be active in the treated area for many days after eating the poisoned bait. Where possible carcasses should be collected and disposed of according to the pindone label.

Symptoms of anticoagulant poisoning are:

- haemorrhaging and bruising
- anaemia
- listlessness
- general lethargy.

**Species sensitivity and susceptibility to pindone**

Rabbits are generally more sensitive than other vertebrates to pindone, see Appendix I. Some raptors appear to share the high sensitivity of rabbits, based on results for wedge-tailed eagles and brown goshawks. Kangaroos also appear highly sensitive, based on results for western greys.

It should be noted that while pindone is considered a safer option than 1080, extra care must be taken in areas to be baited that are frequented by native wildlife. Baits should be contained in bait stations that prevent access by animals larger than rabbits to reduce the risk to these non-target animals.

More information on susceptibility of a range of animals to pindone is available in Appendix I.

**Environmental fate of pindone**

Pindone is likely to dissipate slowly in baits, particularly under wet conditions. Small amounts may be leached from baits under wet conditions, but any residues entering soil would be expected to be degraded by bacteria in 5 – 6 weeks in moist sheltered areas and leaves no harmful residues. Pindone will breakdown under the ultra-violet light of sunlight in 2 – 3 weeks if left exposed.

Most of the pindone eaten by rabbits should be absorbed and metabolised within a few days. Based on the limited information available no significant or persistent contamination of the environment by both pindone formulations is expected from rabbit control operations using pindone baits.

Pindone baits are likely to pose minimal threat to aquatic organisms.

**Pindone: Minimising the risk to non-target animals**

Poisoning of non-target species can occur either directly by eating the carrot or oat baits intended for rabbits or through the tissues from a dead or dying poisoned animal. Although information on the toxicity and non-target impacts of pindone is limited, it is thought to be moderately toxic to a range of species.

Secondary poisoning may occur in species which feed on poisoned rabbits and carcasses such as quolls and raptors. Rabbits dying from pindone poisoning can become lethargic and less aware of their surroundings. This can predispose these animals to predation which can in turn place predators at greater risk from secondary poisoning. Non-target species that accidentally receive a high enough dose of pindone may exhibit the same clinical signs as rabbits.

Pindone is slow acting, so accidental poisoning of stock or companion animals may be treated with vitamin K1 (phytomenadione) to be administered by a veterinarian. It is usual to treat an affected animal with vitamin K1 for at least one week after an initial loading dose. If bleeding is severe, whole blood or plasma can be given to replace clotting factors and red blood cells.
To minimise the potential for toxic baits to be lethal to non-target animals, the following baiting strategies are recommended:

- Starting with unpoisoned bait – allows an assessment of what animals are eating the bait.
- Bait type – use of surface coated rather than vacuum impregnated oat baits may reduce exposure of grain eating birds to the toxin. These birds may eat the kernel and discard the poisoned husk.
- Colouring of baits – pindone baits are dyed green in colour to reduce exposure to birds.
- Use of bait stations – bait may be placed under mesh canopies where it is accessible to rabbits but access by non-target species such as kangaroos and wallabies is restricted.
- Placement of bait – poisoned bait may be broadcast instead of concentrated in a trail, to decrease the consumption of poisoned bait by non-target species. Poisoned bait should be placed in the prime feeding areas of rabbits.
- Timing of baiting – rabbits mostly feed at night, therefore bait laid in the evening will be mostly consumed overnight before non-target species such as birds will have access. However, nocturnal mammals will be at risk when bait is laid in the evening.
- Collection of uneaten baits and rabbit carcasses – any uneaten bait and poisoned rabbit carcasses are collected and either destroyed by incineration or buried.

**Note:** Where there is a significant risk of exposure to non-target animals, measures must be taken to reduce this risk, or bait should not be laid.

### Applying pindone baits

Pindone is available in a manufactured oat bait form as well as bait prepared by ACOs. Persons applying pindone bait material must do so in accordance with the current Pindone PCO and the pindone pesticide label. Persons receiving ACO prepared bait must be supplied with the LLS Pindone directions for use before being issued baits.

The Pindone PCO direction for use and label give detailed information on but is not limited to general restrictions of use, distance restrictions and public notification.

### First Aid – specific recommendations for pindone

**Swallowed:** If swallowed contact medical assistance and transport to a hospital or doctor immediately. Effects are cumulative and delayed.

**Eye:** Hold eye(s) open and wash with running water for at least 15 minutes until product is removed. Ensure irrigation under the eyelids by occasionally lifting the eyelids. Transport to hospital or doctor immediately if eye irritation develops. Do not attempt to remove contact lenses unless trained.

**Skin:** If skin contact occurs, remove all contaminated clothing including footwear and wash skin thoroughly with soap and water. Transport to hospital or doctor if skin irritation develops.

**Inhalation of Powder:** Remove victim to fresh air. If breathing is shallow, or stopped, ensure the airway is clear and apply resuscitation or oxygen if available. Transport to hospital or doctor immediately.

**Advice to doctor:** Vitamin K1 (phytomenadione) is antidotal if the patient shows signs of bleeding or haemorrhage.

### Bromadiolone

Bromadiolone is a second generation anticoagulant poison used to control mice around sheds and silos. Second generation anticoagulants are quick acting poisons and, unlike with the first generation anticoagulants such as pindone, require only a single dose to be effective. Second
generation anticoagulants such as bromadiolone are also effective against mice that have developed a resistance to first generation anticoagulants.

**Bromadiolone physical and chemical properties**

Bromadiolone is available commercially as a prepared bait using various substrates.

**Bromadiolone mode of action**

Bromadiolone interferes with the vitamin K cycle, disrupting the clotting ability of blood. The potency of bromadiolone is about 10 times that of other anticoagulants. Eventually, bromadiolone causes death due to internal haemorrhage. Time between ingestion and death appears to be from one to 14 or more days.

**Bromadiolone: Minimising the risk to non-target animals**

Non-target species must consume comparatively large amounts of bait to reach a toxic or lethal dose. To minimise risk to non-target species, baiting should comply with the pesticide label.

**Applying bromadiolone baits**

Bromadiolone is available in a variety of manufactured bait forms. A person applying bromadiolone baits must read and follow all directions on the pesticide label.

**First Aid – specific recommendations for bromadiolone**

- **Swallowed:** If swallowed, rinse mouth thoroughly with water, contact medical assistance and transport to a hospital or doctor immediately. Effects are cumulative and delayed in action.
- **Eye:** Hold eye(s) open and wash with running water. Ensure irrigation under the eyelids by occasionally lifting the eyelids. Transport to hospital or doctor immediately if eye irritation develops.
- **Skin:** If skin contact occurs, remove all contaminated clothing including footwear immediately and wash skin thoroughly with soap and water.
- **Inhalation:** Inhalation is unlikely as this product is produced as an aqueous solution. If in doubt contact the Poisons Information Centre on 131 126 or a doctor.
- **Advice to doctor:** Vitamin K1 (phytomenadione) is antidotal if the patient shows signs of bleeding or haemorrhage.

**Coumatetralyl rodent bait – Racumin 8®**

Coumatetralyl rodent bait is a prepared bait using Racumin 8 ® Rat and Mouse Rodenticide. Coumatetralyl is its active constituent in Racumin 8®. Coumatetralyl is a first generation anticoagulant poison similar to warfarin. It is used to control rats and mice around farm buildings. Being a first generation anticoagulant, multiple doses need to be consumed to receive a lethal dose as a single dose exposure may not produce toxic symptoms as the compound is quite rapidly metabolised.

Coumatetralyl is an S6 poison and it should be used in accordance with the current APVMA Permit, the product label and SDS.

To prepare bait using Racumin 8® you must be an ACO who has undergone the appropriate level of training in the use, handling and storage of coumatetralyl.

**Coumatetralyl physical and chemical properties**

Racumin 8® is a violet coloured odourless powder concentrate containing 8 g/kg of the active constituent coumatetralyl usually supplied in 10 kg tubs.
The concentrate is mixed with grain and canola oil, the canola oil having a multi-purpose role to help the powder bind to the grain, to attract mice and encourage ingestion.

**Coumatetralyl mode of action**

Coumatetralyl reduces the clotting ability of blood by disrupting the vitamin K cycle. Animals die from internal haemorrhaging within 3 to 8 days after the initial dose.

Poison bait must be available over several days to ensure rodents receive a lethal dose. Few rodent carcasses are seen after poisoning because most rodents die in or under the harbour being used such as holes and hay bales but rodents may be active in the treated area for many days after eating the poisoned bait. Where possible carcasses should be collected and disposed of according to the pesticide label.

**Environmental fate of coumatetralyl**

Coumatetralyl has a similar environmental fate to that of pindone and other anticoagulant poisons, and is not expected to constitute a significant health hazard.

Secondary poisoning through the consumption of rats and mice killed with coumatetralyl may occur in dogs, cats and carnivorous birds such as owls.

**Coumatetralyl: Minimising the risk to non-target animals**

Non-target organisms are potentially at risk from direct consumption of baits and through eating poisoned rodents. To reach the toxic or lethal dose, the non-target species must consume bait over a sustained period.

A person taking possession and applying Coumatetralyl rodent baits must be given a copy of the pesticide label and the current APVMA Permit, read it and follow all directions. Risk minimisation strategies are detailed in both the pindone and bromadiolone sections of this Manual.

**Applying coumatetralyl rodent baits**

Persons applying Coumatetralyl rodent bait material must do so in accordance with the pesticide label and the current APVMA Permit and directions for use.

**First Aid – Specific recommendations for Racumin 8® concentrate or Coumatetralyl rodent bait**

If poisoning occurs, immediately contact a doctor or Poisons Information Centre, Phone 131 126, and follow the advice given.

**Ingestion:** If swallowed, seek immediate medical advice.

**Eye:** Hold eye(s) open and flush with running water for at least 15 minutes. Ensure irrigation under the eyelids by occasionally lifting the eyelids. Transport to hospital or doctor immediately if eye irritation develops.

**Skin:** If skin contact occurs, remove all contaminated clothing including footwear immediately and wash skin thoroughly with soap and water.

**Inhalation:** Move the patient to fresh air and keep at rest.

Coumatetralyl inhibits vitamin K1-dependant coagulation.

**Brodifacoum**

Brodifacoum is an S6 poison and it must be used in accordance with the product label.

Brodifacoum is a second generation anticoagulant poison like bromadiolone. It is commonly available to the general public in retail stores in the form of pellets or wax blocks.
As a second generation anticoagulant, brodifacoum usually requires only a single feed to deliver a lethal effect. APVMA minor use permits may be utilised to enable use of brodifacoum in the form of bait for bait stations or to be distributed with spreading equipment, on islands of the coast of NSW.

**Rabbit haemorrhagic disease virus**

Rabbit haemorrhagic disease (RHD), is an acute, highly contagious viral disease which only affects the European wild rabbit *Oryctolagus cuniculus* and its domestic relatives. The virus was first reported in China in 1984 and rapidly spread across China and Europe. Subsequently it has also occurred in northern Africa, North America and on islands in the Indian Ocean. To date it has been reported in over 40 countries world-wide.

Two RHDV virus types are present in Australia. RHDV1 was first registered as a biological control agent in Australia in 1996. It is now registered for use as a viral suspension that can be delivered via carrot or oat bait or through an injection of the product into a live rabbit.

RHDV2 was first identified in the Australian rabbit population in May 2015. RDHV2 first appeared in Europe in 2010. The epidemiology, pathology and diagnosis is the same as RHDV1, however RHDV2 is not species specific. It infects both European rabbits and a number of hare species; although it’s effectiveness in the European hare (*Lepus europaeus*), Australia’s only hare species is unknown. It is not known how RHDV2 entered Australia.

RHDV1 is now prevalent in the majority of wild rabbit populations in Australia and high levels of immunity to the virus occur periodically. It is not recommended to release RHDV1 into a population of rabbits with high immunity.

The spread and impact of RHDV2 is under evaluation. Its ability to overcome antibodies to RHDV1 is unknown, however it appears it can overcome the protection provided by vaccinations for RHDV1 in some cases.

**RHDV biological properties**

RHDV comprises an RNA molecule, enclosed in a protein coating. Like all viruses, it reproduces only within the living cells of the host. The virus is harvested from laboratory rabbits that have been inoculated with the virus. The currently registered strain is designated CAPM V-351. A second strain of RHDV1, K5, is currently undergoing the registration process. Further research on other strains is ongoing.

**RHDV mode of action**

In most adult rabbits the disease progresses rapidly from fever and lethargy to sudden death within 48–72 hours of the time of infection. The virus causes acute liver damage from blood clotting. Death occurs due to obstruction of blood supply in vital organs, internal haemorrhages and acute multiple organ failure.

**Effectiveness of RHDV**

Rabbits infected with the virus develop the disease within one to three days. The virus is lethal in more than 75% of infected susceptible rabbits. Rabbits younger than 12 weeks that become infected with RHDV1 are less likely to die because they have maternal antibodies that protect the young rabbit from disease and animals younger than 6 weeks are innately resistant to infection with RHDV1. Young rabbits that survive infection become immune adults. RHDV2 appears to be lethal to young rabbits; animals as young as 4 weeks.

Since its release in 1996, natural outbreaks of the RHDV1 continue to have variable effects on rabbit populations. This variability is due to many factors. One factor is that natural outbreaks do not always coincide with times when rabbit populations are most susceptible to the disease.
Secondly, some populations of rabbits in high rainfall areas have partial immunity to RHDV1 because they carry a benign strain of the virus, RCA-A1. The new K5 strain of RHDV1 was selected because it can overcome the protective effects of the benign virus. Because of the presence of RCV-A1 in the high rainfall, cool wet regions of the country the impact of RHDV1 CAPM V351 has generally been greatest in the arid and semi-arid zone.

The timing of RHDV spread is important. If an outbreak occurs in early spring, it is more likely to immunise young rabbits and the virus may be less effective. When outbreaks occur in autumn or winter, after spring and summer born rabbits have grown into adults, the effectiveness of RHD is likely to be greater. Therefore the optimum time to release RHDV into a susceptible rabbit population is early autumn.

**RHDV: Minimising the risk to non-target animals**

RHDV1 has not been known to infect or cause death to any other animal species in the wild apart from rabbits. All rabbits in Australia are derived from the European wild rabbit and are therefore potentially susceptible to infection. Farmed and pet rabbits should be vaccinated against RHDV1. Vaccinations are available from veterinary practitioners.

RHDV2 has been shown to infect a number of hare species. The vaccine currently available in Australia only offers partial protection against RHDV2. New vaccines have been developed in Europe but they are not currently available in Australia. The Australian Veterinary Association has a revised vaccination schedule to help protect against RHDV2 using the currently available vaccine. Vaccinations are available from veterinary practitioners.

**Applying baits inoculated with RHD virus suspension**

Persons applying bait materials inoculated with RHDV must do so in accordance with the current PCO for Rabbit Haemorrhagic Disease and Part B of the RHDV Lyophilised Label.

**General restrictions**

Restrictions include:

- treated baits may only be administered to wild rabbits
- rabbits visibly affected by myxomatosis should not be baited
- baiting of rabbits older than 12 weeks is recommended
- if the existence of a critical native population is suspected in the area of baiting, advice should be sought from State or Territory conservation agencies so that appropriate predator control measures can be implemented if necessary.

**Free feeding**

Rabbits should be free fed according to the label instructions. Free feeding should occur at least twice when using carrots and three times when using oats. Treated baits should be applied at a rate of 10% of the rate applied in the final night of free feeding.

**First aid – specific recommendations for RHD virus**

Thoroughly wash exposed skin with soapy water after preparing bait feed. If injected or an adverse reaction occurs, seek immediate medical advice.
Fumigants

**DO NOT** store fumigants in an air tight building. **DO NOT** transport fumigants in the cabin of a vehicle. All fumigants must be stored in well-ventilated areas and never opened in an enclosed space. Where possible, fumigants should be stored adjacent to a vent or metal grill that opens to the outside and the storage facility should be fitted with roof ventilators.

**Phosphine**

The main diffuse or static fumigant used in NSW is phosphine gas. Poisoning occurs by inhalation, although swallowing a tablet is lethal. The gas is not readily absorbed through the skin. There are a number of registered phosphine tablet products available. Search the APVMA Pubcris database to see what products are currently available. [http://portal.apvma.gov.au/pubcris](http://portal.apvma.gov.au/pubcris)

**Phosphine physical and chemical properties**

Phosphine is a colourless gas, about 20% heavier than air, with a slight garlic odour. Phosphine gas is generated when aluminium phosphide tablets are exposed to moisture in the air. It remains gaseous at all normal temperatures and spreads quickly. The gas can react with copper, copper compounds, silver and gold at high temperatures.

Tablets weigh 3 g and begin to emit phosphine immediately on exposure to moisture in the air. Complete decomposition takes about 48 to 72 hours depending on the humidity. Tablets come in tubes and packs with varying numbers ranging from 30 to 100 tablets.

Fumigation tablets contain 560 to 570 g/kg of aluminium phosphide which produces 330 g/kg phosphine gas. Each 3 g tablet releases 1 g of phosphine gas when exposed to moisture in the air or soil.

**Phosphine mode of action**

Phosphine is a systemic poison which depresses the central nervous system and respiratory function. It is highly toxic to humans; therefore operators performing warren fumigation must take adequate precautions to safeguard against accidental exposure.

Time to death can be highly variable depending on the concentration of gas in the burrow. For example, at concentrations of 400 ppm phosphine can kill rabbits in 30 minutes whereas at 25 ppm death will take 4 hours. The time taken to reach high concentrations throughout the warren largely depends on the amount of moisture in the soil and air, or on the tablets. In low humidity, complete release of phosphine gas from the tablets may take hours or even days. Higher humidity will cause a rapid rate of diffusion and therefore result in higher concentrations of gas so that the rabbit will be exposed to a lethal dose in a shorter time and will have less chance to dig out of the burrow.

**Sensitivity and susceptibility to phosphine gas**

Phosphine is not species specific and is highly toxic to humans and animals.

Animal experiments have revealed that rabbits exposed to 70 mg phosphine/m3 (50 ppm) for 10 minutes do not develop any symptoms but exposure to 140 mg/m3 (100 ppm) is fatal in 2.5 to 3 hours, and 700 mg/m3 (500 ppm) is fatal within 25 to 30 minutes.

For humans, the short term exposure limit is 0.3 ppm and concentrations of 50 ppm are immediately dangerous to health.

**Environmental fate of phosphine**

Aluminium phosphide will break down spontaneously in the presence of water to form a gaseous product, and so it is non-persistent and non-mobile in the soil environment, and poses no risk to
groundwater. It is highly unlikely that aluminium phosphide or phosphine will be found in surface waters. Phosphine decomposes in the atmosphere within 5–28 hours.

It should be noted that phosphine gas, when liberated by contact with moisture, can be toxic to fish and aquatic organisms, and every care should be taken to avoid contamination of aquatic environments.

**Phosphine: Minimising the risk to non-target animals**

Fumigation of rabbit warrens is one of the most target-specific means of rabbit destruction and will have little impact on non-target species if used correctly. Fumigation must only be used in active, occupied warrens. If a warren appears to be empty or possibly occupied by a non-target species (e.g. wombats, dingoes, lizards, snakes), fumigation must not be performed.

There appears to be no significant risk of secondary poisoning if carcasses of gassed animals are consumed by non-target predatory or scavenger species. If using dogs to work an area prior to warren fumigation, the following should be observed:

- Dog handlers must be experienced and the dogs well trained. The dogs must be easily controlled by a whistle or call and obey the handlers’ commands.
- Dogs must not chase or attack non-target animals including livestock.
- Dogs are not allowed access to treated warrens.
- To ensure that dogs are not exposed to phosphine gas or allowed access to treated warrens, handlers must ensure that dogs are well restrained during and after fumigation.

**Using aluminium phosphide tablets – health and safety**

- Operators must strictly follow the directions on the approved label when using and storing aluminium phosphide tablets. They must not be used for any other purpose than the destruction of rabbits in active warrens.
- Fumigation must always be carried out by two trained persons and must not be carried out in wet conditions when it is likely that the tablets will become wet before insertion in the burrows.
- As phosphine gas is heavier than air consider working from low areas to high rather than operating in areas where phosphine gas may pool.
- Consider purchasing phosphine tablets on-route to work site and using all phosphine tablets in a canister at the worksite to reduce risk of storage and transport.
- Phosphine is highly toxic to humans and can kill if the tablets are swallowed or the liberated gas is inhaled. Avoid contacting the skin with aluminium phosphide or breathing phosphine gas.
- Symptoms of overexposure to phosphine gas include headache, dizziness, nausea, and difficulty breathing. Severe exposure may damage liver, kidneys, lungs, and nervous and circulatory systems, and may cause death.
- Appropriate PPE should be worn when using aluminium phosphide fumigants. This includes:
  - overalls
  - elbow length PVC or rubber gloves
  - full-face respirator with combined dust and gas cartridge (canister) or breathing apparatus with air supply. Cartridges should be changed after each day use.
- After use and before eating drinking or smoking, wash hands, arms and face with soap and water.
- After use, wash contaminated clothing and gloves.
- For further information refer to the SDS available from the supplier.
First Aid – specific recommendations for aluminium phosphide

If poisoning occurs, go to a doctor or hospital quickly.

If swallowed, rinse mouth thoroughly with water and contact the Poisons Information Centre on 131 126. Urgent hospital treatment is likely to be needed. Do NOT give mouth to mouth resuscitation if this product has been swallowed. If a patient has swallowed aluminium phosphide they may begin emitting toxic phosphine gas. First aid and medical staff should take precautions against exposure to phosphine emitted by such a patient.

If eye irritation occurs flush the contaminated eye(s) with lukewarm, gently flowing water for 5 minutes or until the product is removed, while holding the eyelid(s) open. Obtain medical advice immediately. If irritation persists, repeat flushing and obtain medical advice. If any unusual symptoms become evident, or if in doubt, contact the Poisons Information Centre on 131 126 or a doctor.

If inhalation occurs seek medical assistance immediately. Remove source of contamination and move the patient to fresh air as soon as possible.

DO NOT administer mouth-to-mouth resuscitation – use other forms of resuscitation. DO NOT allow victim to move about unnecessarily. Symptoms of pulmonary oedema can be delayed up to 48 hours after exposure.

Chloropicrin

Chloropicrin is registered for use as a pesticide in Australia and is mainly used as a fumigant to control pest species in soil, however it is also used to control vertebrates such as rabbits.

Chloropicrin is the active ingredient of the liquid available in 500 mL bottles as Rural Larvacide Rabbit Fumigant®. Chloropicrin can only be used through a pressure fumigator if the operator has had appropriate training in addition to chemical accreditation at AQF3 level (Landholder Fumigation Exemption Order). A Supervisor who supervises and trains others in using chloropicrin and/or aluminium phosphide must have chemical users AQF4 level training in addition to vertebrate pesticides / fumigation training.

The EPA licence fumigators that use chloropicrin but there are currently exemptions that apply to some agricultural use. There are exemptions that have been issued (by SafeWork previously) which allow LLS staff to use chloropicrin without a fumigator licence – contact EPA Chemical Regulation Unit for further information. There is also an exemption from the licence requirements for farmers who use chloropicrin to control insect pests in stored product and vertebrates on farm, further details can be obtained from the EPA Chemical Regulation Unit. This exemption does not apply to persons who are employed to use such products as part of a business or trade provided to farmers or any other rural industry.

Chloropicrin physical and chemical properties

Chloropicrin was first synthesised from picric acid (2,4,6-trinitrophenol) and calcium hypochlorite in 1848. It is a powerful lachrymator (‘tearing agent’) with a strong, sharp and highly irritating odour. It is variously described as a clear, colourless-to-light-green or colourless-to-faint-yellow oily liquid.

Chloropicrin was used for chemical warfare in World War I as a tear gas.

It works as a fumigant by evaporation of the liquid, but the gas does not spread as quickly as phosphine, being five and a half times as dense as air. Chloropicrin is non-corrosive to copper and brass but attacks most other metals.

Chloropicrin mode of action

Poisoning occurs by inhalation. Chloropicrin gas in very small concentrations is highly irritating to the lungs and eyes. Lethal chloropicrin toxicosis from fumigation causes death from pulmonary
oedema, bronchopneumonia, emphysema or bronchiolitis obliterans. The toxicity of chloropicrin is primarily influenced by effects on the small and medium bronchi and the speed at which death occurs depends upon the concentration and period of exposure.

In liquid form it will cause burns and must be immediately washed off affected skin or eyes. Remove any contaminated clothing immediately.

**Sensitivity and susceptibility to chloropicrin**

For humans, the time weighted average or working week exposure limit for chloropicrin is only 0.1 ppm. Chronic exposure to chloropicrin is not a risk as the gas is so irritating at low doses, being a very strong tear gas, that it would be impossible to remain long enough for chronic toxicity to occur.

**Environmental fate of chloropicrin**

Chloropicrin degrades to carbon dioxide in soils with a half-life between 8 hours and 4.5 days. Chloropicrin moves rapidly in soils and can diffuse to 1 m in sandy soil. It is unlikely to move rapidly in water due to its low solubility.

Chloropicrin will volatilise quickly in water and from soils. It is not expected to adsorb to soil particles.

It should be noted that chloropicrin is toxic to fish and every care should be taken not to contaminate aquatic environments.

**Chloropicrin: Minimising risk to non-target animals**

Refer to “Minimising the risk to non-target animals” under phosphine fumigation.

**Using chloropicrin for pressurised fumigation**

You must take extreme care when handling and using chloropicrin because it is extremely dangerous. Undiluted chloropicrin is highly toxic by inhalation, ingestion or direct contact with the skin or eyes. Inhalation exposure to very high levels, even briefly, can lead to pulmonary oedema, fluid accumulation and swelling of the lungs, unconsciousness and even death.

When handling chloropicrin the handler must have adequate protective clothing. As chloropicrin is chemically inert and many canister-type respirators will not absorb the chemical only positive pressure breathable air type respirators should be used. Other equipment includes impermeable overalls, elbow-length impervious gloves. Operators must ensure the entire face particularly the eyes are covered and protected.

**First Aid – Specific recommendations for chloropicrin**

If there is any contact by any route (apart from very minor inhalation), contact the Poisons Information Centre or a doctor immediately. Do not wait for symptoms of poisoning. Operators should have a plentiful supply of soap and water for washing present when chloropicrin is being used.

Eye wash baths should be available when chloropicrin is being used. Where practical, deluge showers should be provided when this product is being used.

If no breathing difficulties have developed give water to dilute (maximum 250 mL for adults; 125 mL for children). Obtain medical attention immediately.

If in eyes, hold eyes open, flood with water for at least 15 minutes. Ensure irrigation under eyelids by occasionally lifting them. Do not try to remove contact lenses unless trained. See a doctor.

If skin contact occurs, remove contaminated clothing and wash skin thoroughly with soap and running water (for at least 15 minutes). If safety shower is available, use it promptly. Seek urgent
medical attention if skin blisters, or if it looks or feels unusual. Because of the toxicity of this product, quick action may save a life.

Remove from contaminated area. Apply artificial respiration if not breathing. If giving mouth-to-mouth resuscitation wash out patients mouth and lips – do not inhale patient’s expired air. If vapours or mists have been inhaled, and irritation, including a cough or difficulty breathing, or other unusual symptoms have developed, seek medical advice. Get to a hospital or doctor quickly. Monitor breathing for several hours after exposure.

**Carbon monoxide – DEN-CO-FUME®**

Carbon monoxide fumigant cartridge known as DEN-CO-FUME® is the only fumigant registered for foxes and that may be used on fox natal dens.

Carbon monoxide gas is very toxic and poisoning occurs via inhalation. The absorption and resulting symptoms are dependent on the concentration of carbon monoxide in the inspired air, the time of exposure and the state of activity of the person exposed.

**Carbon monoxide physical and chemical properties**

Carbon monoxide is a colourless and odourless gas. Carbon monoxide is formed when DENCO-O-FUME® cartridge is ignited by the lighted fuse. The subsequent smoke is poisonous if inhaled. The smoke is non-irritating.

DEN-CO-FUME® cartridges weigh 240 g and contain 65% sodium nitrate and 35% charcoal. These cartridges are capable of producing concentrations of carbon monoxide up to 3% in a dead volume of 1000 litres (1 m³).

**Carbon monoxide mode of action**

When inhaled carbon monoxide combines with haemoglobin in red blood cells, with an affinity 250 times that of oxygen, to form carboxyhaemoglobin. This results in reduced oxygen-carrying capacity and altered delivery of oxygen to cells. Hypoxia, the reduction of oxygen supply to the tissues, eventually leads to unconsciousness and death.

While exposure to very low levels of carbon monoxide may cause no symptoms or only slight headache and shortness of breath, longer exposure to higher concentrations of carbon monoxide will convert more than 50% of blood haemoglobin to carboxyhaemoglobin. Prolonged exposure to concentrations of carbon monoxide over 1000 ppm (0.1%) causes loss of consciousness, failure of the respiratory system followed by death from cardiac arrest. Death occurs without pain and while the animal is unconscious. Time to death depends on the final carbon monoxide concentration but is typically within minutes or a few hours at a concentration greater than 1%. Higher concentrations are achieved in smaller dens.

**Sensitivity and susceptibility to carbon monoxide**

Carbon monoxide is extremely hazardous to humans and is highly toxic to most mammals and difficult to detect. Species specificity is achieved from accurate identification of occupied fox natal dens. Effects may be rapid if exposed to high concentrations of carbon monoxide.

**Environment fate of Carbon monoxide**

Carbon monoxide is biologically degradable and will not accumulate in soil or water.

**Carbon monoxide: Minimising the risk to non-target animals**

Fumigation of occupied fox natal dens is very target-specific and will have little impact on non-target species if used correctly. To minimise the risk to non-target species monitor the den to ensure other species are not using the den before fumigation is undertaken.
Using carbon monoxide fumigant cartridges and work health and safety

Operators must strictly follow the directions on the DEN-CO-FUME® label and SDS when using and storing carbon monoxide fumigant cartridges. This product must not be used for any other purpose than the fumigation of active fox natal dens.

Carbon monoxide is highly toxic to humans and can kill if the resulting smoke is inhaled. It is essential to have adequate fresh air available to the operators during use of cartridges. Do not inhale smoke.

Appropriate personal protective equipment should be worn. This includes:

- protective gloves
- protective glasses
- respiratory protective equipment is recommended although in the SDS it is stated as not necessary when fumigation is conducted in the open air.

Manufacture’s recommended method of use:

Determine the location of active fox natal dens.

Before igniting, unwind the 50 cm fuse and open holes at the top of the cartridge around the inserted fuse. Using a broom handle or flexible hose establish that no animals are within 1.5 m of the entrance.

Place the cartridge, in the direction of the arrow, into the entrance of the active fox natal den. Bend the fuse back along the cartridge so it can be lit.

Ignite the fuse, confirm that the cartridge has ignited and seal the entrance to the den with earth. If smoke emerges from any other entrances attempt to seal these with earth also.

Do not disturb the den after fumigation.

Rates of application of carbon monoxide

When dens are in enlarged rabbit warrens with several entrances or of large volume it may be appropriate to use two cartridges. The total carbon monoxide concentration achieved with multiple cartridges is additive that is 2 cartridges produce up to 6% carbon monoxide.

First aid – specific recommendations for carbon monoxide

If poisoning with carbon monoxide occurs, immediately move person to fresh air, if safe to do so. Contact a doctor or Poisons Information Centre, Phone 131 126. Have the SDS or the product label with you.

Contents are poisonous if swallowed and may irritate the eyes, nose and throat. Once the Denco-O-Fume® cartridge is ignited it will burn vigorously until completely spent and is capable of causing severe burns to exposed skin and clothes.

Swallowed: Seek medical attention.

Eye: Flush thoroughly with copious amounts of running water. If symptoms persist, seek medical attention.

Skin: Remove contaminated clothing. Wash skin thoroughly with soap and water.

Inhaled: If headache or drowsiness occurs transfer victim from contaminated area to fresh air and give oxygen if available. If unconscious, give artificial respiration and get to a hospital or doctor quickly.

Strychnine

Use of strychnine treated cloths on traps should only be considered in extraordinary circumstances, and only used after undertaking and documenting a rigorous risk assessment.
process. There are significant work health safety and animal welfare issues associated with its use. It is not appropriate to use strychnine cloths as a response to decreasing budget allocations or other resource limitations. Use of strychnine is only permitted under a current APVMA permit.

Strychnine impregnated cloths may be used on rubber jawed traps for wild dog control when traps cannot be serviced daily. Trap-jaws are bound with strychnine-laced cloths to hasten death and prevent prolonged suffering.

Strychnine is extremely dangerous to both humans and wildlife. Even where circumstances suggest it may be appropriate, it must only be used provided the following requirements are met as a minimum:

- An ACO issuing strychnine must undertake a risk assessment covering humaneness considerations for both target and non-target species. This needs to include procedures to deal with animals captured which have not chewed the strychnine cloth.
- An ACO issuing strychnine must complete a Safe Work Methods Statement or Job Safety Analysis that covers work health safety requirements of not only the person setting strychnine traps but also members of the public or anyone else who may come into contact with strychnine if attempting to release animals from traps.
- PUNP requirements must be met where strychnine is to be used on public lands and must include:
  - Appropriate notification to all those who could be exposed, prior to the trapping program being undertaken
  - Appropriate signage throughout the course of the trapping program to ensure anyone in the area is aware of the issue/danger.

As identified in Appendix I the lower limit of strychnine LD_{50} for a 70 kg human is 70 mg. The current APVMA Strychnine permit stipulates a dose rate of 1g (1000mg) for strychnine cloths with up to 2 cloths per trap. This is a potential presentation in the field of over 14 lethal human (70 kg) doses per single strychnine cloth. For comparison 1080 LD_{50} for a 70 kg human is 140 mg with a fox bait containing just 3 mg of 1080 and a wild dog bait containing 6 mg of 1080.

**Strychnine physical and chemical properties**

Strychnine hydrochloride is the hydrochloride of the alkaloid strychnine, which is obtained from the seeds of *Strychnos nux-vomica* L. and other species of *Strychnos*. In its solid form strychnine hydrochloride is described as colourless prismatic crystals or a white crystalline powder, with an intensely bitter taste.

**Strychnine mode of action**

Strychnine is highly toxic and can enter the body and be rapidly absorbed through inhalation, ingestion and broken skin. Once absorbed, strychnine enters the blood stream and acts on the central nervous system, affecting the transmission of nerve impulses which control muscle contraction. Strychnine also causes an increase in the levels of glutamic acid in the brain. This can lead to the skeletal muscles becoming hyper excitable causing simultaneous muscle contraction, convulsions and seizures which prevent respiration. Death generally results from suffocation or exhaustion. Fortunately, the kidney and liver work to eliminate the poison from the body and if a sub-lethal dose is taken, this inhibition is reversible.

**Sensitivity and susceptibility to strychnine**

Strychnine-sensitivity is fairly broad and it is therefore more difficult to achieve target specificity. Dogs are moderately susceptible to strychnine. Appendix I shows the susceptibility of different animals to strychnine.
**Environmental fate of Strychnine**

Strychnine shows little or no breakdown by exposure to light.

Strychnine can be degraded in some soils as a result of microbial activity however; this degradation is generally very slow. Microbial degradation doesn’t appear to occur in some instances because the strychnine gets bound to soil particles, a factor that is influenced by the soil pH.

**Strychnine: Minimising the risk to non-target animals**

Species other than canids may not gnaw at the jaws of the trap and so will be unlikely to be poisoned by contact with strychnine cloths. However it should be noted that traps are not target specific, so a wide range of non-target species may be caught. These can include birds, kangaroos, wallabies, rabbits, hares, goannas, possums and sheep. If there is a high risk of trapping non-target animals, traps should not be set.

**Storage and disposal of Strychnine**

- All strychnine powder, strychnine cloths and mixing equipment must be stored in a locked metal cabinet and only the ACO who uses it is permitted access.
- All strychnine containers must have sufficient strength and be impermeable to prevent leakage of its contents and have a label that clearly identifies it as strychnine hydrochloride, a schedule 7 poison and have safety directions and first aid instructions.
- Containers that have held cloths are not to be used for any other purpose and must be disposed of by deep burial.
- Used cloths must be recovered and disposed of by deep burial.
- Do not contaminate dams, rivers, waterways or drains with the cloths or used containers.

**Procedure for the use of strychnine cloths on wild dog traps in NSW**

NSW DPI recommends that padded jaw traps are checked daily to maximise the effectiveness of programs, minimise stress of trapped animals and enable the safe release of non-target species. The use of strychnine on padded jaw traps is not a preferred option for wild dog control in NSW.

A ‘strychnine cloth’ is a strip of fabric wrapped around the jaw of a padded jaw trap to which strychnine is applied. When caught, the wild dog must chew on the cloth to receive a fatal dose of poison.

There are occasions when, for whatever reason, the dog does not chew the cloth, the cloth or wire attaching it unravels in the initial encounter with the trap or the strychnine is leached out with excessive rain and the poison is dispersed. For these reasons checking traps should be a daily requirement of any trapper.

A risk assessment must be undertaken and recorded to determine if the use of strychnine cloths on padded jaw traps is a suitable and safe strategy to control wild dogs in a particular location.

Operators using strychnine must strictly follow the directions on the current APVMA permit when preparing for use, using, storing or disposing of the pesticide.

**Applying strychnine to the padded jaw trap**

1. Check traps for wear and repair if necessary.
2. Wearing the correct PPE and using either a trap setting device or sufficient manual force, open the jaws and wedge open or clamp the springs to prevent the trap closing.
3. Position the trap so there is easy access to the jaw normally held under the dog or tongue of the trap. This jaw will be wrapped in the cloth.
4. Place strychnine pad on one jaw only (see figure 7 below).
5. Cut hessian or similar coarse fabric into strips about 6.5 cm wide and 30 cm long for Lanes size traps or 20 cm long for Victor or similar sized traps and a 30 cm piece of soft wire.

6. Wrap the cloth strips in a bandaging pattern around one section of the held jaw, overlap the cloth by 50% as it wraps around the jaw.

7. Make 2 full wraps of the jaw.

8. Along the cloth place 1 g of strychnine crystals on, what is normally, the top surface of the jaw when the trap is closed.

9. Continue wrapping the jaw with the remaining length of cloth, making sure the area treated with strychnine is well covered.

10. Using a piece of soft wire, fasten the cloth pad at one end and starting on one side of the cloth pad, firmly wrap the wire several times around the jaw and pad. Make sure the wire cannot cause injury to a trapped animal.

11. Twist the wire underneath the jaw and cut off the excess. Repeat for the other end of the cloth pad, ensuring that the central 4 cm of the cloth pad is free of wire.

12. Ensure the wire is firmly attached and will not be ripped away before the dog chews on the soft wrapping, otherwise, the wrapping may be torn away and the wild dog may not ingest any poison.

13. As a precaution against strychnine loss through the cloth, some trappers may bind the finished strychnine pad with a thin wrap of electrical insulation tape.

14. Remove clamps, set and place the trap.

Figure 8. Strychnine cloth wrapping of a lanes trap and covered with electric tape

Minimum PPE for strychnine

Appropriate PPE must be used;

- Overalls buttoned to the wrist, boots and washable hat, use of chemically impervious gloves, a face mask or safety glasses, dust mask appropriate to inhalation risk with Class P1 particulate respirator or full face class P3 particulate respirator.

- After use and before eating drinking or smoking, wash hands, arms and face with soap and water. Wash contaminated clothing and gloves.

For further information on strychnine refer to the SDS, available from the supplier.

First aid – specific recommendation for strychnine

Signs of poisoning include muscle rigidity, joint stiffness, muscle aches, weakness, headache, light sensitivity.

A low level of tolerance to strychnine appears to develop; however, repeated higher doses can lead to convulsions and other acute signs. Continual chronic exposure may ultimately cause severe incapacitation.

IF POISONING OCCURS IMMEDIATELY CALL 000 TO REQUEST AN AMBULANCE!
Call 131 126 for Poisons Information.

Remove any contaminated clothing from the patient.

Wash any effected skin thoroughly with free flowing clean water.

Do not induce vomiting.

NOTHING should be administered to the patient by mouth.

Place the patient into the recovery position to ensure their airway remains clear. If the patient stops breathing only administer resuscitation if sure that there is no risk to the rescuer ingesting the poison from the patient through mouth-to-mouth contact. A suitable barrier mask should be used if applying resuscitation.

Be aware that the patient may have convulsions.

Reassure the patient and keep them calm. If possible keep the patient in a quiet, dark place because they may be highly sensitive to noise and light.

Wait for medical staff to arrive or if this is not possible take patient to doctor or hospital as soon as possible

Make sure the strychnine product container, label and SDS is available to medical staff.

**Transport of strychnine**

Strychnine products and padded jaw traps with strychnine pads must be transported in a locked metal container firmly attached to a secured part of the vehicle and outside the cabin. Strychnine must never be transported with foodstuffs. Vehicles carrying poison must not be left unattended. Domestic animals must be segregated from the poison. Placing the strychnine container in a small locked toolbox inside an anchored and locked metal toolbox would be ideal for transportation.

**Disposal of carcasses**

Dispose of poisoned carcasses by deep burial at least 500 mm deep and cover with soil.

Do not store traps with fabric attached unless intended for immediate use and dispose of all strychnine impregnated fabric after 3 months.
Appendix A - Developing local and regional pest management plans

Vertebrate pest management plans should provide a clear understanding of the pest problem/s in a region or local area, identify the impacts of pest animals and, set clear and achievable goals, objectives and activities required to implement the plan. Plans will vary from region to region, however a number of common planning and development principles should be applied. Table 2 below proposes ten steps adapted from Braysher, M and Saunders, G. 2003, PESTPLAN: “A guide to setting priorities and developing a management plan for pest animals” that should be considered to develop a successful vertebrate pest management plan.

Table 2. Ten step process for developing a regional or local vertebrate pest management plan.

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
<th>Key considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Define the problem</td>
<td>Concentrate on managing and reducing the impacts rather than focusing on pest abundance and distribution alone. Identify and if possible, quantify the production and /or conservation values under threat from pests. Does the cost of pest control outweigh the benefits from control?</td>
<td>Is the problem real or perceived? Define the problem in terms that measure the impacts of the pest animals.</td>
</tr>
<tr>
<td>Identify and engage key stakeholders</td>
<td>Identify stakeholders who may be impacted by the management plan. Involving stakeholders early is likely to improve the level of cooperation and involvement. Stakeholders may be engaged as early as Step 1 of the process.</td>
<td>Discuss the problem with affected land managers to identify the scope of the problem, who has the problem, where is the problem and how severe is it?</td>
</tr>
<tr>
<td>Identify and prioritise key land management areas</td>
<td>Managing pest animals over a large area may be more easily achieved by dividing regions into smaller, more manageable areas of land guided by: land use, soil or vegetation types or target pest species or areas such as Landcare group, LLS or National Park boundaries. Having clearly defined boundaries, prioritising areas based on their production or land management values, conservation values will facilitate the planning process.</td>
<td>Prioritise areas and management options based on animal impacts. Maps are an invaluable tool when developing strategic management plans.</td>
</tr>
<tr>
<td>Determine management goals and measurable objectives</td>
<td>Define the pest problem(s) in terms of the degree of impact. Set clear, measurable and time-limited objectives aimed at reducing the level of pest animal damage to an acceptable level.</td>
<td>Objectives should be: Specific, Measurable, Achievable, Realistic and Time bound</td>
</tr>
<tr>
<td>Identify and evaluate management options and conduct a risk analysis</td>
<td>The most appropriate management options will depend on a range of variables such as pest species, level of impact, resources, community attitudes and involvement and political pressure. Management targets may include local eradication although rarely achievable, strategic, pulse, sustained, targeted or no control. Consider doing a risk analysis to identify the costs and benefits of the various options, and potential consequences of each of the management options.</td>
<td>Options for control should consider economic, environmental, social, political and legal outcomes. Determine the costs of control. Do these outweigh the benefits? If so, what other approaches may be considered?</td>
</tr>
<tr>
<td>Develop a detailed plan</td>
<td>Detail the actions that will be undertaken: who, what, when, how and where. Identifying milestones and key performance indicators will guide monitoring and evaluation of the plan.</td>
<td>Principles of integrated management should be applied.</td>
</tr>
<tr>
<td>Implement the management plan</td>
<td>Develop and maintain effective communication with stakeholders. Provide regular reports and updates on progress of the plan.</td>
<td>Delegate tasks to stakeholders Use trained and accredited contractors</td>
</tr>
<tr>
<td>Step</td>
<td>Description</td>
<td>Key considerations</td>
</tr>
<tr>
<td>------------------------------------------</td>
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<tr>
<td>Monitor and evaluate outcomes</td>
<td>Measure the performance of your plan against the original objectives. Share the results of your monitoring and evaluation with your stakeholders and seek their input.</td>
<td>Monitor before, during and after the program. Monitor both pest animal numbers and impacts.</td>
</tr>
<tr>
<td>Implement adaptive management</td>
<td>Adaptive management allows the knowledge and experience gained in implementing and monitoring the plan to be incorporated into future actions or to modify and amend the current plan depending on the outcomes being achieved.</td>
<td>Plans should be updated and amended in response to changes, outcomes and contingencies identified during the implementation of the plan.</td>
</tr>
<tr>
<td>Report and share outcomes</td>
<td>Communicate outcomes to stakeholders and the broader community. This will ensure sustained cooperation and support for future programs and initiatives.</td>
<td>Reporting the outcomes of your plan will maintain the support and cooperation of stakeholders.</td>
</tr>
</tbody>
</table>
Appendix B - Summaries of key acts relevant to pest animal management

**Note:** These summaries are not intended to replace or interpret the various Acts; it is intended only to give a broad overview of the areas of the Acts that relate to vertebrate pest management. Complete copies of the legislation listed below are available at: http://www.legislation.nsw.gov.au/, http://www.lawfoundation.net.au/legislation or http://www.austlii.edu.au/

**Agricultural and Veterinary Chemicals Code Act 1994**

The registration of agricultural and veterinary chemicals and their products is conducted through a national registration scheme. All aspects of Agvet chemicals up until the point of retail sale is controlled by the federal *Agricultural and Veterinary Chemicals Code Act 1994* (AgVet Code 1994). The AgVet Code 1994 is administered by the APVMA. State and territory legislation deals with all aspects of Agvet chemicals following the point of sale such as the control of chemical usage. For example, the APVMA regulates 1080 up to and including the point of retail sale. Once supplied to the end user, it comes under the regulation of individual States or Territories. NSW administers 1080 through a PCO issued under the Pesticides Act.

Under the AgVet Code 1994, all pesticides possessed, sold, supplied or intended for use must be registered. It is an offence to possess or use an unregistered pesticide unless approval has been granted through an APVMA permit.

Labels are approved under the AgVet Code 1994. It is illegal to detach, alter, deface, obliterate or destroy the label on a pesticide container or to affix other labels.

The APVMA may declare certain chemical products to be RCPs if special training, and other requirements, are needed to be able to handle or use the chemical.

Products that are declared to be RCPs can only be used by an authorised person. The relevant Australian State or Territory authority, such as EPA in NSW, determines who may be considered as an authorised person.

Legislation relating to RCPs may be found in Part 4, Division 4 of the AgVet Code 1994. Currently RCPs that are vertebrate pest poisons include 1080, pindone concentrate, PAPP and RHDV.

**NSW Biosecurity Act 2015**

The Biosecurity Act promotes biosecurity as a shared responsibility between government, industry and communities. The Biosecurity Act provides for a flexible, outcome focused approach to managing biosecurity risk and impacts. This means that community members are able to achieve the outcomes of preventing, eliminating or minimising the biosecurity risks and impacts posed, or likely to be posed by pest animals through a range of best practice management methods.

The biosecurity risks and impacts posed or likely to be posed by priority pest animal species are generally regulated under Part 3 of the Biosecurity Act, using the general biosecurity duty. A wide range of community members have a general biosecurity duty for the management of the biosecurity risks and impacts associated with priority pest animals.

General control and management of pest animals as outlined in the LLSs Regional Strategic Pest Animal Management Plans can be considered as mechanisms for individuals to discharge their general biosecurity duty.

The general biosecurity duty will be supported by mandatory measures. Mandatory measures are specific requirements prescribed in the Regulation.
If there is a failure to discharge the general biosecurity duty in relation to a pest animal, the issue should be taken up with the land owner or manager with a view towards education and capacity building.

Ongoing non-compliance can be dealt with through the use of an individual biosecurity direction to take specified actions or a general biosecurity direction, where there are multiple properties or actions required in a specified area. Landholders may also offer a biosecurity undertaking to take specified actions to rectify the failure to discharge their general biosecurity duty. See Appendix C for more information regarding compliance processes.


Some relevant sections of the Biosecurity Act are summarised in Table 4 below. This summary is not intended to replace or interpret the Biosecurity Act it is intended only to give a broad overview of key principles and purposes and functions for powers provided for authorised officer.
Table 3. Summary of relevant sections of the *Biosecurity Act 2015* with regard to pest animal control. Part 2 – Interpretation, key concept and principles

<table>
<thead>
<tr>
<th>Section</th>
<th>What it does</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Section 10</strong>&lt;br&gt;Biosecurity matter</td>
<td>Biosecurity matter means:&lt;br&gt;(a) any living thing, other than a human, or&lt;br&gt;(b) any part of an animal, plant or living thing, other than a human, or&lt;br&gt;(c) a product of a living thing, other than a human, or&lt;br&gt;(d) a disease, or&lt;br&gt;(e) a prion, or&lt;br&gt;(f) a contaminant, or&lt;br&gt;(g) a disease agent that can cause disease in a living thing (other than a human) or that can cause disease in a human via transmission from a non-human host to a human, or&lt;br&gt;(h) any thing declared by the regulations to be biosecurity matter.</td>
</tr>
<tr>
<td><strong>Section 11</strong>&lt;br&gt;Carriers</td>
<td>A carrier means any thing (whether alive, dead or inanimate, and including a human) that has, or is capable of having, any biosecurity matter on it, attached to it or contained in it.</td>
</tr>
<tr>
<td><strong>Section 12</strong>&lt;br&gt;Dealings</td>
<td>(1) Deal with biosecurity matter or a carrier, or engage in a dealing with biosecurity matter or a carrier, includes any of the following:&lt;br&gt;(a) keep biosecurity matter or a carrier,&lt;br&gt;(b) have possession, care, custody or control of biosecurity matter or a carrier,&lt;br&gt;(c) produce, manufacture or supply biosecurity matter or a carrier,&lt;br&gt;(d) import biosecurity matter or a carrier into the State,&lt;br&gt;(e) acquire biosecurity matter or a carrier,&lt;br&gt;(f) buy, sell or dispose of biosecurity matter or a carrier, (g) move biosecurity matter or a carrier,&lt;br&gt;(h) release biosecurity matter or a carrier from captivity,&lt;br&gt;(i) use or treat biosecurity matter or a carrier for any purpose,&lt;br&gt;(j) breed, propagate, grow, raise, feed or culture biosecurity matter or a carrier,&lt;br&gt;(k) experiment with biosecurity matter or a carrier,&lt;br&gt;(l) display biosecurity matter or a carrier,&lt;br&gt;(m) enter into an agreement or other arrangement under which another person deals with biosecurity matter or a carrier,&lt;br&gt;(n) agree to deal with biosecurity matter or a carrier,&lt;br&gt;(o) cause or permit a dealing in biosecurity matter or a carrier to occur,&lt;br&gt;(p) anything prescribed by the regulations as a dealing with, or engaging in a dealing with, biosecurity matter or a carrier.&lt;br&gt;&lt;br&gt;(2) An occupier of land is taken to have possession of any biosecurity matter or carrier on that land unless the occupier establishes that the biosecurity matter or carrier was in the possession, care, custody or control of another person.&lt;br&gt;&lt;br&gt;(3) The regulations may specify circumstances in which a person is taken not to be dealing with or engaging in a dealing with biosecurity matter or a carrier for the purposes of this Act or any provision of this Act.</td>
</tr>
<tr>
<td><strong>Part 3 General Biosecurity duty</strong></td>
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</tbody>
</table>
### Section 23
**Offences of failing to discharge biosecurity duty**

1. A person who fails to discharge the person’s biosecurity duty under this Part is guilty of an offence.
2. An offence against this section is a category 1 offence if:
   - (a) the failure is intentional or reckless, and
   - (b) the failure caused, or was likely to cause, a significant biosecurity impact.
3. In any other case, the offence is a category 2 offence.
4. An offence against this section is an executive liability offence.
5. A person who is guilty of a category 1 offence or category 2 offence against this section because the person fails to discharge the person’s biosecurity duty under this Part:
   - (a) continues, until the duty is discharged, to be required to discharge that duty, and
   - (b) is guilty of a continuing offence (of the same category) for each day the failure continues.

### Section 24
1. The regulations may require persons who deal with biosecurity matter or carriers to take specified actions to prevent, eliminate or minimise a biosecurity risk posed or likely to be posed by the biosecurity matter, carrier or dealing. Those requirements are mandatory measures.
2. The mandatory measures may apply in relation to all or any specified class of persons, dealings, biosecurity matter or carriers.
3. A person who deals with biosecurity matter or a carrier and who contravenes any mandatory measures that are applicable to the biosecurity matter, carrier or dealing is taken to have failed to ensure that, so far as is reasonably practicable, the biosecurity risk posed or likely to be posed by the biosecurity matter, carrier or dealing is prevented, eliminated or minimised.

Note. Accordingly, the person could be charged with an offence under section 23 in respect of that failure.
4. The mandatory measures may be specified to be minimum mandatory measures, in which case compliance with those measures does not, of itself, demonstrate that a person ensured that, so far as is reasonably practicable, the biosecurity risk posed or likely to be posed by the biosecurity matter, carrier or dealing was prevented, eliminated or minimised.
5. In this section, actions include:
   - (a) refraining from doing a thing, and
   - (b) adopting any procedures or programs.

### Section 25
**Offence of failure to comply with mandatory measures**

1. A person who deals with biosecurity matter or a carrier in contravention of any mandatory measures that apply to that biosecurity matter, carrier or dealing is guilty of an offence.
2. An offence against this section is a category 2 offence.
3. An offence against this section is an executive liability offence.
4. A person who is guilty of an offence against this section because of a contravention of any mandatory measures:
   - (a) continues, until the mandatory measures are complied with and despite the fact that any specified period or time for compliance has expired or passed, to be required to comply with the mandatory measures, and
   - (b) is guilty of a continuing offence for each day the contravention continues.
5. A person cannot be found guilty of both an offence against section 23 and an offence against this section in respect of the same conduct.
6. In proceedings for an offence against section 23 in which it is alleged the person charged with the offence contravened any mandatory measures, if the court is not satisfied that the offence is proven, but is satisfied that the person committed an offence against this section, the court may find the person guilty of an offence against this section. The person is liable to punishment accordingly.

### Part 8 – Powers of authorised officers

<table>
<thead>
<tr>
<th>Section</th>
<th>What it does</th>
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</table>

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75 NSW Department of Primary Industries, March 2019 APPENDIX B
Section 89
Purposes for which function under Part may be exercised

(1) An authorised officer may exercise the functions conferred by this Part for any of the following purposes:

(a) for the purpose of investigating, monitoring and enforcing compliance with the requirements imposed by or under this Act,

(b) for the purpose of obtaining information or records for purposes connected with the administration of this Act,

(c) if the authorised officer is a biosecurity auditor, for the purpose of exercising functions in connection with a biosecurity audit,

(d) for the purpose of assisting a biosecurity auditor to exercise the biosecurity auditor’s functions in connection with a biosecurity audit,

(e) for the purpose of preventing, eliminating, minimising or managing biosecurity risks or suspected biosecurity risks,

(f) for the purpose of preventing, managing or controlling a biosecurity impact,

(g) for the purpose of enforcing, administering or executing this Act (including any instrument made under this Act).

(2) In this Part, a reference to an authorised purpose is a reference to any purpose referred to in subsection (1).

Firearms Act 1996

The Firearms Act 1996 prescribes the licencing and use of firearms in NSW. This legislation sets out who can be issued a firearms licence and licence categories. The firearms Act also prescribes the acquisition, storage and disposal of firearms. Persons employed in the pest control field should be aware that additional firearm use requirements and policies may be required by your employer.

For more information go to https://www.police.nsw.gov.au/services/firearms/legislation

Game and Feral Animal Control Act 2002

Game and feral animal hunting in NSW is subject to regulations to ensure the safety of all users of public land. The conditions which apply to legal hunting in NSW are set out in the Game and Feral Animal Control Act 2002 and associated Regulation.

The DPI Game Licensing Unit is responsible for administering and managing compliance under the legislation.

Additional requirements apply depending on whether you are hunting on public land or hunting on private land.

The objects of the Game and Feral Animal Control Act 2002 are:

(a) to provide for the effective management of introduced species of game animals, and

(b) to promote responsible and orderly hunting of those game animals on public and private land and of certain pest animals on public land.

The relevant sections of the Game and Feral Animal Control Act 2002 are summarised below. This summary is not intended to replace or interpret the Game and Feral Animal Control Act 2002. It is intended only to give a broad overview of the areas of the Act that relate to vertebrate pests and their management.

<table>
<thead>
<tr>
<th>Section</th>
<th>What it does</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Part 1 – Preliminary</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Section 5</strong>&lt;br&gt;Game animals for the purposes of this Act</td>
<td>(1) For the purposes of this Act, a <strong>game animal</strong> is any animal specified in Schedule 3 that is living in the wild. &lt;br&gt;(2) The Minister may, by order published on the NSW legislation website, amend Schedule 3: &lt;br&gt;a. by adding the name or description of any animal (other than an animal of a species that was native to Australia before European settlement), or &lt;br&gt;b. by omitting or amending any such name or description. &lt;br&gt;1. Despite any other provision of this section, a game animal does not include any animal that is or is part of a threatened species, population or ecological community within the meaning of the <strong>Threatened Species Conservation Act 1995</strong>.</td>
</tr>
<tr>
<td><strong>Schedule 3 Game animals,</strong>&lt;br&gt;<strong>Part 1 Non-indigenous game animals (licence required to hunt on public or private land)</strong>&lt;br&gt;Birds</td>
<td>Bobwhite Quail (<strong>Colinus virginianus</strong>) &lt;br&gt;California Quail (<strong>Lophortyx callipepla californicus</strong>) &lt;br&gt;Guinea Fowl (<strong>Numida meleagris</strong>) &lt;br&gt;Partridge (<strong>Alectors alectoris chukar</strong>) &lt;br&gt;Peafowl (<strong>Pavo cristatus</strong>) &lt;br&gt;Pheasant (<strong>Phasianus colchicus</strong>) &lt;br&gt;Spotted Dove (<strong>Streptopelia chinensis</strong>) &lt;br&gt;Turkey (<strong>Meleagris gallopavo</strong>)</td>
</tr>
<tr>
<td><strong>Other animals</strong>&lt;br&gt;Deer (Family <strong>cervidae</strong>)</td>
<td></td>
</tr>
<tr>
<td><strong>Part 2 Non-indigenous animals (licence required to hunt on public land only)</strong>&lt;br&gt;Note: A game hunting licence is <strong>not</strong> required for hunting the animals listed in this Part on private land, and accordingly is only required if the animals are living in the wild on public land-see section 17</td>
<td>Cat &lt;br&gt;Dog (other than dingo) &lt;br&gt;Goat &lt;br&gt;Fox &lt;br&gt;Hare &lt;br&gt;Rabbit &lt;br&gt;Pig &lt;br&gt;Common Starling (<strong>Sturnus vulgaris</strong>) &lt;br&gt;Common or Indian Myna (<strong>Acridotheres tristis</strong>) &lt;br&gt;Feral Pigeon (<strong>Columba livia</strong>)</td>
</tr>
<tr>
<td><strong>Section 9</strong>&lt;br&gt;Functions of Game and Pest Management Advisory Board</td>
<td>(1) The Advisory Board has the following functions: &lt;br&gt;(a) to represent the interests of licensed game hunters in matters arising under this Act, &lt;br&gt;(b) to provide advice on request to the Minister or the Regulatory Authority on game and feral animal control, &lt;br&gt;(c) to provide advice on request to the Minister on priorities for expenditure on research from the Game and Pest Management Trust Fund, &lt;br&gt;(d) to provide advice to the Minister or the Regulatory Authority on educational courses relating to game hunting. &lt;br&gt;(2) The Advisory Board is subject to the control and direction of the Minister (except in relation to the contents of any advice of the Advisory Board). &lt;br&gt;(3) The Advisory Board is to provide the Minister with an annual report of its activities during the year.</td>
</tr>
</tbody>
</table>
### Part 3 – Licensing and control of hunting for game animals

**Division 1 – Preliminary**

<table>
<thead>
<tr>
<th>Section</th>
<th>What it does</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Section 14</strong>&lt;br&gt;Classes of game hunting licences</td>
<td>The following classes of game hunting licences may be granted under this Act:&lt;br&gt;(a) general game hunting licences,&lt;br&gt;(b) restricted game hunting licences.</td>
</tr>
</tbody>
</table>

| Section 15<br>Authority conferred by different classes of game hunting licences | (1) **General licence**<br>A general game hunting licence authorises, subject to this Act, the holder of the licence to hunt game animals on any private land.<br>(a) to hunt game animals (other than native game birds) on private land, and<br>(b) to kill (and for that purpose hunt) native game birds on private land if permitted to do so under the authority of a native game bird management licence.<br>Note. Part 3A provides for the grant, for sustainable agricultural management purposes only, of a native game bird management licence to the owner or occupier of private land under which native game birds may be killed by the holders of general or restricted game hunting licences in accordance with set annual quotas.<br>(2) **Restricted licence**<br>A restricted game hunting licence authorises, subject to this Act, the holder of the licence to hunt game animals on public land as well as any private land.<br>(a) to hunt game animals (other than native game birds) on public land as well as private land, and<br>(b) to kill (and for that purpose hunt) native game birds on private land if permitted to do so under the authority of a native game bird management licence.<br>Note: In the case of hunting on public land, section 18 provides that a game hunting licence does not authorise hunting unless the land is duly declared under section 20 to be available for hunting. Such a declaration may require hunters to register and obtain written permission to hunt on that land.<br>(2A) **Possession of carcass or skin or other part of game animal**<br>A game hunting licence authorises the holder of the licence to possess the carcass, or the skin or any other part, of any game animal that the licence holder has killed under the authority conferred by the licence.<br>(3) **Entry into land**<br>A game hunting licence does not authorise the holder of the licence to enter any land that the holder is not otherwise authorised to enter.<br>(4) **Other statutory prohibitions**<br>Except as provided by section 6A (1), a game hunting licence does not authorise the holder of the licence to contravene any prohibition or restriction imposed by or under any Act or statutory instrument. |

<table>
<thead>
<tr>
<th><strong>Division 2 – Licensing of hunters of game animals</strong></th>
<th>What it does</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Section 16</strong>&lt;br&gt;Licence required to hunt game animals</td>
<td>(1) A person who hunts a game animal on any private land or public land is guilty of an offence unless the person is the holder of a game hunting licence.&lt;br&gt;(2) This section is subject to the other provisions of this Part.</td>
</tr>
</tbody>
</table>
### Section 17
Exemptions from requirement for game hunting licence

1) A game hunting licence is not required under this Division in respect of the following:
   - (a) a person who is hunting an animal listed in Part 2 of Schedule 3 on private land,
   - (b) a person who is hunting on any land owned or occupied by the person or by a member of the person’s household,
   - (b1) a person who is hunting on any land owned or occupied by the person’s employer or by a corporation of which the person is an officer, (but not if the person is hunting native game birds),
   - (c) an Aboriginal person:
     - (i) who is hunting a game animal pursuant to a native title right or interest that is the subject of an approved determination of native title or of a registered native title claim, or
     - (ii) who is a member, or in the company of a member, of a Local Aboriginal Land Council and who is undertaking traditional cultural hunting within the area of the Council,
   - (d) a person who is hunting animals listed in Part 2 of Schedule 3 in accordance with a duty imposed on the person (or on any corporation of which the person is an officer or employee) under Local Land Services Act 2013 or the Wild Dog Destruction Act 1921 to suppress and destroy the animals (other than a person assisting any such person in the performance of that duty),
   - (d1) a person who is hunting deer in accordance with a duty imposed on the person or the person’s employer (or on any corporation of which the person is an officer) because of a deer control order or compliance direction under the Deer Act 2006,
   - (e) (Repealed)
   - (f) a person employed by any public or local authority (including a member of staff of Local Land Services) who is acting in the execution of his or her duties as such an employee,
   - (f1) a person who is harming native game birds on any land in accordance with a licence under the National Parks and Wildlife Act 1974,

**Note.** That Act provides for the issue of licences to harm native animals for purposes other than sustainable agricultural management purposes.
   - (a) a veterinary practitioner (within the meaning of the Veterinary Practice Act 2003) or other person who is acting for the purposes of killing or treating an animal in distress due to injury or illness,
   - (b) a person of a class, or hunting in the circumstances, prescribed by the regulations.

2) A person who is not required to hold a game hunting licence because of this section is not prevented from applying for and being granted a licence in accordance with this Act.

### Division 3 – Control of hunting for game animals on public lands (restricted game hunting licences)

<table>
<thead>
<tr>
<th>Section</th>
<th>What it does</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Section 18</strong></td>
<td><strong>Hunting of game animals on public land</strong></td>
</tr>
<tr>
<td></td>
<td>A person who hunts a game animal on any public land and who is required by Division 2 to hold a game hunting licence to do so is guilty of an offence unless:</td>
</tr>
<tr>
<td></td>
<td>(a) a declaration is in force under this Division that permits the person to hunt that game animal on that land at that time, and</td>
</tr>
<tr>
<td></td>
<td>(b) the person is the holder of a restricted game hunting licence.</td>
</tr>
<tr>
<td><strong>Section 19</strong></td>
<td><strong>Special qualifications for restricted game hunting licence</strong></td>
</tr>
<tr>
<td>(1)</td>
<td>A person is not entitled to be granted a restricted game hunting licence unless:</td>
</tr>
<tr>
<td></td>
<td>(a) the person is a member of a hunting club, or organisation, approved by the Regulatory Authority, and</td>
</tr>
<tr>
<td></td>
<td>(b) the person satisfies the Regulatory Authority that he or she has undertaken adequate training for the activities authorised by the licence.</td>
</tr>
<tr>
<td>(1)</td>
<td>In this section, <em>adequate training</em> includes training of a kind prescribed by the regulations.</td>
</tr>
</tbody>
</table>
### Section 20
#### Declaration of public lands available for hunting game

2. For the purposes of this section, the responsible Minister for public lands is the Minister who has the care or control of the land or who is responsible for the authority that has the care or control of the land.

3. The responsible Minister for public land may make a declaration in accordance with this section that game animals on that land may be hunted by persons duly licensed under this Act.

4. The responsible Minister must, before making a declaration, give public notice of the proposed declaration in accordance with the regulations.

5. The responsible Minister is, before making a declaration, to have regard to:
   - (a) the impact of the declaration on public safety, and
   - (b) the rights of others using the land, and
   - (c) any plan of management or other policy document relating to the use or management of the land, and
   - (d) any recommendation of the authority that has care or control of the land, and
   - (e) any recommendation of the Regulatory Authority.

6. A declaration may be limited to particular parts of the land, to particular game animals, to particular times or to other particular circumstances.

7. A declaration may require a person who hunts game animals in the land concerned:
   - (a) to register with a specified person or body before hunting on the land, and
   - (b) to comply with any exclusion or other notice issued or erected by the authority that has the care or control of the land, and
   - (c) to comply with such other requirements as are specified in the declaration.

   A person is not permitted by the declaration to hunt game animals unless any such requirements are complied with.

8. The responsible Minister is to give a copy of any declaration to the Regulatory Authority and is to cause the declaration to be made public in such manner as the Minister thinks fit.

9. A declaration remains in force for the period specified in the declaration unless it is sooner revoked by the responsible Minister.

10. The responsible Minister may delegate to any authority or other person any function of the Minister under this section.

11. A declaration does not confer authority for anything that is inconsistent with the requirements of any other Act or law.

12. The Minister may vary or revoke a declaration under this section.

### Part 5 – Miscellaneous

<table>
<thead>
<tr>
<th>Section</th>
<th>What it does</th>
</tr>
</thead>
<tbody>
<tr>
<td>Section 55</td>
<td>A person must not release a game animal into the wild for the purpose of hunting the animal or its descendants.</td>
</tr>
</tbody>
</table>
National Parks and Wildlife Act 1974

All native birds, reptiles, amphibians and mammals, except the dingo are protected in NSW under the National Parks and Wildlife Act 1974 (NPW Act) and the National Parks and Wildlife Regulations 2009. Once a particular plant or animal is listed as a threatened, vulnerable or endangered species they are afforded additional protection under the Threatened Species Act 1995. The agency responsible for the protection of native animals and plants in NSW is NPWS.

Some native birds are not protected in certain parts of NSW because they are either agricultural or pastoral pests:

- Sulphur-crested cockatoos and galahs have been declared ‘locally unprotected’ west of the Great Dividing Range in the Central and Western divisions of the state, because of the damage they do to grain crops
- Crows and ravens (Corvids) are protected in the counties of Camden (Illawarra region), Cumberland (Sydney basin) and Northumberland (Hunter region)
- The purple swamp hen is not protected in 10 irrigation districts and areas in the Riverina region, where the species causes considerable damage to irrigated crops such as rice.
- The dingo is regarded as a wild dog under the LLS Act. Wild dogs are declared ‘pest animals’ under that legislation.

Table 5. Summary of relevant sections of the National Parks and Wildlife Act 1974 with regards to pest control.

<table>
<thead>
<tr>
<th>Section 109</th>
<th>Unlawful liberation of animals</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) A person shall not liberate, anywhere in New South Wales, any animal (other than a homing pigeon or a captured animal which is native to New South Wales) unless under and in accordance with a licence under section 127.</td>
<td></td>
</tr>
<tr>
<td>(2) A person shall not liberate, elsewhere than in the locality of capture, any captured animal which is native to New South Wales unless under and in accordance with a licence under section 127</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Section 111</th>
<th>Method of shooting fauna</th>
</tr>
</thead>
<tbody>
<tr>
<td>A person shall not, for the purpose of harming any protected fauna, use any firearm of a kind other than the kind habitually raised at arm’s length and fired from the shoulder without other support</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Section 120</th>
<th>General licence</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) The Chief Executive may issue a licence (in this Act referred to as a general licence), authorising a person to do any or all of the following:</td>
<td></td>
</tr>
<tr>
<td>(a) to harm or obtain any protected fauna for any specified purpose,</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Section 121</th>
<th>Occupier’s licence</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) The Chief Executive may issue a licence (in this Act referred to as an occupier’s licence), authorising an owner or occupier of specified lands:</td>
<td></td>
</tr>
<tr>
<td>(a) to harm, or</td>
<td></td>
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<tr>
<td>(b) to permit a person, holding a general licence issued to the person under section 120 or a commercial fauna harvester’s licence issued to the person under section 123, to harm, a specified number of fauna of a specified class found on those lands and the licence may authorise the disposal, whether by sale or otherwise, of fauna harmed under the authority of the licence.</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Section 156B</th>
<th>Powers of authorised officers</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) The Chief Executive may appoint any person (including a class of persons) to be an authorised officer for the purposes of national parks legislation. Such an appointment is to be made under Chapter 7 of the Protection of the Environment Operations Act 1997 (the POEO Act) as applied under this section.</td>
<td></td>
</tr>
<tr>
<td>(2) An authorised officer has and may exercise the functions of an authorised officer under Chapter 7 (except Part 7.6) of the POEO Act for the following purposes:</td>
<td></td>
</tr>
<tr>
<td>(a) for determining whether there has been compliance with or a contravention of national parks legislation,</td>
<td></td>
</tr>
</tbody>
</table>
Non-native (unprotected) animals

Non-native animals, called ‘unprotected fauna’ under the NPW Act, might have legal protection under other legislation, such as:

- *Prevention of Cruelty to Animals Act 1979*
- *Companion Animals Act 1998*
- *Non-Indigenous Animals Act 1987*
- *Exhibited Animals Protection Act 1986*
- *Game and Feral Animal Control Act 2002.*

How are native animals protected?

The NPW Act contains a range of offences protecting native animals, and also a broad range of defences or lawful justifications:

- It is an offence to harm protected fauna. This includes harm by using a substance such as poison, an animal such as hunting dog, a gun, net or trap.
- It is an offence to buy, sell or possess protected fauna although sometimes licences are available to do this.
- A person who is rescuing an injured animal will not commit an offence so long as they notify the Chief Executive in writing within 7 days that they have the animal. They are not allowed to keep the animal as a pet.
A person shall not liberate, anywhere in NSW, any animal, other than a homing pigeon or a captured animal that is native to NSW, unless under and in accordance with a licence under Section 127 of the Act.

**Prevention of Cruelty to Animal Act 1979**

The *Prevention of Cruelty to Animals Act 1979* (Prevention of Cruelty to Animals Act) and its associated regulation legislate acceptable standards for animal welfare. The objectives of the Act, as described in Section 3, are:

(a) to prevent cruelty to animals; and
(b) to promote the welfare of animals by requiring a person in charge of an animal:
   (i) to provide care for the animal, and
   (ii) to treat the animal in a humane manner, and
   (iii) to ensure the welfare of the animal.

The relevant sections of the Prevention of Cruelty to Animals Act are summarised below. This summary is not intended to replace or interpret the Prevention of Cruelty to Animals Act. It is intended only to give a broad overview of the areas of the Act that relate to vertebrate pests.
Table 6. Summary of relevant sections of the Prevention to Cruelty of Animals Act with regards to pest control

<table>
<thead>
<tr>
<th>Part 2 – Offences</th>
<th>What it does</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Section 5</strong> Cruelty to animals</td>
<td>(1) A person shall not commit an act of cruelty upon an animal.</td>
</tr>
<tr>
<td></td>
<td>(2) A person in charge of an animal shall not authorise the commission of an act of cruelty upon the animal.</td>
</tr>
<tr>
<td></td>
<td>(3) A person in charge of an animal shall not fail at any time:</td>
</tr>
<tr>
<td></td>
<td>(a) to exercise reasonable care, control or supervision of an animal to prevent the commission of an act of cruelty upon the animal,</td>
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<tr>
<td></td>
<td>(b) where pain is being inflicted upon the animal, to take such reasonable steps as are necessary to alleviate the pain, or</td>
</tr>
<tr>
<td></td>
<td>(c) where it is necessary for the animal to be provided with veterinary treatment, whether or not over a period of time, to provide it with that treatment.</td>
</tr>
<tr>
<td><strong>Section 7</strong> Carriage and conveyance of animals</td>
<td>(1) A person shall not:</td>
</tr>
<tr>
<td></td>
<td>(a) carry or convey an animal, or</td>
</tr>
<tr>
<td></td>
<td>(b) where the person is a person in charge of an animal – authorise the carriage or conveyance of the animal, in a manner which unreasonably, unnecessarily or unjustifiably inflicts pain upon the animal.</td>
</tr>
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<td></td>
<td>(2) Without limiting the generality of subsection (1), a person must not:</td>
</tr>
<tr>
<td></td>
<td>(a) Carry or convey a horse on a multi-deck vehicle, or</td>
</tr>
<tr>
<td></td>
<td>(b) where the person is a person in charge of the horse—authorise the carriage or conveyance of a horse on a multi-deck vehicle.</td>
</tr>
<tr>
<td></td>
<td>(2A) Without limiting subsection (1), a person must not carry or convey a dog (other than a dog being used to work livestock), on the open back of a moving vehicle on a public street unless the dog is restrained or enclosed in such a way as to prevent the dog falling from the vehicle.</td>
</tr>
<tr>
<td></td>
<td>(3) In this section:</td>
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<td></td>
<td><strong>multi-deck vehicle</strong> means a motor vehicle or a trailer drawn by a motor vehicle that:</td>
</tr>
<tr>
<td></td>
<td>(a) is used to carry or convey animals, and</td>
</tr>
<tr>
<td></td>
<td>(b) on which animals are carried or conveyed in two or more layered sections.</td>
</tr>
<tr>
<td><strong>Section 8</strong> Animals to be provided with food, drink or shelter</td>
<td>(1) A person in charge of an animal shall not fail to provide the animal with food, drink or shelter, or any of them, which, in each case, is proper and sufficient and which it is reasonably practicable in the circumstances for the person to provide.</td>
</tr>
<tr>
<td></td>
<td>(2) In any proceedings for an offence against subsection (1), evidence that an animal was not provided with clean water during a period of 24 hours is evidence that the person accused of the offence has failed to provide the animal with proper and sufficient drink during that period.</td>
</tr>
<tr>
<td></td>
<td>(3) In any proceedings for an offence against subsection (1), evidence that an animal was not provided with food or shelter during a period of 24 hours (or, in the case of an animal of a class prescribed by the regulations, during the period prescribed for that class of animal) is evidence that the person accused of the offence has failed to provide the animal with proper and sufficient food or shelter during that period.</td>
</tr>
<tr>
<td></td>
<td>(4) Before commencing proceedings for an offence against subsection (1) in respect of a stock animal depastured on rateable land (within the meaning of the Local Land Services Act 2013), the prosecution must obtain advice from Local Land Services and the Department about the state of the animal (if practicable) and the appropriate care for it.</td>
</tr>
<tr>
<td></td>
<td>(5) The prosecution may, with leave of the court granted in such circumstances as the court considers just, commence or continue proceedings for an offence against subsection (1), despite having failed to comply with subsection (4).</td>
</tr>
<tr>
<td><strong>Section 10</strong> Tethering of animals</td>
<td>(1) A person shall not:</td>
</tr>
<tr>
<td></td>
<td>(a) tether an animal, or</td>
</tr>
<tr>
<td></td>
<td>(b) where the person is a person in charge of an animal – authorise the tethering of the animal, for an unreasonable length of time or by means of an unreasonably heavy, or unreasonably short, tether.</td>
</tr>
<tr>
<td></td>
<td>(2) A person must not tether a sow in a piggery.</td>
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<tr>
<td></td>
<td>(3) A person must not confine a bird by means of a tether.</td>
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</tbody>
</table>
| | (4) It is a defence to a prosecution for an offence against subsection (3) if the defendant satisfies the court that the bird to which the offence relates was a
### Part 2 – Offences

<table>
<thead>
<tr>
<th>Section</th>
<th>What it does</th>
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<tbody>
<tr>
<td><strong>raptor and that the tether involved was a jess that was used solely to tether the bird to its handler.</strong></td>
<td></td>
</tr>
</tbody>
</table>

**Section 15**

**Poisons not to be administered to animals**

<table>
<thead>
<tr>
<th>(1) In this section, poison includes:</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) a substance included in the list, as in force for the time being, proclaimed under section 8 of the <em>Poisons and Therapeutic Goods Act 1966</em> (or a substance that includes such a substance), or</td>
</tr>
<tr>
<td>(b) a substance containing glass or any other thing likely to kill or injure an animal.</td>
</tr>
<tr>
<td>(2) A person shall not:</td>
</tr>
<tr>
<td>(a) administer a poison, or a substance containing a poison, to a domestic animal,</td>
</tr>
<tr>
<td>(b) with the intention of destroying or injuring a domestic animal, throw, cast, drop, leave or lay a poison, or a substance containing a poison, in any place, or</td>
</tr>
<tr>
<td>(c) have in his or her possession a poison with the intention of using it to kill or injure a domestic animal.</td>
</tr>
</tbody>
</table>

**Section 19**

**Trap-shooting prohibited**

A person shall not advertise, promote or take part in a match, competition or other activity in which an animal is released from confinement for the purpose of that person, or any other person, shooting at it.

**Section 20**

**Certain animal-catching activities prohibited**

A person shall not advertise, promote or take part in a match, competition or other activity in which an animal is released from confinement for the purpose of that person, or any other person, chasing, catching or confining it.

**Section 21**

**Coursing and other similar activities prohibited**

<table>
<thead>
<tr>
<th>(1) A person who:</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) causes, procures, permits or encourages an activity in which an animal is released from confinement for the purpose of its being chased, caught or confined by a dog, or</td>
</tr>
<tr>
<td>(b) advertises the intention to conduct such an activity, or</td>
</tr>
<tr>
<td>(c) promotes, organises or attends such an activity, or</td>
</tr>
<tr>
<td>(d) uses an animal as a lure or kill for the purpose of blooding greyhounds or in connection with the trialing, training or racing of any coursing dog, or</td>
</tr>
<tr>
<td>(e) keeps or is in charge of an animal for use as a lure or kill for the purpose of blooding greyhounds or in connection with the trialing, training or racing of any coursing dog, is guilty of an offence.</td>
</tr>
</tbody>
</table>

**Section 22**

**Severely injured animals not to be sold**

| (1) Subject to subsection (2), a person shall not purchase, acquire, keep or sell, or offer or expose for sale, an animal which is so severely injured, so diseased or in such a condition that it is cruel to keep it alive. |

**Section 23**

**Certain traps not to be set**

| (1) A person shall not, in a prescribed part of New South Wales, set a trap of a prescribed type. |
| (2) A person must not: |
| (a) in any part of New South Wales, set a steel-jawed trap, or |
| (b) possess a steel-jawed trap with the intention of using it to trap an animal. |
| (3) In this section |
| A steel-jawed trap means a trap that has jaws that are made of steel, iron or other metal and that are designed to spring together and trap an animal when a leg or other part of the animal’s body comes into contact with, or is placed between, the jaws, but does not include a soft-jawed trap (that is, a trap with steel jaws that are offset and padded). |

For the purposes of the *Prevention of Cruelty to Animals Act*, ‘animal’ includes vertebrate pests.

The overriding concern for vertebrate pest managers under the Prevention of Cruelty to Animals Act is that risk assessments and due diligence should include provision to avoid unnecessary suffering of vertebrate pest animals during control activities.
Exemptions

There are a number of practices that are exempt from the Prevention of Cruelty to Animals Act. Exempt activities include hunting, shooting, snaring, trapping, catching or capturing the animal, where the activity is undertaken ‘in a manner that inflicted no unnecessary pain on the animal’.

Use of certain types of traps

The Prevention of Cruelty to Animals Act prohibits the use or setting of steel-jawed traps in any part of NSW. Steel-jawed traps are defined as any trap that has jaws that are made of steel, iron or other metal and that are designed to spring together and trap an animal when a leg or other part of the animal’s body comes into contact with, or is placed between, the jaws.

However, soft-jawed traps, that is, traps with steel jaws that are offset and padded are permitted to be used, see Part 2, Section 23 of the Prevention of Cruelty to Animals Act.

Use of dogs for pest animal control

Dogs and other animals may be used when hunting, but only if their use is not in contravention to the Prevention of Cruelty to Animals Act; and their use is with the permission of the occupier of the land concerned.

All dogs being used to hunt must be microchipped and wear a collar which has a metal tag or label attached with the name, address and telephone number of the owner of the dog. They must not chase any other species of animal not being hunted.

When using dogs to hunt pigs on public land a person hunting alone may use up to three dogs and a group of hunters may use up to five dogs. Dogs must not be allowed to maul or kill pigs and hunters must take all necessary steps to ensure that their dogs do not inflict unnecessary pain on the pig.

When using dogs to hunt deer a person hunting alone may use one dog to hunt deer or a group may use up to two dogs to hunt deer. The dogs must only be used to locate, point or flush the deer, the dog must not chase the deer or any other species. If not on a lead the dog must be wearing a radio tracking collar.

Dogs must not be abandoned on any land.


The Protection of the Environment Operations Act 1997 (POEO Act) principally deals with the regulation of activities that have the potential to pollute or otherwise harm the NSW environment. The Act is administered by the EPA.

Under Chapter 7, of the POEO Act, EPA authorised officers have powers to search premises, demand names and addresses and record evidence.

In relation to pesticide use and the destruction of pest animals this Act may impose some liability in terms of the pollution of waters. ACOs should be aware of Section 120 of the Act which states:

Section 120 Prohibition of pollution of waters

(1) A person who pollutes any waters is guilty of an offence.

(2) In this section: pollute waters includes cause or permit any waters to be polluted.

Note: the pollution of waters includes, but is not limited to:

- placing any matter (whether solid, liquid or gaseous) in a position where:
  - (i) it falls, descends, is washed, is blown or percolates, or
  - (ii) it is likely to fall, descend, be washed, be blown or percolate, into any waters, onto the dry bed of any waters, or into any drain, channel or gutter used or designed to receive or pass rainwater, floodwater or any water that is not polluted, or
bullet placing any such matter on the dry bed of any waters, or in any drain, channel or gutter used or designed to receive or pass rainwater, floodwater or any water that is not polluted, if the matter would, had it been placed in any waters, have polluted or have been likely to pollute those waters.

The implications for persons using pesticides are that:

bullet any poisoned baits must be placed in such a way to not enter into waterways
bullet any pest animals destroyed in or near waterways must be moved so that the carcass poses no risk of entering a waterway

EPA guidelines for the disposal of animal carcasses state:

If the carcasses must be disposed of on-site, the following points should be considered. It is preferable to have:

bullet a burial area at least 100 m away from houses and watercourses
bullet the pit base at least 1 m above the level of the water table
bullet heavy soil of low permeability and good stability
bullet good access to the site for earthmoving machinery and stock transport unless the stock are to be walked in for slaughter.

Avoid:

bullet sites sloping towards watercourses
bullet areas that are likely to drain to watercourses or groundwater.

Note: that the disposal location and quantity of carcasses may trigger the requirement for a waste facility licence under Schedule 1 of the POEO Act except in the case of an emergency mass animal disposal program which would then trigger emergency provisions.

For further information about the disposal of animal carcasses visit


Weapons Prohibition Act 1998

This legislation regulates and approves for use specialised equipment and firearms for use in pest control programs that would otherwise be illegal. This includes high capacity self loading centrefire rifles used in aerial shooting programs and rifle silencers used in urban pest control.

For more information about prohibited weapons go to


Work Health and Safety Act 2011

As a result of a national review of work health and safety laws across the country, a model Work Health and Safety Act was developed and endorsed by the Workplace Relations Ministers’ Council in December 2009. Harmonisation in NSW has been achieved through the enactment of the Work Health and Safety Act 2011 (WHS Act). Essentially this means there is a national approach to State laws, and not a Commonwealth Act to replace State laws. Compliance with the WHS Act is enforced by WorkCover NSW.

The main object of the WHS Act is to provide for a balanced and nationally consistent framework to secure the health and safety of workers and workplaces by:

(a) protecting workers and other persons against harm to their health, safety and welfare through the elimination or minimisation of risks arising from work or from specified types of substances or plant, and

(b) providing for fair and effective workplace representation, consultation, co-operation and issue resolution in relation to work health and safety, and
(c) encouraging unions and employer organisations to take a constructive role in promoting improvements in work health and safety practices, and assisting persons conducting businesses or undertakings and workers to achieve a healthier and safer working environment, and

(d) promoting the provision of advice, information, education and training in relation to work health and safety, and

(e) securing compliance with this Act through effective and appropriate compliance and enforcement measures, and

(f) ensuring appropriate scrutiny and review of actions taken by persons exercising powers and performing functions under this Act, and

(g) providing a framework for continuous improvement and progressively higher standards of work health and safety, and

(h) maintaining and strengthening the national harmonisation of laws relating to work health and safety and to facilitate a consistent national approach to work health and safety in this jurisdiction.

Relevant chapters in the Work Health and Safety Regulation will need to be reviewed including and not limited to topics such as Chapter 3, General risk and workplace management, Chapter 4, Hazardous work and Chapter 7, Hazardous chemicals. Relevant codes of practice should also be reviewed to provide guidance to eliminate or control risks in vertebrate pest management. Workers must also be aware of the following items: Schedule 7 Safety data sheets, Schedule 9 Classification, packaging and labelling requirements, Schedule 11 Placard and manifest quantities, Schedule 12 Manifest requirements, Schedule 13 Placard requirements and Schedule 14 Requirements for health monitoring.
Appendix C – Management of priority pest animals under the Biosecurity Act 2015

LLS authorised officers play a key role in implementing the Biosecurity Act 2015 to manage the biosecurity risks of pest animals. An officer is authorised by the LLS after having satisfactorily completed the relevant training.

The Biosecurity – Management of priority pest animals procedure is being drafted and will be referenced as “Schedule xx Invasive Plants and Animals” as a part of the LLS/DPI Memorandum of Understanding (in development).

Components of the draft procedure in relation to regulating the management of priority pest animals are summarised in Figure 7 below.
Table 7. Key aspects for management of priority pest animals under the *Biosecurity Act 2015*

### Record and triage notification/report of a pest animal or biosecurity impact

**Record details, acknowledge receipt in FARMS.**

<table>
<thead>
<tr>
<th>Priority pest / biosecurity impact</th>
<th>Prohibited dealing / Matter</th>
</tr>
</thead>
</table>
| Priority pest animal or biosecurity impact report received, Acknowledge receipt of report, Record details of pest animal or biosecurity impact in FARMS or FeralScan, | Provide the following advisory material to land manager/relevant person:  
- RSPAMP.  
- LPAMP (if relevant)  
- Part 3 of the Biosecurity Act  
- Information on pest animal impacts, ecology, behaviour and best practice options for management  
Authorised officers must record the information that has been provided, explained, assessed etc. in FARMS or FeralScan. |
| Is the location of the pest animal or biosecurity impact within a relevant LPAMP area? Have best practice pest management activities been undertaken? Are the pest animal or biosecurity impacts being adequately prevented, eliminated or minimised through proactive/reactive management? Record information in FARMS or FeralScan | Report to NSW DPI |

### Property inspection

**Authorised officer inspects property to assess biosecurity impact, confirm any management action/s, collects evidence and completed records.**

Evidence of pest animal and/or biosecurity impact on land manager’s property, either:
- Accept a verbal agreement to implement pest animal control and record contemporaneous notes  
- Accept an Individual Biosecurity Undertaking to control pest animal or biosecurity impact  
- Issue an Individual Biosecurity Direction/ General Biosecurity Direction to control pest animal or biosecurity impact  
- Provide a date for re-inspection  
- Record in FARMS or FeralScan.

Evidence of pest animal and/or biosecurity impact on surrounding area:
- Issue a General Biosecurity Direction to control pest animal or biosecurity impact  
- Provide a date for re-inspection  
- Record in FARMS or FeralScan.

Monitor for additional pest animal notification/reports:
- Authorised officer should monitor for additional pest animal or biosecurity impact notification/reports made in relation to a property where one of the following is in force:  
  - Verbal agreement  
  - Biosecurity Undertaking  
  - Biosecurity Direction

### Re-inspection

Land manager or person **has** complied with verbal agreement, Biosecurity Undertaking or Biosecurity Direction.
- Consider revoking Biosecurity Undertaking/Direction.  
- Continue to monitor.

Land manager or person **has not** complied with verbal agreement, Biosecurity Undertaking or Biosecurity Direction.
- Consider varying the verbal agreement, Biosecurity Undertaking/Direction.  
- Consider moving from verbal agreement to Biosecurity Undertaking/Direction.  
- Provide written advice to inform the person of the variation.  
- Consider using a warning letter, penalty notice or prosecution.  
- Consider intervention.

### Intervention

If a person fails to comply with a Biosecurity Undertaking/Direction an authorised officer may enter the premises and take actions that are necessary to remedy the failure.
### Appendix D: Vertebrate pesticides used in NSW

Table 8. Vertebrate pesticides used in NSW. *Always check for current permits and orders*

<table>
<thead>
<tr>
<th>Pesticide Active</th>
<th>Authorisation to obtain, supply and use</th>
<th>Dangerous good</th>
<th>Registered Products</th>
<th>Target species</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium fluoroacetate '1080'</td>
<td>Restricted chemical product relevant APVMA permit* Pesticide Control Orders for Bait Products and Ejectors</td>
<td>Yes for liquid concentrate. No for prepared and ready-to-use baits</td>
<td>ACTA 1080 concentrate® PAKS 1080 concentrate® Pigout® Feral Pig Bait Doggone® Wild Dog Bait PAKS DE-K9® 1080 Wild Dog Bait Foxoff® Fox Bait PAKS DE-FOX® 1080 Fox bait Canid Pest Ejector 1080 Wild Dog capsules Canid Pest Ejector 1080 Fox Dog capsules Rabbait 1080 Oat Bait 1080 Ready-to-lay Rabbit Oat Bait</td>
<td>Wild dogs Feral pigs Wild Rabbits Foxes Goats* Deer*</td>
</tr>
<tr>
<td>Para-aminopropiophenone (PAPP)</td>
<td>Restricted chemical product. Pesticide Control order for PAPP</td>
<td>No</td>
<td>Foxecute Fox bait Dogabait PAPP Wild Dog Bait</td>
<td>Foxes Wild dogs</td>
</tr>
<tr>
<td>Pindone</td>
<td>Restricted chemical product for concentrate forms only Pesticide Control (Pindone Products) Order *.</td>
<td>No</td>
<td>ALDI Pindone 25 liquid concentrate® Rabbait Aqueous pindone concentrate® Pindone 25 Rabbit bait rodenticide® Rabbit® Pindone oat bait ALDI Bunnybait® oat bait for rabbits</td>
<td>Wild Rabbits</td>
</tr>
<tr>
<td>Rabbit haemorrhagic disease virus (RHDV)</td>
<td>Restricted chemical product Pesticide Control (Rabbit haemorrhagic disease Virus) Order 2006 APVMA permit number PER9305 (no expiry date)</td>
<td>No</td>
<td>Rabbit Haemorrhagic Disease Virus (Lyophilised) Rabbit Haemorrhagic Disease Virus (K5 variant Lyophilised)</td>
<td>Wild Rabbits</td>
</tr>
<tr>
<td>Phosphine</td>
<td>LLS and farmers are exempt from licensing requirements for this fumigant,</td>
<td>Yes</td>
<td>Pestex® Fumigation Tablets Quickphos Fumigation Tablets Celphide Fumigation Tablets Apparent Fate Fumigation Tablets Farmlinx Grainpro Fumigation Tablets</td>
<td>Wild Rabbits</td>
</tr>
<tr>
<td>Chloropicrin</td>
<td>LLS and farmers are exempt from licensing requirements for this fumigant when used in a pressure fumigater)</td>
<td>Yes</td>
<td>South Australian Rural Supplies Rural Larvacide Rabbit Fumigant</td>
<td>Wild Rabbits</td>
</tr>
<tr>
<td>Brodifacoum</td>
<td>Various APVMA permits for use on islands of NSW</td>
<td>No</td>
<td>As per Permit.</td>
<td>Wild Rabbits Rodents</td>
</tr>
<tr>
<td>Carbon monoxide</td>
<td>None allocated</td>
<td>Yes</td>
<td>DEN-CO-FUME® Carbon Monoxide Fumigant Cartridge</td>
<td>Foxes</td>
</tr>
<tr>
<td>Pesticide Active</td>
<td>Authorisation to obtain, supply and use</td>
<td>Dangerous good</td>
<td>Registered Products</td>
<td>Target species</td>
</tr>
<tr>
<td>------------------</td>
<td>----------------------------------------</td>
<td>----------------</td>
<td>---------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>Strychnine hydrochloride</td>
<td>APVMA permit number PER14732 (expires 30th June 2019)</td>
<td>Yes for concentrate.</td>
<td>Strychnine treated cloth</td>
<td>Wild dogs</td>
</tr>
<tr>
<td>Bromadiolone</td>
<td>None allocated An emergency permit may be issued to LLS in a plague situation (previous APVMA permit expired)</td>
<td>Yes for liquid concentrate.</td>
<td>Various registered products</td>
<td>Mice</td>
</tr>
<tr>
<td>Zinc phosphide</td>
<td>None allocated</td>
<td>No</td>
<td>Various registered products</td>
<td>Mice</td>
</tr>
<tr>
<td>Coumatetralyl Racumin 8®</td>
<td>APVMA permit number PER83329 (expires 30 September 2017)</td>
<td>No</td>
<td>LLS coumatetralyl rodent bait</td>
<td>Mice</td>
</tr>
</tbody>
</table>

* NPWS research only
Appendix E – Checklists for usage and supply records and bait preparation facilities

The lists that have been compiled on the following pages are a guideline to be used in any workplace.

General supply records

General checklist list for bait preparation

- Facility
- Field

National Parks and Wildlife Services checklists

- Issue of 1080 bait for a baiting program
- Manufactured bait and ejector capsule storage facility
- ACO 1080 storage and bait preparation facility
- Preparation of 1080 baits
- Usage and supply records
- Auditing
- Records
- Audit Summary

LLS pesticide compliance – audit procedure

- See Appendix J
General supply records

The following is a list of information that should be recorded when completing usage and supply records.

- Type of vertebrate pesticide register e.g. 1080 liquid concentrate or Foxoff.
- Date - month and year of record
- Agency or organisation’s name.
- ACO/s name/s.
- Carried forward balance.
- Usage and supply records to end users.
- Daily receipt (from), transfer (to) record and use for that month.
- Balance left in stock

The usage and supply records to end users

- Bait type such as red meat (wild dog) carrot (rabbit).
- Number or quantity (kg) of bait used.
- Name of person the bait was supplied to.
- Location of bait usage (property name).
- Type of vertebrate pesticide usage record e.g. 1080 liquid concentrate and month and year of record.

Comments:

Name: ............................................................................................................Date: ..................
General checklist list for bait preparation

Facility

The bait preparation area must meet the following conditions:

- Bunded or appropriately sloped impervious floor, drained for effective washing down into a dilution pit or septic system. The dilution pit or septic system, of at least 50 L capacity, must be accessible for sampling. All liquid waste must be able to be held for at least 1 hour if it enters a sewerage system unless approvals have been received from the relevant authority for liquid waste to flow directly into the sewerage system.
- Drain must be sealable and closed off at all times other than when the equipment or the area is being hosed down.
- Sealed floor that must be able to contain the total volume of concentrate in use if the entire contents were spilled.
- Drainage of waste, rinsate and wash down from each facility, whether into a septic or sewerage system, is regulated by local government. Contact the relevant council for the requirements for waste disposal systems.
- Labelled equipment used for measuring and handling pesticides must be securely stored in an area only accessible by an ACO. All equipment used for mixing 1080 bait and preparing ejector capsules must be clearly labelled ‘1080 Poison’ in large red lettering.
- Adequate space for bait cutting and mixing machines, packaging of baits and temporary storage of poisoned baits awaiting distribution.
- Tap with a hose for washing down the facility and equipment after bait has been prepared.
- Sink or hand basin.
- Absorbent material such as hydrated lime to soak up any major spillage.

Field

Vertebrate pesticide baits may be prepared in the field providing the following conditions are met:

- A risk assessment for in-field bait preparation must be carried out by the ACO, this will provide a guide for burial of rinsate and signage requirements.
- Only ACOs are permitted to handle 1080, RHDV and pindone concentrate.
- All PPE such as washable hat, overalls, gloves, respirator and plenty of water are taken to the site.
- The concentrate is transported in a sealed and locked metal or strong plastic box securely fixed to the vehicle, with Toxic 6 signage.
- All bait preparation and mixing should be done over on an impervious surface to ensure any spills, chaff or blood is contained for appropriate disposal.
- At the completion of bait preparation all equipment must be washed down before leaving the site. All rinsate must be drained into burial.
- The burial site must be clear of permanent and ephemeral waterways to avoid pollution.
- Alternatively, all rinsate may be collected into a hard plastic container labelled “poison” in large red lettering and transported to the bait preparation facility for disposal.

Name: .......................................................... Date: .....................
## National Parks and Wildlife Service checklists

*Note: Always check INSITE for most current version*

### Section one

<table>
<thead>
<tr>
<th>1080 end user audit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of property (park) that bait will be laid on:</td>
</tr>
</tbody>
</table>

| Y ☐ N ☐ | Is there a signed JSA for the program that includes storage and transport of the baits? |
| Y ☐ N ☐ | Is there a signed JSB for the program? |
| Y ☐ N ☐ | Is there a current NPWS ACO Risk Assessment for the program? (provide TRIM number) |
| Y ☐ N ☐ | Does the ACO Risk Assessment deal with the disposal of used and unused baits? |
| Y ☐ N ☐ | Was the ACO Risk Assessment supplied to the people laying the baits? |
| Y ☐ N ☐ | Has public notification been completed? (provide evidence) |
| Y ☐ N ☐ | Has the NPWS PUNP been followed? (explain) |

| Y ☐ N ☐ | Is the program in the regional RPMS? (name it) |
| Y ☐ N ☐ | Was the program a critical program? |
| Y ☐ N ☐ | Was there a work order? |
| Y ☐ N ☐ | Were the correct signs used (refer to PCO)? |
| Y ☐ N ☐ | Were signs correctly placed according to the PCO? |
| Y ☐ N ☐ | Is the baiting program an ongoing program? |

*NB: Ongoing programs require notification every 6 months*

How and when was notification given?

- Number of baits issued:
- Date of issue:
- Estimated date of bait program completion:
- Left over baits returned to an ACO within 1 month of completion of a program.
- Were there any leftover baits?
### 1080 end user audit

How were any leftover or issued baits disposed of?

**NB: More than 50 baits per property (park) require approval (email is sufficient) of an ACO.**

<table>
<thead>
<tr>
<th>Y</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>N</td>
</tr>
</tbody>
</table>

Persons picking up baits have current AQF3 Chemical accreditation (check indemnity form).

<table>
<thead>
<tr>
<th>Y</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>N</td>
</tr>
</tbody>
</table>

Have all sections of the indemnity form been filled out?

<table>
<thead>
<tr>
<th>Y</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>N</td>
</tr>
</tbody>
</table>

Has the TRIM number for the Risk assessment been recorded on the indemnity form?

<table>
<thead>
<tr>
<th>Y</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>N</td>
</tr>
</tbody>
</table>

Person picking up the baits has been provided with relevant sections of the 1080 PCO.

How were the baits transported?

How were baits stored at the depot?

<table>
<thead>
<tr>
<th>Y</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>N</td>
</tr>
</tbody>
</table>

Did anyone have access to the baits who were not listed on the indemnity form?

<table>
<thead>
<tr>
<th>Y</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>N</td>
</tr>
</tbody>
</table>

Has every one who had access to the baits current in attending an Annual 1080 Awareness Day?

<table>
<thead>
<tr>
<th>Y</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>N</td>
</tr>
</tbody>
</table>

Person picking up the baits has signed an Indemnity Form?

<table>
<thead>
<tr>
<th>Y</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>N</td>
</tr>
</tbody>
</table>

All persons who laid baits were listed on the indemnity form?

<table>
<thead>
<tr>
<th>Y</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>N</td>
</tr>
</tbody>
</table>

Was the program recorded in PWIS?

<table>
<thead>
<tr>
<th>Y</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>N</td>
</tr>
</tbody>
</table>

Was the pesticide use records filled out in PWIS?(provide evidence)

<table>
<thead>
<tr>
<th>Y</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>N</td>
</tr>
</tbody>
</table>

Can all baits issued be accounted for?

<table>
<thead>
<tr>
<th>Y</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>N</td>
</tr>
</tbody>
</table>

Were any baits issued for that program used elsewhere not listed on the indemnity form?

<table>
<thead>
<tr>
<th>Y</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>N</td>
</tr>
</tbody>
</table>

**Name:**

**Date:**

**Comments:**
## Section two

### Manufactured bait and ejector capsule facility

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Y</strong></td>
<td><strong>N</strong></td>
<td>ACOs have current AQ3 and AQF4 Chemical Training and are current ACOs.</td>
</tr>
<tr>
<td><strong>Y</strong></td>
<td><strong>N</strong></td>
<td>ACO facility has a 1080 supervisor as specified by NPWS Policy?</td>
</tr>
<tr>
<td><strong>Y</strong></td>
<td><strong>N</strong></td>
<td>Access to the 1080 locked safe / metal storage locker is restricted to ACOs and ACO supervisor.</td>
</tr>
<tr>
<td><strong>Y</strong></td>
<td><strong>N</strong></td>
<td>The store is at least 3m from any office not connected with storage and handling of pesticides</td>
</tr>
<tr>
<td><strong>Y</strong></td>
<td><strong>N</strong></td>
<td>Locked storage cabinet constructed from metal, attached to wall/floor, accessible only by ACOs.</td>
</tr>
<tr>
<td><strong>Y</strong></td>
<td><strong>N</strong></td>
<td>Is locked storage cabinet located in a locked room and/or caged area accessible only to ACOs. and those persons approved by ACOs?</td>
</tr>
<tr>
<td><strong>Y</strong></td>
<td><strong>N</strong></td>
<td>Locked storage cabinet at least 3m from any ignition source-flammable liquids etc.</td>
</tr>
</tbody>
</table>

**Note:** The storage of 1080 products must comply with either: 1 & 2, 1 & 3 or 2 & 3 (in red below).

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Y</strong></td>
<td><strong>N</strong></td>
<td>1 1080 Baits and capsules are stored in trays that are capable of capturing at least 100% of the largest container or 25% of the total volume being stored, whichever is the largest.</td>
</tr>
<tr>
<td><strong>Y</strong></td>
<td><strong>N</strong></td>
<td>2 The locked storage cabinet is capable of capturing at least 100% of the largest container or 25% of the total volume of liquid being stored, whichever is the largest.</td>
</tr>
<tr>
<td><strong>Y</strong></td>
<td><strong>N</strong></td>
<td>3 The room has a bund of concrete or impervious material, door sills and able to contain a spillage of at least 100% of the largest container or 25% of the total volume of liquid being stored, whichever is the largest.</td>
</tr>
<tr>
<td><strong>Y</strong></td>
<td><strong>N</strong></td>
<td>Is all equipment used with 1080 labelled with “1080 Poison” in large red writing?</td>
</tr>
<tr>
<td><strong>Y</strong></td>
<td><strong>N</strong></td>
<td>Has cross flow ventilation by vents in opposite walls above bund height.</td>
</tr>
<tr>
<td><strong>Y</strong></td>
<td><strong>N</strong></td>
<td>Has impervious shelving or spill control trays on shelving.</td>
</tr>
<tr>
<td><strong>Y</strong></td>
<td><strong>N</strong></td>
<td>Has the 1080 room have a lockable door that is kept locked.</td>
</tr>
<tr>
<td><strong>Y</strong></td>
<td><strong>N</strong></td>
<td>Appropriate signage on the storage facility – minimum signage should include ‘Toxic 6’ warning diamond and ‘No Unauthorised Entry’.</td>
</tr>
<tr>
<td><strong>Y</strong></td>
<td><strong>N</strong></td>
<td>Signage is legible and unobstructed so it is visible from all normal approaches to the facility.</td>
</tr>
<tr>
<td><strong>Y</strong></td>
<td><strong>N</strong></td>
<td>Has sufficient light to allow labels to be read (at least 200 lux).</td>
</tr>
<tr>
<td><strong>Y</strong></td>
<td><strong>N</strong></td>
<td>Product labels are not exposed to direct sunlight.</td>
</tr>
<tr>
<td><strong>Y</strong></td>
<td><strong>N</strong></td>
<td>Storage room contains a spills kit.</td>
</tr>
<tr>
<td><strong>Y</strong></td>
<td><strong>N</strong></td>
<td>Storage room contains a fire extinguisher(s) or there is one directly on the outside of the room.</td>
</tr>
<tr>
<td><strong>Y</strong></td>
<td><strong>N</strong></td>
<td>Water is available for washing, including a facility for an eye wash.</td>
</tr>
<tr>
<td><strong>Y</strong></td>
<td><strong>N</strong></td>
<td>SDS for all poisons and chemicals stored within the facility are readily available and accessible in a weatherproof container positioned outside of the facility.</td>
</tr>
<tr>
<td><strong>Y</strong></td>
<td><strong>N</strong></td>
<td>Emergency contact details available – Poisons Information Centre, 000 for ambulance, police and fire brigade, local hospital and doctor, SES, SafeWork NSW.</td>
</tr>
<tr>
<td><strong>Y</strong></td>
<td><strong>N</strong></td>
<td>Has the pesticide storage facility had a risk assessment undertaken? (see evidence)</td>
</tr>
<tr>
<td><strong>Y</strong></td>
<td><strong>N</strong></td>
<td>Does the facility have an Emergency Plan (and displayed in the room) the may include: 1. Who to contact 2. Activation procedures 3. Evacuation procedure 4. Control and containment of spills and leaks 5. Fire-fighting procedures 6. Protection of persons engaged in emergency assistance</td>
</tr>
</tbody>
</table>
### Manufactured bait and ejector capsule facility

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>7.</td>
<td>Assistance by emergency authorities such as police and fire brigade.</td>
</tr>
<tr>
<td>8.</td>
<td>Emergency contacts.</td>
</tr>
<tr>
<td>9.</td>
<td>A list of individuals and organisations to be provided with a copy of the emergency plan.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name:</th>
<th>Date:</th>
</tr>
</thead>
</table>

Comments:
### Section three

**ACO 1080 storage and bait preparation facility**

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACOs have a current AQ3 and AQF4 Chemical Training and are current ACOs.</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>ACO facility has a 1080 supervisor as specified by NPWS Policy?</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>The 1080 store is at least 3m from any office not connected with storage and handling of pesticides..</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>The 1080 store is at least 3m from any ignition source-flammable liquids etc.</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>1080 bait storage and preparation facility is lockable and secure.</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>All liquid concentrate is stored in a locked safe or metal locker that is fixed to the floor or wall.</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Locked safe or metal storage locker has a tray capable of capturing 25% of the total volume of 1080 liquid concentrate, including at least 100% of the largest container held.</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>The 1080 store has a bund of concrete or impervious material, able to contain a spillage of at least 100% of the largest container or 25% of the total volume of liquid being stored, whichever is the largest and can be drained for effective washing down into a dilution pit or septic system.</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>The 1080 store has concrete or impervious floor and door sills.</td>
<td>X</td>
<td>N</td>
</tr>
<tr>
<td>The dilution pit or septic system of at least 50L capacity is able to be accessed for sampling.</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>All liquid waste entering the sewage system can be held for at least 1 hour. If not, has relevant approval been received to allow liquid waste to flow directly into the sewage.</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Is the drain in the facility closed off at all times other than when the equipment or room is being hosed down.</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Has cross flow ventilation by vents in opposite walls above bund height.</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Has sufficient light to allow labels to be read (at least 200 lux).</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Product labels are not exposed to direct sunlight.</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Storage room contains a spills kit.</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Storage room contains a fire extinguisher(s) or there is one directly on the outside of the room.</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Water is available for washing, including eye wash facility.</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>All equipment used for mixing 1080 bait and preparing ejector capsules clearly labelled ‘1080 Poison’ in large red lettering.</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>All 1080 measuring equipment is laboratory grade.</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Access to the 1080 locked safe / metal storage locker is restricted to ACOS and ACO supervisor.</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Only current ACOS are using 1080 liquid concentrate or supplying manufactured bait at the facility.</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Access to the storage and preparation facility by non ACOs for use of cutting machines or to load bait is done under supervision or authorisation of an ACO.</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Appropriate signage on the storage facility – minimum signage should include ‘Toxic 6’ warning diamond and ‘No Unauthorised Entry’.</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Signage is legible and unobstructed so it is visible from all normal approaches to the facility.</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>SDS for all poisons and chemicals stored within the facility are readily available and accessible in a weatherproof container positioned outside of the facility.</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Emergency contact details available – Poisons Information Centre, 000 for ambulance, police and fire brigade, local hospital and doctor, SES, SafeWork NSW.</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Equipment, trays and benches are washed down with cold water following use.</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Are the scales accurate to one gram?</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Can the scales be calibrated and are there calibration weights?</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Has the pesticide storage facility had a risk assessment undertaken? (see evidence)</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Does the facility have an Emergency Plan (and displayed in the room) the may include: 1. Who to contact 2. Activation procedures 3. Evacuation procedure</td>
<td>Y</td>
<td>N</td>
</tr>
</tbody>
</table>
### ACO 1080 storage and bait preparation facility

| 4. Control and containment of spills and leaks |
| 5. Fire-fighting procedures                   |
| 6. Protection of persons engaged in emergency assistance |
| 7. Assistance by emergency authorities such as police and fire brigade |
| 8. Emergency contacts                         |
| 9. A list of individuals and organisations to be provided with a copy of the emergency plan. |

<table>
<thead>
<tr>
<th>Name:</th>
<th>Date:</th>
</tr>
</thead>
</table>

Comments:
## Section four

### Preparation of 1080 baits

**What bait is being prepared (list):**

<table>
<thead>
<tr>
<th>Y</th>
<th>N</th>
<th>NA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

PPE including appropriate gloves, cotton overalls and washable hat worn by ACOs when handling 1080 liquid concentrate.

<table>
<thead>
<tr>
<th>Y</th>
<th>N</th>
<th>NA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

No unauthorised person(s) are within close proximity of the 1080 concentrate when baits are being prepared.

<table>
<thead>
<tr>
<th>Y</th>
<th>N</th>
<th>NA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

All conditions are met when mixing 1080 baits in the field (use General Checklist for bait preparation for field from vertebrate pesticide manual).

<table>
<thead>
<tr>
<th>Y</th>
<th>N</th>
<th>NA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For wild dogs bait type is boneless red meat, tongue, kidney, liver or manufactured sausage and weight 250 g or greater prior to drying.

<table>
<thead>
<tr>
<th>Y</th>
<th>N</th>
<th>NA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For foxes bait type is fowl heads, chicken or turkey wingettes, boneless red meat, tongue, kidney, liver, bird eggs or manufactured sausage bait types.

<table>
<thead>
<tr>
<th>Y</th>
<th>N</th>
<th>NA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Fox boneless red meat baits weigh 100 grams prior to drying.

<table>
<thead>
<tr>
<th>Y</th>
<th>N</th>
<th>NA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For feral pigs only grain or manufactured pellets bait types is used.

<table>
<thead>
<tr>
<th>Y</th>
<th>N</th>
<th>NA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For feral pigs 15 ml of 1080 concentrate per kg of grain is used.

<table>
<thead>
<tr>
<th>Y</th>
<th>N</th>
<th>NA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For feral pigs 16 ml of 1080 concentrate per kg of pellets is used.

<table>
<thead>
<tr>
<th>Y</th>
<th>N</th>
<th>NA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For feral pig and rabbit bait, is blue or green coloured dye added.

<table>
<thead>
<tr>
<th>Y</th>
<th>N</th>
<th>NA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For rabbits oats, manufactured pellets or carrots bait types are used.

<table>
<thead>
<tr>
<th>Y</th>
<th>N</th>
<th>NA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For rabbit carrot bait, carrots are diced into approximately 2 cm x 2 cm pieces.

<table>
<thead>
<tr>
<th>Y</th>
<th>N</th>
<th>NA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For rabbit carrot bait 6ml of 1080 concentrate per kg of carrots has been added.

<table>
<thead>
<tr>
<th>Y</th>
<th>N</th>
<th>NA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For rabbit oat bait 12ml of 1080 concentrate per kg of oats has been added.

<table>
<thead>
<tr>
<th>Y</th>
<th>N</th>
<th>NA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For rabbit pellet bait 15ml of 1080 concentrate per kg of pellets has been added.

<table>
<thead>
<tr>
<th>Y</th>
<th>N</th>
<th>NA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Feral pig or rabbits baits are bag mixed using a primary and secondary spill control measure: ie bag mixing of bait and 1080 concentrate done over a large plastic tub to contacting any potential spills

<table>
<thead>
<tr>
<th>Y</th>
<th>N</th>
<th>NA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

An enclosed bait mixer (Moree mixer) was used when preparing rabbit or feral pig bait.

<table>
<thead>
<tr>
<th>Y</th>
<th>N</th>
<th>NA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1080 baits have not been frozen.

<table>
<thead>
<tr>
<th>Y</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Name:**

**Date:**
## Section five

**Usage and supply records**

The records contain:

| Y □ N □ | Type of pesticide used |
| Y □ N □ | ACO name and agency or organisation. |
| Y □ N □ | Amount of specified pesticide on hand. |
| Y □ N □ | Daily receipt (from), transfer (to) and use for that month. |
| Y □ N □ | Records contains total amount of concentrate used. |
| Y □ N □ | Type of bait used and target pest. |
| Y □ N □ | Number or quantity (kg) of bait used. |
| Y □ N □ | Name of person the bait was supplied to. |
| Y □ N □ | Indemnity from completed. |
| Y □ N □ | Location (reserve or property) where baits will be used. |
| Y □ N □ | Risk assessment completed (3 yearly NPWS). |

Name: ______________________ Date: ______________________

Comments: ______________________
### Section six

**Auditing**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Y</td>
<td>N</td>
</tr>
</tbody>
</table>

Name: ___________________________ Date: ________________

Comments: ___________________________

### Section seven

**Records**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Y</td>
<td>N</td>
</tr>
</tbody>
</table>

Name: ___________________________ Date: ________________

Comments: ___________________________
<table>
<thead>
<tr>
<th>Audit Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1080 end user audit</strong></td>
</tr>
<tr>
<td>Activities that need addressing:</td>
</tr>
<tr>
<td><strong>Manufactured bait and ejector capsule storage facility.</strong></td>
</tr>
<tr>
<td>Activities that need addressing:</td>
</tr>
<tr>
<td><strong>ACO 1080 storage and bait preparation facility</strong></td>
</tr>
<tr>
<td>Activities that need addressing:</td>
</tr>
<tr>
<td><strong>Preparation of 1080 Baits</strong></td>
</tr>
<tr>
<td>Activities that need addressing:</td>
</tr>
<tr>
<td><strong>Usage and supply records</strong></td>
</tr>
<tr>
<td>Activities that need addressing:</td>
</tr>
</tbody>
</table>
Appendix F - Summary of bait material and applications rates for vertebrate poisons

1080

Wild dogs

1080 bait material for wild dogs

An Authorised Control Officer may use 1080 liquid concentrate products to produce 1080 bait material. Where an Authorised Control Officer uses material to produce 1080 bait material, the Authorised Control Officer must only use boneless red meat, offal (heart, tongue and liver). Each red meat and offal bait produced must weigh approximately 250 prior to any drying process. Persons preparing 1080 bait material must follow wild dog bait preparation instructions on the approved label of the 1080 liquid concentrate product.

1080 application rate for wild dogs

When using the ACTA 1080 Concentrate product or PAKS 1080 Concentrate product all bait material, as indicated above, must be injected with 0.2ml of the product per bait.

Foxes

1080 bait material for foxes

An Authorised Control Officer may use 1080 liquid concentrate products to produce 1080 bait material. Where an Authorised Control Officer uses material to produce 1080 bait material, the Authorised Control Officer must only use fowl heads, chicken or turkey wingettes, boneless red meat, offal (tongue, heart kidney and liver), bird eggs, and manufactured sausage baits. Each red meat and offal bait must weigh a minimum off (100) grams prior to any drying process. An exemption to the minimum 100g weight applies for whole lamb tongue and whole lamb kidneys but they must weigh more than 70g. Persons preparing 1080 bait material must follow fox bait preparation instructions on the approved label of the 1080 liquid concentrate product.

1080 application rate for foxes

When using the ACTA 1080 Concentrate product or PAKS 1080 Concentrate product all bait material, as indicated above, must be injected with 0.1ml of the product per bait.
Table 9. Bait application rates and bait base for ground and aerial distribution.

<table>
<thead>
<tr>
<th>Species</th>
<th>Bait base</th>
<th>Ground baiting</th>
<th>Aerial Baiting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fox</td>
<td>Fowl Heads</td>
<td>Up to 10 baits per km - 20 per 100 Ha</td>
<td>Not allowed</td>
</tr>
<tr>
<td>Fox</td>
<td>Chicken Wingettes</td>
<td>Up to 10 baits per km - 20 per 100 Ha</td>
<td>Up to 10 baits per km</td>
</tr>
<tr>
<td>Fox</td>
<td>Boneless Red Meat</td>
<td>Up to 10 baits per km - 20 per 100 Ha</td>
<td>Up to 10 baits per km</td>
</tr>
<tr>
<td>Fox</td>
<td>Offal (whole lamb tongue, whole lamb kidney, heart*, liver*)</td>
<td>Up to 10 baits per km - 20 per 100 Ha</td>
<td>Up to 10 baits per km</td>
</tr>
<tr>
<td>Fox</td>
<td>Fowl eggs</td>
<td>Up to 10 baits per km - 20 per 100 Ha</td>
<td>Not allowed</td>
</tr>
<tr>
<td>Fox</td>
<td>Manufactured sausage</td>
<td>Up to 10 baits per km - 20 per 100 Ha</td>
<td>Up to 10 baits per km</td>
</tr>
<tr>
<td>Fox</td>
<td>Fox off</td>
<td>Up to 10 baits per km - 20 per 100 Ha</td>
<td>Up to 10 baits per km</td>
</tr>
<tr>
<td>Fox</td>
<td>Foxsheild</td>
<td>Up to 10 baits per km - 20 per 100 Ha</td>
<td>Up to 10 baits per km</td>
</tr>
<tr>
<td>Fox</td>
<td>Defox</td>
<td>Up to 10 baits per km - 20 per 100 Ha</td>
<td>Up to 10 baits per km</td>
</tr>
<tr>
<td>Dog</td>
<td>Boneless Red Meat</td>
<td>Up to 10 baits per km - 20 per 100 Ha</td>
<td>Up to 40 baits per km</td>
</tr>
<tr>
<td>Dog</td>
<td>Offal (tongue, heart, liver*)</td>
<td>Up to 10 baits per km - 20 per 100 Ha</td>
<td>Up to 40 baits per km</td>
</tr>
<tr>
<td>Dog</td>
<td>Doggone</td>
<td>Up to 10 baits per km - 20 per 100 Ha</td>
<td>Up to 40 baits per km</td>
</tr>
<tr>
<td>Dog</td>
<td>DK-9</td>
<td>Up to 10 baits per km - 20 per 100 Ha</td>
<td>Up to 40 baits per km</td>
</tr>
</tbody>
</table>

* Ground baiting only
Note: All bait weights must comply with weight requirements – 100 g for foxes and 250 g for dogs (wet weight before drying).

**Feral pigs**

**1080 bait material for feral pigs**

An Authorised Control Officers may use 1080 liquid concentrate products to produce 1080 bait material. Where an Authorised Control Officer uses material to produce 1080 bait material, the Authorised Control Officer must only use grain and manufactured pellets. Persons preparing 1080 bait material must follow feral pig bait preparation instructions on the approved label of the 1080 liquid concentrate product.

**1080 application rate for feral pigs**

When using the ACTA 1080 Concentrate product or PAKS 1080 Concentrate product, grain bait material must be mixed at the rate of 15ml of product per kilogram of grain and manufactured pellets must be mixed at the rate of 15ml of product per kilogram of pellets.
Table 10: 1080 liquid concentrate mixing rates for feral pig poisoning.

Mixing rate per kg of bait:
Grain - 15 mL of 1080 liquid concentrate to every kilogram of grain bait.
Pellets - 15 mL of 1080 liquid concentrate + 15 mL of water to every kilogram of pellet bait

<table>
<thead>
<tr>
<th>Bait weight kg</th>
<th>1080 liquid conc. mL</th>
<th>1080 liquid conc. mL</th>
<th>Water mL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>15</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>5</td>
<td>75</td>
<td>80</td>
<td>80</td>
</tr>
<tr>
<td>10</td>
<td>150</td>
<td>160</td>
<td>160</td>
</tr>
<tr>
<td>15</td>
<td>225</td>
<td>240</td>
<td>240</td>
</tr>
<tr>
<td>20</td>
<td>300</td>
<td>320</td>
<td>320</td>
</tr>
<tr>
<td>25</td>
<td>375</td>
<td>400</td>
<td>400</td>
</tr>
<tr>
<td>30</td>
<td>450</td>
<td>480</td>
<td>480</td>
</tr>
<tr>
<td>35</td>
<td>525</td>
<td>560</td>
<td>560</td>
</tr>
<tr>
<td>40</td>
<td>600</td>
<td>640</td>
<td>640</td>
</tr>
<tr>
<td>45</td>
<td>675</td>
<td>720</td>
<td>720</td>
</tr>
<tr>
<td>50</td>
<td>750</td>
<td>800</td>
<td>800</td>
</tr>
</tbody>
</table>

Rabbits

1080 bait material for rabbits

An Authorised Control Officer may use 1080 liquid concentrate products to produce 1080 bait material. Where an Authorised Control Officer uses material to produce 1080 bait material, the Authorised Control Officer must only use oats, manufactured pellets and carrots. An Authorised Control Officer must dice carrots into pieces approximately two (2) centimetres by two (2) centimetres in size or five (5) grams in weight. Persons preparing 1080 bait material must follow rabbit bait preparation instructions on the approved label of the 1080 liquid concentrate.

1080 application rate for rabbits

When using the ACTA 1080 Concentrate product or PAKS 1080 Concentrate product, oat bait material must be mixed at the rate of 12ml of product per kilogram of oats, manufactured pellets must be mixed at the rate of 15ml of product per kilogram of pellets, and carrot bait material must be mixed at the rate of 6ml of product per kilogram of carrots.
Table 11. 1080 liquid concentrate mixing rates for rabbit baits

<table>
<thead>
<tr>
<th>Bait</th>
<th>Carrots</th>
<th>Oats</th>
<th>Pellets</th>
</tr>
</thead>
<tbody>
<tr>
<td>kg</td>
<td>1080 liquid conc. mL</td>
<td>1080 liquid conc. mL</td>
<td>Water mL</td>
</tr>
<tr>
<td>1</td>
<td>6</td>
<td>12</td>
<td>15</td>
</tr>
<tr>
<td>5</td>
<td>30</td>
<td>60</td>
<td>75</td>
</tr>
<tr>
<td>10</td>
<td>60</td>
<td>120</td>
<td>150</td>
</tr>
<tr>
<td>15</td>
<td>90</td>
<td>180</td>
<td>225</td>
</tr>
<tr>
<td>20</td>
<td>120</td>
<td>240</td>
<td>300</td>
</tr>
<tr>
<td>25</td>
<td>150</td>
<td>300</td>
<td>375</td>
</tr>
<tr>
<td>30</td>
<td>180</td>
<td>360</td>
<td>450</td>
</tr>
<tr>
<td>35</td>
<td>210</td>
<td>420</td>
<td>525</td>
</tr>
<tr>
<td>40</td>
<td>240</td>
<td>480</td>
<td>600</td>
</tr>
<tr>
<td>45</td>
<td>270</td>
<td>540</td>
<td>675</td>
</tr>
<tr>
<td>50</td>
<td>300</td>
<td>600</td>
<td>750</td>
</tr>
</tbody>
</table>

**Mixing rate per kg of bait:**
- Carrot - 6 mL of 1080 liquid concentrate to every kilogram of bait.
- Oats - 12 mL of 1080 liquid concentrate + 12 mL of water to every kilogram of bait.
- Pellets – 15ml of 1080 liquid concentrate + 15ml water to every kilogram of bait.

**Pindone**

Source: The EPA Pesticide Control Order that relates to Pindone Concentrate products.

**Pindone bait material for rabbits**

Definition of 'Pindone bait material' means any carrot (diced into pieces roughly 2 centimetres cubed or 5 grams in weight), or any oats, that have been treated with pindone in accordance with the NSW directions on an approved label of the products "Rabbait Aqueous Pindone Concentrate", "ALDI Pindone 25 Liquid Concentrate" and "Pindone 25 Rabbit Bait Rodenticide" or any other pindone concentrate product that has been registered by the APVMA and approved for use in NSW and that can be used to control rabbits.

**Pindone concentrate products for rabbits**

Definitions:

- ‘Pindone concentrate product’ means any concentrate product that contains pindone as its only active constituent, has been registered by the APVMA and approved, by way of label instruction, for use in NSW. It specifically includes the products "Rabbait Aqueous Pindone Concentrate", "ALDI Pindone 25 Liquid Concentrate" and "Pindone 25 Rabbit Bait Rodenticide".

- ‘Pindone bait product’ means any non liquid formulation product that contains pindone as its only active constituent and that has been registered by the APVMA and approved for use in NSW. It also includes pindone bait material. It does not include the pindone concentrate products "Rabbait Aqueous Pindone Concentrate", "ALDI Pindone 25 Liquid Concentrate" and "Pindone 25 Rabbit Bait Rodenticide" or any other pindone concentrate product.
• ‘ALDI Pindone 25 Liquid Concentrate’ means the registered agricultural chemical product ALDI Pindone 25 Liquid Concentrate (APVMA Product Registration Number 52505) that has an active constituent comprising 25 grams of pindone present as the sodium salt per litre of product.

• ‘Pindone 25 Rabbit Bait Rodenticide’ means the registered agricultural chemical product Pindone 25 Rabbit Bait Rodenticide (APVMA Product Registration Number 48263) that has an active constituent comprising 25 grams of pindone sodium per kilogram of product.

• ‘Rabbait Aqueous Pindone Concentrate’ means the registered agricultural chemical product Rabbait Aqueous Pindone Concentrate (APVMA Product Registration Number 48158) that has an active constituent comprising 25 grams of pindone present as the sodium salt per litre of product.

Table 12. Pindone concentrate formulations and mixing rates.

<table>
<thead>
<tr>
<th>Pindone concentrate</th>
<th>Supplier</th>
<th>Formulation</th>
<th>Mixing rates</th>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pindone-25 Rabbit Bait Rodenticide®</td>
<td>PAKS National</td>
<td>Powder 25 g/kg pindone sodium</td>
<td>200 g/20 kg carrots</td>
<td>Indefinite shelf life</td>
<td>Can only be used on carrots (not grains)</td>
</tr>
<tr>
<td>Rabbait® Aqueous Pindone Concentrate</td>
<td>Animal Control Technologies</td>
<td>Liquid 25 g/L pindone sodium</td>
<td>200 mL/20 kg carrots 200 mL/10 kg oats</td>
<td>Can be used on carrots and oats</td>
<td>Shorter shelf life than the powder formulation (shelf life can be extended by refrigeration)</td>
</tr>
<tr>
<td>Pindone 25® Liquid Concentrate</td>
<td>PAKS National</td>
<td>Liquid 25 g/L pindone sodium</td>
<td>200 mL/20 kg carrots 200 mL/10 kg oats</td>
<td>Can be used on carrots and oats</td>
<td>Shorter shelf life than the powder formulation (shelf life can be extended by refrigeration)</td>
</tr>
</tbody>
</table>

**Bromadiolone**

Add 1 L of Bromadiolone solution (0.5g/L) to 19kg of clean wheat in an enclosed drum mixer. Tumble for 3-5 minutes. Check that grain is completely coated.

**Coumatetralyl**

Mix 500g Racumin® powder and 100-200 mL of canola oil with 10kg of grain in an enclosed drum mixer. Tumble for 3-5 minutes. Check that grain is completely coated.

**RHDV**

Using a sterile syringe, reconstitute the RHDV K5 lyophilised virus by adding 10ml of sterile distilled water and swirl gently for a few minutes. Then dilute the reconstituted vial to a total volume of 100ml (add a further 90ml). Add the 100ml diluted suspension to 5kg of oats or 10kg of diced carrots in an enclosed mixer. Tumble for 3-5 minutes. Check that bait is completely coated.
Appendix G - Risk assessment guidelines

The following should be considered as a guide only and does not cover every possible scenario that may need to be considered when undertaking a baiting program. When carrying out a risk assessment, the ACO must consider all known specific or local issues that may constitute a risk.

As part of the risk assessment process, the following situations may require additional control measures to be implemented in order for baiting to proceed:

- Where the property is less than 100ha.
- Where the bait is to be used within closely settled areas.
- Where the bait is to be used in areas within 4 km of a village or street.
- Where coordinated group baiting control programs are being carried out (one risk assessment may be suitable for all landholders in the group).
- When the proposed program is ongoing or a replacement program greater than 3 months.
- When an ACO has concerns that the PCO requirements may not be able to be met.
- When there have been complaints or allegations of misuse of pesticides on the property from within the local community in the past.
- When replacement bait numbers exceed the LLS bait issuing guideline.

When a risk is identified, the ACO in consultation with the land owner/manager and authorised user (if different), must assess the risk and determine what control measures can be included in the program to reduce the risk to a medium or low level. If the risk cannot be reduced to a medium level then the baiting program must not proceed and alternative control methods considered.

Note: A risk assessment is only valid for a maximum of 5 years (3 years for National Park Estates). A new risk assessment will be required sooner if circumstance occur that may change the risk rating. For example this would include but not be limited to modifications like subdivision of a property or new residences on properties that are likely to have an impact on distance restrictions, new land managers or neighbours etc.

<table>
<thead>
<tr>
<th>Risk Level</th>
<th>Guidelines</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme</td>
<td>Baiting must not proceed if risk is extreme or the PCO requirements cannot be met. Mandatory achievable and practical controls must be implemented to reduce the risk to medium. Follow up phone call should be made by ACO to ensure mandatory controls have been implemented.</td>
</tr>
<tr>
<td>High</td>
<td>Baiting should not proceed if risk is high. Mandatory achievable and practical controls must be implemented to reduce the risk. Emergency baiting - mandatory controls must be implemented to reduce the risk to medium as soon as practical. Normal baiting - mandatory controls must be implemented to reduce the risk to medium prior to commencement. Where baiting is regular or ongoing, permanent controls must be implemented. Follow up phone call may be made by ACO to ensure mandatory controls have been implemented.</td>
</tr>
<tr>
<td>Medium</td>
<td>Baiting may be undertaken if risk is medium but must be monitored. Implement achievable and practical controls to reduce the likelihood if possible. Where baiting is regular or ongoing, permanent controls must be implemented.</td>
</tr>
<tr>
<td>Low</td>
<td>Proceed with baiting.</td>
</tr>
<tr>
<td>Likelihood</td>
<td>Consequences</td>
</tr>
<tr>
<td>--------------------</td>
<td>--------------</td>
</tr>
<tr>
<td></td>
<td>Insignificant</td>
</tr>
<tr>
<td>Almost certain</td>
<td>Low (L)</td>
</tr>
<tr>
<td>Likely</td>
<td>Low (L)</td>
</tr>
<tr>
<td>Possible</td>
<td>Low (L)</td>
</tr>
<tr>
<td>Unlikely</td>
<td>Low (L)</td>
</tr>
<tr>
<td>Rare</td>
<td>Low (L)</td>
</tr>
</tbody>
</table>

**Risk Matrix**

**How to Prioritise the Risk Rating**

Once the level of risk has been determined the table may be used in determining when to act to implement the control measures. For example this would include but not be limited to subdivision of a property, changes impacting distance restrictions, new land managers or neighbours etc.

**Quantitative measures of consequence/impact**

**Insignificant:** Very low risk to human safety, non-target animals or environment

**Minor** – Very low risk to human safety. Very little perceived or negligible impact to non-target animals or environment

**Moderate** – Human injury unlikely. Potential death of individual non target animals or injury to multiple non target animals eg: vet treatment required for domestic dogs. Potential for limited or negligible impact to environment

**Major** – Human injury likely to result with medical care required. Death to multiple non-target animals or some pets highly likely. High likelihood of environmental damage or pollution of soil and water

**Catastrophic** – Death or permanent disabling injury to humans. Broad scale death to non-target domestic animals/pets or threatened species. Significant environmental damage with detrimental effect, associated with significant financial loss

**Qualitative measures of likelihood**

**Almost certain** – This event will occur in most to all situations (about 90% of time)

**Likely** – This event is expected to occur more often than not, i.e. it will occur in the majority of situations (about 50-80% of time)

**Possible** – This event is more likely to not occur than occur (about 20-40% of time)

**Unlikely** – This event is not expected to occur more often than not i.e. it will not occur in the majority of situations (about 10-20% of time)

**Rare** – It is theoretically possible for this to occur, but it is expected to not occur in most to all situations (about 1% of time)

**Definitions**

Closely settled areas – Where 5 or more of the properties require notification, as they have a boundary within 1 km of the baiting location, are less than 50 ha.

Village or street – a locality that has a combination of a speed limit of 80km or less, street lights and zoned residential by local government.
<table>
<thead>
<tr>
<th>Hazards/Risks</th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
<th>Risk level</th>
<th>Description of hazard or risk</th>
<th>Recommended control measures</th>
<th>New risk level</th>
<th>Detail how control measures will be implemented and any additional controls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Can distance restrictions be met?</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☒</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Presence of domestic pets?</td>
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<td>☒</td>
<td>☐</td>
<td>☒</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Presence of livestock?</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☒</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Presence of susceptible native animals?</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☒</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Close proximity to urban areas and townships</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☒</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Risk to domestic or town water supplies?</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☒</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (please describe)</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☒</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (please describe)</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☒</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (please describe)</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☒</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (please describe)</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☒</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix H – First aid for working dogs and other domestic animals

Although this advice is primarily for working dogs poisoned by 1080, the treatment for all domestic animals is the same. This advice is also applicable to poisoning by pindone, but the veterinary treatment will differ with the type of poison.


What are the risks of poisoning working dogs?

Wherever 1080 baiting is taking place, there is always a risk of accidental poisoning. Dogs may suffer accidental poisoning by eating baits, picking up baits that have been moved or relocated by other animals such as foxes, or eating dead animals that have been poisoned by 1080 baits.

Accidental poisoning can occur in the paddock or area being treated or in areas adjacent to the baited paddock, particularly if an animal or bird has moved or vomited up some 1080 bait.

Muzzle your dogs or keep them chained up while ever baits are likely to be active

How do I know my dog has been poisoned?

Dogs seen eating bait material or suspected of picking up bait material should be taken to a veterinarian as quickly as possible.

The time it takes for 1080 to work may be as little as 30 minutes to 2 hours before symptoms occur, depending on the dose. It is best to take action immediately rather than wait for the symptoms to appear. Quite often, once symptoms are evident it may be too late to save the animal.

Get to a vet ASAP

Signs to watch for are:

- anxiety
- frenzied behaviour such as running or howling
- hypersensitivity to sound or light
- failure to respond to owner
- vomiting
- urinating and defecating inappropriately.

and eventually:

- convulsions, seizures and fitting
- difficulty breathing
- respiratory failure
- coma
- death.

Inducing vomiting

Extreme care should be taken when inducing vomiting, as the dog may react violently and expose toxic vomit, which can cause secondary poisoning of other domestic animals.

You should induce vomiting when:

- you have seen your dog eat a bait or a poisoned carcass
- there is a likely delay before veterinary assistance is available.

Just because the dog has vomited does not mean all the poison is out of the stomach. Still seek veterinary attention.
What can I use?

- Table salt, 1 to 3 tablespoons orally.
- Salty water.
- Dilute mustard and water.

When using 1080 it is advisable to have a small plastic drink bottle with 30 to 50 g of salt and 250 mL water handy at all times.

Ensure no other animal has access to the vomit, as they will be poisoned as well.

What else can I do?

- Call your local veterinary clinic and advise you are bringing in the animal.
- Wrap the dog in a blanket or put in a box to restrict movement and prevent it from injuring itself.
- If the dog is convulsing or fitting, keep your fingers clear of its mouth; it will not swallow its tongue.
- Keeping the dog cool by spraying lightly with water or giving a good flow of air may help.
Appendix I – Sensitivities of various animals to pindone, strychnine and 1080

Pesticides used in the management of Vertebrate pests in Australia: A Review; Lynette Mcleod and Glen Saunders, NSW Department of Primary Industries, August 2013.

Pindone

Table 13. The acute and chronic oral sensitivity to pindone for a range of species expressed as the median lethal dose (LD<sub>50</sub>).

<table>
<thead>
<tr>
<th>Species</th>
<th>Acute LD&lt;sub&gt;50&lt;/sub&gt; (mg/kg)</th>
<th>Reference</th>
<th>Chronic LD&lt;sub&gt;50&lt;/sub&gt; (mg/kg/day)</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduced mammals</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brown rat, <em>Rattus norvegicus</em></td>
<td>&gt;50</td>
<td>(Saunders et al. 1955)</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Rabbit, <em>Oryctolagus cuniculus</em></td>
<td>25</td>
<td>(Eason and Joll 1993)</td>
<td>0.52 for 7 days</td>
<td>(Oliver and Wheeler 1978, Martin et al. 1994)</td>
</tr>
<tr>
<td>Sheep, <em>Ovis aries</em></td>
<td>&gt;74</td>
<td>(Twigg et al. 1999)</td>
<td>&gt; 50 for 7 days</td>
<td>(Oliver and Wheeler 1978)</td>
</tr>
<tr>
<td>Cattle, <em>Bos primigenius</em></td>
<td>–</td>
<td>–</td>
<td>2 for 3 days</td>
<td>(Twigg et al. 1999)</td>
</tr>
<tr>
<td>Pig, <em>Sus scrofa</em></td>
<td>&gt;10</td>
<td>(Twigg et al. 1999)</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Cat, <em>Felis catus</em></td>
<td>1.0–1.25 for 4 days</td>
<td>(Twigg et al. 1999)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dog, <em>Canis lupus familiaris</em></td>
<td>75–100</td>
<td>(Beauregard et al. 1955)</td>
<td>2.5 for 6–14 days</td>
<td>(Beauregard et al. 1955)</td>
</tr>
<tr>
<td>Native mammals</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brush-tail possum, <em>Trichosurus vulpecula</em></td>
<td>&gt;100</td>
<td>(Eason and Jolly 1993)</td>
<td>51 for 5 days</td>
<td>(Jolly et al. 1994)</td>
</tr>
<tr>
<td>Western grey kangaroo, <em>Macropus fuliginosus</em></td>
<td>–</td>
<td>–</td>
<td>1–2 for 7–14 days</td>
<td>(Twigg et al. 1999)</td>
</tr>
<tr>
<td>Introduced birds</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chicken, <em>Gallus gallus domesticus</em></td>
<td>–</td>
<td>–</td>
<td>2.5 for 4 days</td>
<td>(Twigg et al. 1999)</td>
</tr>
<tr>
<td>Native Birds</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Australian magpie, <em>Gymnorhina tibicen</em></td>
<td>–</td>
<td>–</td>
<td>4 for 5 days</td>
<td>(Martin et al. 1994)</td>
</tr>
<tr>
<td>Wedge-tailed eagle, <em>Aquila audax</em></td>
<td>–</td>
<td>–</td>
<td>0.25 for 5 days</td>
<td>(Martin et al. 1994)</td>
</tr>
</tbody>
</table>
**Strychnine**

Table 14. The sensitivity to strychnine for a range of species expressed as the oral median lethal dose (LD$_{50}$). The amount of strychnine is calculated using the average male body weights derived from (McIlroy 1984, Strahan 1991).

<table>
<thead>
<tr>
<th>Species</th>
<th>Oral LD$_{50}$ (mg/kg)</th>
<th>Av body weight (kg)</th>
<th>Amount for LD$_{50}$ (mg)</th>
<th>Reference (LD$_{50}$ data)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Introduced mammals</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mouse, <em>Mus musculus</em></td>
<td>2.0 $^a$</td>
<td>0.02</td>
<td>0.04</td>
<td>(Prasad et al. 1981)</td>
</tr>
<tr>
<td>Brown rat, <em>Rattus norvegicus</em> (lab. strain)</td>
<td>2.35–6.5 $^b$</td>
<td>0.32</td>
<td>0.75–2.08</td>
<td>(Ward and Crabtree 1942, Schafer 1972)</td>
</tr>
<tr>
<td></td>
<td>2.6–6.5 $^c$</td>
<td></td>
<td></td>
<td>(Fitzwater and Prakash 1973)</td>
</tr>
<tr>
<td></td>
<td>5 $^d$</td>
<td></td>
<td>8.0–2.08</td>
<td></td>
</tr>
<tr>
<td>Brown rat, <em>Rattus norvegicus</em> (wild strain)</td>
<td>4.8 $^c$</td>
<td>0.32</td>
<td>1.54</td>
<td>(Dieke and Richter 1946)</td>
</tr>
<tr>
<td>Rabbit, <em>Oryctolagus cuniculus</em></td>
<td>0.6 $^b$</td>
<td>1.6</td>
<td>0.96</td>
<td>(Fitzwater and Prakash 1973)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>10.4</td>
<td>(Lazarus 1956)</td>
</tr>
<tr>
<td>Cattle, <em>Bos primigenius</em></td>
<td>LD 1.5 $^a$</td>
<td>500</td>
<td>750</td>
<td>(Clarke 1976)</td>
</tr>
<tr>
<td>Horse, <em>Equus caballus</em></td>
<td>LD 1.0 $^a$</td>
<td>700</td>
<td>700</td>
<td>(Clarke 1976)</td>
</tr>
<tr>
<td>Pig, <em>Sus scrofa</em></td>
<td>0.5–1.0 $^a$</td>
<td>150–300 $^c$, $^d$</td>
<td>35–70</td>
<td>(Buck 1978)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>10,500–21,000</td>
<td>(Fitzwater and Prakash 1973)</td>
</tr>
<tr>
<td>Cat, <em>Felis catus</em></td>
<td>2.0 $^a$</td>
<td>5.0</td>
<td>10.0</td>
<td>(Buck 1978)</td>
</tr>
<tr>
<td></td>
<td>0.75 $^b$</td>
<td></td>
<td>3.75</td>
<td>(Fitzwater and Prakash 1973)</td>
</tr>
<tr>
<td></td>
<td>0.5 $^c$</td>
<td></td>
<td>2.5</td>
<td>(Moraillon and Pinault 1978)</td>
</tr>
<tr>
<td>Dog, <em>Canis lupus familiaris</em></td>
<td>0.75 $^b$</td>
<td>16.0</td>
<td>12.0</td>
<td>(Buck 1978)</td>
</tr>
<tr>
<td></td>
<td>0.5 $^c$</td>
<td></td>
<td>8.0</td>
<td>(Moraillon and Pinault 1978)</td>
</tr>
<tr>
<td></td>
<td>75–300 $^c$, $^d$</td>
<td></td>
<td>1200–4800</td>
<td>(Fitzwater and Prakash 1973)</td>
</tr>
<tr>
<td>Human, <em>Homo sapiens</em></td>
<td>1–30 $^a$</td>
<td>70</td>
<td>70–2100</td>
<td>(Gratz 1973)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(Fitzwater and Prakash 1973)</td>
<td></td>
</tr>
<tr>
<td><strong>Native mammals</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brushtail possum, <em>Trichosurus vulpecula</em></td>
<td>22.4 $^a$</td>
<td>3.5</td>
<td>78.4</td>
<td>(Bell 1972)</td>
</tr>
<tr>
<td><strong>Introduced birds</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chicken, <em>Gallus gallus domesticus</em></td>
<td>5.0 $^a$</td>
<td>2.8</td>
<td>14</td>
<td>(Buck 1978)</td>
</tr>
<tr>
<td></td>
<td>18.5–30.0 $^c$</td>
<td></td>
<td>51.8–84</td>
<td>(Heinekamp 1925)</td>
</tr>
<tr>
<td></td>
<td>30–40 $^a$</td>
<td></td>
<td>84–112</td>
<td>(Fitzwater and Prakash 1973)</td>
</tr>
<tr>
<td>Mallard duck, <em>Anas platyrhynchos</em></td>
<td>2.9 $^b$</td>
<td>1.2</td>
<td>3.5</td>
<td>(Tucker and Haegele 1971)</td>
</tr>
<tr>
<td>Ring-necked pheasant, <em>Phasianus colchicus</em></td>
<td>24.7 $^b$</td>
<td>1.2</td>
<td>29.6</td>
<td>(Tucker and Haegele 1971)</td>
</tr>
<tr>
<td>Domestic pigeon, <em>Columba livia</em></td>
<td>8–11 $^b$</td>
<td>0.27</td>
<td>2.2–3.0</td>
<td>(Fitzwater and Prakash 1973)</td>
</tr>
<tr>
<td></td>
<td>7.7–21.3 $^b$</td>
<td></td>
<td>2.1–5.8</td>
<td>(Tucker and Haegele 1971, Schafer and Eschen 1986)</td>
</tr>
<tr>
<td></td>
<td>30 $^c$</td>
<td></td>
<td>8.1</td>
<td>(Heinekamp 1925)</td>
</tr>
<tr>
<td>English sparrow, <em>Passer domesticus</em></td>
<td>4.2 $^b$</td>
<td>0.03</td>
<td>0.12</td>
<td>(Tucker and Haegele 1971)</td>
</tr>
<tr>
<td></td>
<td>7.4 $^a$</td>
<td></td>
<td>0.22</td>
<td>(Bird 1995)</td>
</tr>
<tr>
<td>Starling, <em>Sturnus vulgaris</em></td>
<td>&lt;5.0 $^c$</td>
<td>0.07</td>
<td>0.35</td>
<td>(Schafer 1972)</td>
</tr>
</tbody>
</table>

$^a$ Form not stated, $^b$ Alkaloid, $^c$ Sulphate, $^d$ Hydrochloride.
Table 15. The sensitivity to 1080 for a range of species expressed as the oral median lethal dose (LD₅₀). The amount of 1080 is calculated using the average male body weights derived from (McIlroy 1984, Strahan 1991). Species from areas containing fluoroacetate-bearing plants are indicated with an “*”.

<table>
<thead>
<tr>
<th>Species</th>
<th>LD₅₀ (mg/kg)</th>
<th>Av body weight (kg)</th>
<th>1080 Amount for LD₅₀ (mg)</th>
<th>Reference (LD₅₀ data)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Introduced mammals</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mouse, <em>Mus musculus</em></td>
<td>8.33</td>
<td>0.02</td>
<td>0.17</td>
<td>(McIlroy 1982b)</td>
</tr>
<tr>
<td>Brown rat, <em>Rattus norvegicus</em> (lab. strain)</td>
<td>1.71–2.5</td>
<td>0.32</td>
<td>0.55–0.8</td>
<td>(Kalmbach 1945, McIlroy 1982b)</td>
</tr>
<tr>
<td>Brown rat, <em>Rattus norvegicus</em> (wild strain)</td>
<td>0.22–5.0</td>
<td>0.32</td>
<td>0.07–1.6</td>
<td>(Kalmbach 1945, Dieke and Richter 1946)</td>
</tr>
<tr>
<td>Black rat, <em>Rattus rattus</em></td>
<td>0.1–0.76</td>
<td>0.28</td>
<td>0.03–0.22</td>
<td>(Kalmbach 1945, McIlroy 1982b)</td>
</tr>
<tr>
<td>Rabbit, <em>Oryctolagus cuniculus</em></td>
<td>0.34–0.50</td>
<td>1.6</td>
<td>0.54–0.8</td>
<td>(Lazarus 1956, McIlroy 1982a)</td>
</tr>
<tr>
<td>Sheep, <em>Ovis aries</em></td>
<td>0.25–0.52</td>
<td>50</td>
<td>12.5–26</td>
<td>(Meldrum et al. 1957, Annison et al. 1960, McIlroy 1982a)</td>
</tr>
<tr>
<td>Goat, <em>Capra hircus</em></td>
<td>0.6–0.7 IM</td>
<td>58</td>
<td>34.8–40.6</td>
<td>(Chenoweth and Gilman 1946, Ward 1946)</td>
</tr>
<tr>
<td>Cattle, <em>Bos primigenius</em></td>
<td>0.22–0.39</td>
<td>500</td>
<td>110–195</td>
<td>(Robinson 1970)</td>
</tr>
<tr>
<td>Horse, <em>Equus ferus caballus</em></td>
<td>0.35–1.0</td>
<td>700</td>
<td>245–700</td>
<td>(Ward 1946, Tucker and Crabtree 1970, Tomlinson and Gooding 1971)</td>
</tr>
<tr>
<td>Pig, <em>Sus scrofa</em></td>
<td>1–1.04</td>
<td>70</td>
<td>70–72.8</td>
<td>(McIlroy 1983a)</td>
</tr>
<tr>
<td>Cat, <em>Felis catus</em></td>
<td>0.07–0.49</td>
<td>5.0</td>
<td>0.35–2.4</td>
<td>(McIlroy 1981b, Eason and Frampton 1991)</td>
</tr>
<tr>
<td>Fox, <em>Vulpes vulpes</em></td>
<td>c. 0.15</td>
<td>6.5</td>
<td>0.98</td>
<td>(McIlroy and King 1990)</td>
</tr>
<tr>
<td>Dog, <em>Canis lupus familiaris</em></td>
<td>0.06–0.35</td>
<td>16.0</td>
<td>0.96–5.6</td>
<td>(Meldrum et al. 1957, Annison et al. 1960, McIlroy 1982a)</td>
</tr>
<tr>
<td><strong>Native mammals</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fat-tailed dunnart, <em>Smiththopsis crassicaudata</em></td>
<td>2.06</td>
<td>0.015</td>
<td>0.03</td>
<td>(McIlroy 1981b)</td>
</tr>
<tr>
<td>Brown antechinus, <em>Antechinus stuartii</em></td>
<td>1.85</td>
<td>0.035</td>
<td>0.06</td>
<td>(McIlroy 1981b)</td>
</tr>
<tr>
<td>Bush rat, <em>Rattus fuscipes</em></td>
<td>1.13</td>
<td>0.125</td>
<td>0.14</td>
<td>(McIlroy 1982b)</td>
</tr>
<tr>
<td>Bush rat, <em>Rattus fuscipes</em> *</td>
<td>36–40</td>
<td>0.125</td>
<td>4.5–5.0</td>
<td>(Oliver et al. 1977, King et al. 1978)</td>
</tr>
<tr>
<td>Brushtail possum, <em>Trichosurus vulpecula</em></td>
<td>0.47–0.79</td>
<td>3.5</td>
<td>1.6–2.8</td>
<td>(Bell 1972, McIlroy 1982a)</td>
</tr>
<tr>
<td>Brushtail possum, <em>Trichosurus vulpecula</em> *</td>
<td>&gt; 100</td>
<td>3.5</td>
<td>&gt;350</td>
<td>(Oliver et al. 1977, King et al. 1978)</td>
</tr>
<tr>
<td>Brown bandicoot, <em>Isoodon obesulus</em></td>
<td>c. 7</td>
<td>0.85</td>
<td>6.0</td>
<td>(McIlroy 1983b)</td>
</tr>
<tr>
<td>Brown bandicoot, <em>Isoodon obesulus</em> *</td>
<td>20</td>
<td>0.85</td>
<td>17</td>
<td>(Twigg and King 1991)</td>
</tr>
<tr>
<td>Long-nosed bandicoot, <em>Perameles nasuta</em></td>
<td>7.70</td>
<td>0.98</td>
<td>7.5</td>
<td>(McIlroy 1981b, 1983b)</td>
</tr>
<tr>
<td>Common wombat, <em>Vombatus ursinus</em></td>
<td>0.2</td>
<td>26</td>
<td>5.2</td>
<td>(McIlroy 1982a)</td>
</tr>
<tr>
<td>Agile wallaby, <em>Macropus agilis</em> *</td>
<td>0.2</td>
<td>19</td>
<td>3.8</td>
<td>(Oliver et al. 1977)</td>
</tr>
<tr>
<td>Eastern grey kangaroo, <em>Macropus giganteus</em></td>
<td>0.1–0.35</td>
<td>40</td>
<td>4–14</td>
<td>(McIlroy 1982a)</td>
</tr>
<tr>
<td>Red kangaroo, <em>Macropus rufus</em></td>
<td>2.0</td>
<td>37</td>
<td>74</td>
<td>(King et al. 1978)</td>
</tr>
<tr>
<td>Species</td>
<td>LD₅₀ (mg/kg)</td>
<td>Av body weight (kg)</td>
<td>1080 Amount for LD₅₀ (mg)</td>
<td>Reference (LD₅₀ data)</td>
</tr>
<tr>
<td>---------------------------------------------</td>
<td>--------------</td>
<td>---------------------</td>
<td>---------------------------</td>
<td>--------------------------------------------</td>
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<tr>
<td>Northern quoll, <em>Dasyurus hallucatus</em></td>
<td>5.66</td>
<td>0.7</td>
<td>4.0</td>
<td>(McIlroy 1981b)</td>
</tr>
<tr>
<td>Spotted-tail quoll, <em>Dasyurus maculatus</em></td>
<td>1.85</td>
<td>5.0</td>
<td>9.3</td>
<td>(McIlroy 1981b)</td>
</tr>
<tr>
<td>Dingo, <em>Canis familiaris dingo</em></td>
<td>0.11</td>
<td>16.0</td>
<td>1.8</td>
<td>(McIlroy 1981b)</td>
</tr>
<tr>
<td><strong>Introduced Birds</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chicken, <em>Gallus gallus domesticus</em></td>
<td>5.9–10</td>
<td>2.8</td>
<td>16.5–28</td>
<td>(Kalmbach 1945, Ward and Spencer 1947, Tomlinson and Gooding 1971)</td>
</tr>
<tr>
<td>Domestic pigeon, <em>Columba livia</em></td>
<td>2.5–9.0</td>
<td>0.27</td>
<td>0.68–2.4</td>
<td>(Ward and Spencer 1947, Tomlinson and Gooding 1971, Tucker and Haegele 1971)</td>
</tr>
<tr>
<td>English sparrow, <em>Passer domesticus</em></td>
<td>3.00</td>
<td>0.03</td>
<td>0.09</td>
<td>(Tucker and Crabtree 1970, Tucker and Haegele 1971)</td>
</tr>
<tr>
<td><strong>Native Birds</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Australian magpie-lark, <em>Grallina cyanoleuca</em></td>
<td>8.83</td>
<td>0.95</td>
<td>8.4</td>
<td>(McIlroy 1984)</td>
</tr>
<tr>
<td>Australian magpie, <em>Gymnorhina tibicen</em></td>
<td>9.93</td>
<td>0.32</td>
<td>3.2</td>
<td>(McIlroy 1984)</td>
</tr>
<tr>
<td>Pied currawong, <em>Strepera graculina</em></td>
<td>13.09</td>
<td>0.31</td>
<td>4.1</td>
<td>(McIlroy 1984)</td>
</tr>
<tr>
<td>Pacific black duck, <em>Anas superciliosa</em></td>
<td>18.91</td>
<td>0.98</td>
<td>18.5</td>
<td>(McIlroy 1984)</td>
</tr>
<tr>
<td>Wood duck, <em>Chenonetta jubata</em></td>
<td>12.6</td>
<td>0.74</td>
<td>9.3</td>
<td>(McIlroy 1984)</td>
</tr>
<tr>
<td>Galah, <em>Cacatua roseicapilla</em></td>
<td>5.53</td>
<td>0.33</td>
<td>1.8</td>
<td>(McIlroy 1984)</td>
</tr>
<tr>
<td>Kookaburra, <em>Dacelo novaeguineae</em></td>
<td>c. 6.0</td>
<td>0.28</td>
<td>1.7</td>
<td>(McIlroy 1984)</td>
</tr>
<tr>
<td>Australian raven, <em>Corvus bennetti</em></td>
<td>c. 5.1</td>
<td>0.61</td>
<td>3.1</td>
<td>(McIlroy 1984)</td>
</tr>
<tr>
<td>Little crow, <em>Corvus bennetti</em></td>
<td>13.37</td>
<td>0.39</td>
<td>5.2</td>
<td>(McIlroy 1984)</td>
</tr>
<tr>
<td>Black kite, <em>Milvus migrans</em></td>
<td>18.51</td>
<td>0.59</td>
<td>10.9</td>
<td>(McIlroy 1984)</td>
</tr>
<tr>
<td>Emu, <em>Dromaius novaehollandiae</em></td>
<td>c. 278</td>
<td>26.5</td>
<td>7,367</td>
<td>(McIlroy 1984)</td>
</tr>
<tr>
<td><strong>Amphibians and reptiles</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spotted grass frog, <em>Limnodynastes tasmaniensis</em></td>
<td>c. 60</td>
<td>0.01</td>
<td>0.6</td>
<td>(McIlroy et al. 1985)</td>
</tr>
<tr>
<td>Bearded dragon, <em>Pogona barbata</em></td>
<td>&lt;110</td>
<td>475</td>
<td>&lt;52250</td>
<td>(McIlroy et al. 1985)</td>
</tr>
<tr>
<td>Blotched blue tongue lizard, <em>Tiliqua nigrolutea</em></td>
<td>336.4</td>
<td>0.75</td>
<td>252</td>
<td>(McIlroy et al. 1985)</td>
</tr>
<tr>
<td>Sand goanna, <em>Varanus gouldii</em></td>
<td>43.6–50</td>
<td>5</td>
<td>218–250</td>
<td>(McIlroy et al. 1985)</td>
</tr>
<tr>
<td>Lace monitor, <em>Varanus varius</em></td>
<td>100–119</td>
<td>4.3</td>
<td>430–512</td>
<td>(McIlroy et al. 1985)</td>
</tr>
<tr>
<td>Fish</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rainbow trout, <em>Oncorhynchus mykiss</em></td>
<td>50</td>
<td>–</td>
<td>–</td>
<td>(Bauermeister et al. 1977)</td>
</tr>
</tbody>
</table>
### PAPP

Table 16. The sensitivity to PAPP for a range of species expressed as the oral median lethal dose (LD50). The amount of PAPP is calculated using the average male body weights derived from (McIlroy 1984, Strahan 1991).

<table>
<thead>
<tr>
<th>Species</th>
<th>LD50 (mg/kg)</th>
<th>Av body weight (kg)</th>
<th>PAPP Amount for LD50 (mg)</th>
<th>Reference (LD50 data)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Introduced mammals</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mouse, <em>Mus musculus</em></td>
<td>168-233</td>
<td>0.02</td>
<td>3.4-4.7</td>
<td>(Pan et al. 1983, Savarie et al. 1983)</td>
</tr>
<tr>
<td>Brown rat, <em>Rattus norvegicus</em></td>
<td>144</td>
<td>0.32</td>
<td>46.1</td>
<td>(Scawin et al. 1984)</td>
</tr>
<tr>
<td>Ferret, <em>Mustela putorius furo</em></td>
<td>15.5</td>
<td>2.0</td>
<td>0.54–0.80</td>
<td>(NWR 2006)</td>
</tr>
<tr>
<td>Stoat, <em>Mustela erminea</em></td>
<td>9.3</td>
<td>0.4</td>
<td>3.7</td>
<td>(Pan et al. 1983, Savarie et al. 1983, Scawin et al. 1984)</td>
</tr>
<tr>
<td>Cat, <em>Felis catus</em></td>
<td>5.6</td>
<td>5.0</td>
<td>28</td>
<td>(Fisher and O’Connor 2007)</td>
</tr>
<tr>
<td>Fox, <em>Vulpes vulpes</em></td>
<td>&lt;25.2</td>
<td>6.5</td>
<td>&lt;164</td>
<td>(McIlroy and King 1990)</td>
</tr>
<tr>
<td><strong>Native mammals</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fat-tailed dunnart, <em>Smiththopsis crassicaudata</em></td>
<td>105a</td>
<td>0.015</td>
<td>1.6</td>
<td>(NWR 2006)</td>
</tr>
<tr>
<td>Brown antechinus, <em>Antechinus stuartii</em></td>
<td>&gt;571a</td>
<td>0.035</td>
<td>&gt;20.0</td>
<td>(NWR 2006)</td>
</tr>
<tr>
<td>Bush rat, <em>Rattus fuscipes</em></td>
<td>697a</td>
<td>0.125</td>
<td>87.1</td>
<td>(NWR 2006)</td>
</tr>
<tr>
<td>Brushtail possum, <em>Trichosurus vulpecula</em></td>
<td>&gt;500</td>
<td>3.5</td>
<td>&gt;1750 2153</td>
<td>(Fisher et al. 2008)</td>
</tr>
<tr>
<td>Brown bandicoot, <em>Isoodon obesulus</em></td>
<td>6.4a</td>
<td>0.85</td>
<td>5.4</td>
<td>(NWR 2006)</td>
</tr>
<tr>
<td>Tammar wallaby, <em>Macropus eugenii</em></td>
<td>89</td>
<td>5</td>
<td>445</td>
<td>(Fisher et al. 2008)</td>
</tr>
<tr>
<td>Tasmanian devil, <em>Scarophilus harrisii</em></td>
<td>120a</td>
<td>8</td>
<td>960</td>
<td>(NWR 2006)</td>
</tr>
<tr>
<td>Spotted-tail quoll, <em>Dasyurus maculatus</em></td>
<td>24.8a</td>
<td>5.0</td>
<td>124</td>
<td>(NWR 2006)</td>
</tr>
<tr>
<td>Dingo, <em>Canis familiaris dingo</em></td>
<td>8.5a</td>
<td>16.0</td>
<td>136</td>
<td>(NWR 2006)</td>
</tr>
<tr>
<td><strong>Introduced Birds</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mallard duck, <em>Anas platyrhynchos</em></td>
<td>32-38</td>
<td>1.2</td>
<td>38.4-45.6</td>
<td>(Fisher et al. 2008, Eason et. Al. 2010)</td>
</tr>
<tr>
<td>Starling, <em>Sturnus vulgaris</em></td>
<td>&gt;306</td>
<td>0.07</td>
<td>22.1</td>
<td>(Savarie et. al. 1083)</td>
</tr>
<tr>
<td><strong>Native Birds</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Australian magpie, <em>Gymnorhina tibicen</em></td>
<td>9.93</td>
<td>0.32</td>
<td>3.2</td>
<td>(McIlroy 1984)</td>
</tr>
<tr>
<td>Little Australian raven, <em>Corvus coronoides</em></td>
<td>130a</td>
<td>0.61</td>
<td>79.3</td>
<td>(NWR 2006)</td>
</tr>
<tr>
<td>Silver gull, <em>Larus coronoides</em></td>
<td>1000a</td>
<td>0.29</td>
<td>&gt;290</td>
<td>(NWR 2006)</td>
</tr>
<tr>
<td><strong>Amphibians and reptiles</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rosenberg’s goanna, <em>Varanus rosenbergis</em></td>
<td>100–119</td>
<td>4.3</td>
<td>430–512</td>
<td>(McIlroy et al. 1985)</td>
</tr>
</tbody>
</table>

A calculated 80% increase in methaemoglobin concentrate which was found to strongly correlate with LD50 values (NWR 2006)
Appendix J – Local Land Service - Pesticide compliance and audit procedures

Example forms for landholder consent, bait collection and baiting notification

CONSENT FORM RE USE OF ‘1080’ POISON WILD DOG BAITS
POISON LAID BY THE AGENCY

I__________________________________________
(Print Name)
Of________________________________________________________
(Residential Address)

Being owner/occupier of the property known as __________________________________________________________
(Property Address)

with Holding Reference # _______________________ do hereby consent to an officer of the North Coast Local Land Services being ___________________________,
(NC LLS Officer)

laying ‘1080’poisoned bait material on that portion of the property described hereunder.

I agree to indemnify and keep indemnified at all times the North Coast Local Land Services, its Board, its Directors, Officers, Servants and Agents against all actions, proceedings, claims, demands, costs and expenses whatsoever in respect of injury to any person, loss of any animal or any other loss whatsoever which may have occurred in the use by me and/or my agents or employees of ‘1080’ poison bait material

Description of Area:
Property Name: ________________________________

Description of Property/paddock name/whole property: __________________________________________________________
________________________________________________________________________

Area being baited:__________________ Number of baits used:____________________

My nominee (if applicable):___________________________________

Dated this __________________ day of ______________________ 20____

Signature of owner/occupier __________________________________________

Witness _________________________________________

☐ Pesticide Control Order issued and read by the owner/occupier of the property.

☐ Signs issued

Office Use Only

FARMS ☐ 1080 Register ☐
NOMINATED PERSON and AUTHORISED AGENT FORM

Authorisation
I, __________________________ of ______________________________________
(Print Name) (Resident Address)
authorise _________________________ of ___________________________________
(Print Name) (Resident Address)
to act as my nominated person/authorised agent* and collect and lay* 1080 baits from the North
Coast Local Land Services on my behalf.

Signed____________________________________ Date _____________________

Chemical Qualification
Owner ☐ The owners chemical card will be used
Other ☐ Please complete the following details

Name _________________________________________ Card Type ______________
Card # __________________ Expiry Date ______________

Property Details
Property Owner: __________________________________________________________
Property Name: ___________________________________________________________
Property Address: __________________________________________________________
Area to be baited: ______________________ Reference #: ____________________
Names of Neighbours within 1km of property being baited: ______________________
________________________________________________________________________

*Strike out as required
Wild Dog Baiting Notification

This notification is to advise all landholders within 1 kilometre of ‘Owners Name’ property, ‘Property name’ & ‘Property Address’, that 1080 wild dog bait’s will be laid on the above mentioned property from the ___/__/___ to ___/__/___ Ongoing program (Delete if not applicable)

Property owners are warned to keep their domestic pet dogs and cats confined to their property. 1080 poisoned baits will be laid in accordance with Pesticide Control (1080 Liquid Concentrate & Bait Products) Order 2017 under Section 38 Pesticides Act 1999. Additional requirements may be imposed by NCLLS.

For further information contact: (Person who lay’s baits name and contact number, as per pco)
Name and contact for ACO can be added if required.

Wild Dog Baiting Notification

This notification is to advise all landholders within 1 kilometre of ‘Owners Name’ property, ‘Property name’ & ‘Property Address’, that 1080 wild dog bait’s will be laid on the above mentioned property from the ___/__/___ to ___/__/___ Ongoing program (Delete if not applicable)

Property owners are warned to keep their domestic pet dogs and cats confined to their property. 1080 poisoned baits will be laid in accordance with Pesticide Control (1080 Liquid Concentrate & Bait Products) Order 2017 under Section 38 Pesticides Act 1999. Additional requirements may be imposed by NCLLS.

For further information contact: (Person who lay’s baits name and contact number as per pco)
Name and contact for ACO can be added if required.
Pesticide audit and compliance procedures for LLS

1.0 Introduction

Compliance by LLS with the pesticides legislation is critical for the ongoing storage and supply of pesticides to land managers to enable effective management of pests in NSW. Each LLS Region must undertake audits of pesticides in accordance with the Vertebrate Pest Manual. The 1080 Supervisor is responsible for the audits unless otherwise delegated.

There are audit tools to assist each region ensure they are maintaining a high level of compliance for each pesticide they handle. These tools include a chemical audit checklist that is site based, an Authorised Control Officer (ACO) audit check list that is done on the individual ACOs and an aerial baiting audit checklist for relevant regions.

Chemical site audits are to be undertaken on a biennial basis or when any additional new pesticides are stored at a site. This covers essential and recommended elements for storage and systems to manage chemicals/pesticides at each storage/distribution facility.

2.0 Audit Frequency and Sample Size

All ACOs must have their Restricted Chemical Product balances audited biannually. A full audit using the attached audit tools must be completed on a sample of ACOs each calendar year. To minimise risk, all ACO’s must be audited in the first audit year of each LLS Region. In the second audit year, a minimum sample size of 30% of ACO’s shall be audited. However, it should be noted the EPA expects that in all audit years post the initial year, where there are audit failures and high numbers of new ACOs that in excess of 30% of the total number of ACOs that he percentage audited be increased to whatever level is required to ensure all such persons are audited. The sample size shall be selected by the Team Leader ISPH (or equivalent) in consultation with their Manager Biosecurity and Emergency Services (or equivalent). The 30% sample may include any new ACO’s, high risk ACO’s (high risk to be determined regionally but consecutive audit failures would be considered high risk, or any EPA reportable failure, as a guide). If regional resources allow, all ACO’s can be audited each year, but the 30% remains the minimum standard to provide consistency across the State.

If a Team Leader ISPH issues poisons to an end user from their own register, they must be subject to an audit by a Team Leader ISPH (or equivalent) from a neighbouring Region.

Audits will cover all processes that must or should be followed in legislation or policy/guidelines when supplying or using pesticides and be audited against any approved Standard Operating Procedures (SOPs).

3.0 Chemical Site Audit

This is a physical inspection for compliance with pesticides or WHS legislation and LLS policy and procedures of:

- the chemical storage facilities and surrounds
- the requirements for storage of chemicals (including administrative)
- the materials and equipment used within the facilities.
Complete the LLS chemical audit form.

**Part A**

All “essential” items must be complied with if they are relevant for chemicals on hand or normally stored at the site.

**Part B**

Answer Yes/NA/No for all elements.

Comment – note any concerns or remarks relating to each element (can be positive or negative)

Recommendation – these recommendations must be implemented unless other alternatives are agreed through consultation. Outcome must be compliant.

**4.0 ACO Audit (using the ACO audit spreadsheets)**

**4.1 Poisons audit**

Audit all pesticides on hand.

Check the most recent indemnities are in the appropriate poisons register (ACO to enter any indemnities not already entered). If there are indemnity forms from more than 24 hours previous, the ACO is non-compliant and details to be entered on Sheet 3.0 FARMS – 1080 issued sheet (lines 16 & 17) in addition to those checks.

Measure the quantities on hand and enter in the registers. Use the scales that are used by the ACOs at the site.

Complete the “Poisons audit” spreadsheet.

If the vaccination gun is set up for 1080 injections check it is calibrated correctly (this may explain a variance). Check with ACO that it was calibrated prior to use.

Variation – This will differ depending on the number and type of bait being prepared. The greater the quantity of rabbit and pig bait the smaller the % should be. The key issue to check is if the variation is consistent when doing each type of bait regardless of it being a self-audit or a supervisor audit.

**4.2 Indemnity Forms (1080)**

Randomly select 30 indemnity forms for each ACO to audit against the “2.0 - indemnity” spreadsheet. (If ACOs share registers and books 50/2, 75/3, 100/4 ensuring samples from all ACOs).

Points to note

- The indemnity form must have every section completed at the time of supply of the 1080.
- Check for evidence the indemnity forms have had information added or altered.
- A common problem is the 1st section and getting the authorised user and agents names in the correct places

Complete yes or no for the lines 3 to 28.

If NO to any line, copy these forms and circle non-compliance as evidence.

Bring up the holding in SIX Maps or another mapping system with holding boundaries and satellite imagery.

Complete No or the RA number for 29
If No to 30, copy and attach copy of RA to indemnity.

Complete Yes or No for the lines 31 to 35

If NO to 31 or 33, screen shot map, identify points of concern and attach to indemnity

Complete any comments on how the form was completed eg. partially illegible

4.3 FARMS – 1080 issued

Randomly select 30 entries from each ACOs 1080 register to audit against the “3.0 - 1080 issue” spreadsheet. These should be from across the period since the last supervisor audit (may be the same bait issued that match 2.0 Indemnity audit). It is preferable to have a mix of bait types. (If ACOs share registers and books 50/2, 75/3, 100/4 ensuring samples from all ACOs)

Record Issue ID# and Indemnity #

Check all information in compulsory fields in FARMS (shaded in spreadsheet) is a reflection of the indemnity form

Check non-compulsory fields are complete and reflect the indemnity form.

If NO to any field 5 - 14, screen shot the section in FARMS, take a copy of the indemnity form and mark the sections of non-compliance or don’t reflect the same information.

Line 16 & 17 - Select 10 of the 30 1080 issued (preferably from mid month or random) and email “Issued ID #” to the service desk and CC Chris Ryan requesting the actual date and time the entry was made in FARMS. Check the actual entry date against issue date. (If ACOs share registers and books 18/2, 25/3, 30/4 ensuring samples from all ACOs)

From the report received from the service desk (Chris Ryan) check the actual date and time entered. If it is outside 24 hours (the next day) it is non-compliant unless the ACO has not been able to attend the office prior to the entry or there have been IT problems.

4.4 Property Risk Assessment

Randomly select 15 property risk assessment forms for each ACO to audit against the “4.0 - Property RAs” spreadsheet.

Insert details in fields 3 - 7

Bring up the holding in SIX Maps or another system with holding boundaries and satellite imagery.

Complete yes, no or NA for the lines 8 to 43.

If NO to any field 19 – 39 & 41, or YES to 40 take a copy of the RA form, satellite imagery and indemnity form.

4.5 Group Risk Assessment

Randomly select 5 group risk assessment forms for each ACO to audit against the “5.0 - Group RAs” spreadsheet.

Complete lines 3 – 6

Bring up the group area in SIX Maps or another system with holding boundaries and satellite imagery.

Complete yes, no or NA for the lines 7 to 42.

If NO to any field 19 – 38, & 40, or YES to 39 take a copy of the RA form, satellite imagery and indemnity form.
4.6 Indemnity Forms (other poisons) (select from various poisons where possible)

Randomly select 30 indemnity forms for each ACO to audit against the “6.0 - indemnity” spreadsheet. (If ACOs share registers and books 50/2, 75/3, 100/4 ensuring samples from all ACOs).

Copy these indemnity forms if there is non-compliance with any sections.

Points to note
- The form must have every section completed at the time of supply of the 1080.
- Check for evidence the forms have had information added or altered.
- A common problem is the 1st section and getting the authorised user and agents names in the correct places.

Complete yes or no for the lines 4 to 26.

If NO to any line 4 to 21, copy these forms and circle non-compliance as evidence.

Bring up the holding in SIX Maps or another system with holding boundaries and satellite imagery.

Complete No or the RA number for 22.

If No to 23, 24, screen shot map, identify points of concern and attach to indemnity.

Complete any comments on how the form was completed eg. partially illegible.

4.7 FARMS – other poisons issued (select from various poisons where possible)

Randomly select 30 other poisons issued from each ACOs register to audit against the “other poisons issue” spreadsheet. (If ACOs share registers and books 50/2, 75/3, 100/4 ensuring samples from all ACOs).

Record Issue ID# and Indemnity #

Check all information in compulsory fields in FARMS (shaded in spreadsheet) is a reflection of the indemnity form.

Check non-compulsory fields are complete and reflect the indemnity form.

If NO to any field 5 - 14, screen shot the section in FARMS, take a copy of the indemnity form and mark the sections of non-compliance or don’t reflect the same information.

Line 16 & 17 - Select 10 of the 30 other poisons issued (preferably from mid month or randomly) and email “Issued ID #” to the service desk and CC Chris Ryan requesting the actual date and time the entry was made in FARMS. Check the actual entry date against issue date. (If ACOs share registers and books 18/2, 25/3, 30/4 ensuring samples from all ACOs).

4.8 LLS bait use (when LLS staff lay bait on any land)

In the poisons issued section of FARMS check for LLS staff members being supplied pesticides. If it is not their property audit the process for up to 15 lots of baits supplied to staff. Prioritise ACOs ahead of other LLS staff.

To find these names in the poison issued section of FARMS click on the “issued to” heading and the system will put the names in alphabetical order by first name. Scroll and look for staff names.

If Yes to line 4 – must complete 6 – 9
If Yes in line 5 – non-compliance unless written approval from supervisor
If Yes to line 11 – must complete 12 – 14
5.0 Aerial Baiting Audit

Aerial baiting audits are a staged audit to be undertaken through the application process and upon completion.

Stage 1 – pre program on application submitted by ACO to Team Leader. Audit completed by Team Leader or equivalent on receipt of application from ACO. This is an audit to review the content of the initial aerial baiting application.

Stage 2 – pre program on application submitted by TL to GM. Audit completed by General Manager upon application from Team Leader. This is an audit to review the content of the aerial baiting application.

Stage 3 – pre program completed on application submitted by LLS Region for approval to ESU. Audit undertaken by ESU approver/auditor.

Stage 4 – post program completed by Team Leader within 3 weeks of the completion of the aerial baiting program. This is an audit to review the approvals and post program results to ensure implementation reflects the approved program and chemical records reflect the current legislation requirements and LLS guidelines.

Pre-program:

Obtain a copy of all aerial baiting applications including maps of the proposed program and complete rows 02 to 04 sheet 9.0 Aerial Baiting on the ACO audit template spreadsheet. Enter yes/no to rows 5 to 8. If no to 5, 7 or 8 make a copy and mark non-compliant. If no to 6 skip 7 & 8.

Enter the group risk assessment number for row 9. If no risk assessment flag as noncompliant

Answer yes/no/unsure to row 10. If no or unsure, take a screenshot of the area of concern and conduct further investigation with the ACO that signed the application. Include investigation findings in the ‘comments’ section at the bottom of the spreadsheet.

Open a copy of the proposed aerial baiting lines on Google Earth or other GIS program with property boundaries and a satellite image as a background and answer yes/no to rows 11 to 21/23. If no to any row, mark non-compliant and application requires amendments prior to approval.

Post-program:

Answer yes/no to rows 25 to 31. If no to any row, make a copy and mark non-compliant.

Using ArcGIS (or equivalent software), open the aerial baiting actual bait lines (supplied by contracted aircraft company) and perform a selection request to select all properties (including public lands) where the proposed bait lines intersected the property boundary. Generate a table and compare to the table listed on the application. Complete row 32. If yes to this row, take a copy and mark non-compliant.

Answer yes/no to rows 34 to 37. If no to any row, make a copy and mark as non-compliant.

6.0 Corrective Action Reports

Following any ACO audit where issues of non-compliance are recorded, a Corrective Action Report for each ACO is mandatory. The CAR shall be completed by the Auditor (Team Leader ISPH) and signed off by the MBES. The CAR allows for follow up action to be recorded and formally followed up to ensure LLS minimises the potential for repeat non-compliance.
### Reportable offences - ACOs

#### 3.0 Poison audit

<table>
<thead>
<tr>
<th>Spreadsheet column</th>
<th>Description of offence</th>
<th>Offence origin</th>
<th>Action 1080 supervisor</th>
<th>Action Manager</th>
<th>Action EPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Column C</td>
<td>Not entering poison records within 24 hours</td>
<td>VPM</td>
<td>Record in part 3.0 - 1080 issued audit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Column G</td>
<td>1080 supervisor audit not representative of product on hand - variance of less than 5% (majority fox and wild dog baiting) or 2% (majority rabbit and pig baiting) of the total product used from the most recent audit is acceptable</td>
<td>LLS Guideline</td>
<td>1st &amp; 2nd audit - written warning and training</td>
<td>subsequent audit offences</td>
<td></td>
</tr>
<tr>
<td>Column O</td>
<td>Not completing a monthly audit within 3 working days of the beginning of the month (note – check &amp; allow for staff leave)</td>
<td>VPM</td>
<td>1st &amp; 2nd audit offence, or less than 20% of months in subsequent audits written warning</td>
<td>If greater than 20% of months in 3rd and subsequent audits</td>
<td></td>
</tr>
<tr>
<td>Column Q</td>
<td>ACO transfer records do not match source or destination – accurate record keeping</td>
<td>VPM</td>
<td>1st audit</td>
<td>2nd audit &gt;2 offences 3rd &amp; subsequent audits &gt;2 offences</td>
<td>3rd &amp; subsequent audits &gt;2 offences</td>
</tr>
<tr>
<td>Column R</td>
<td>Not completing register transfers of product into, within LLS or between LLS regions within 24 hours of the physical transfer</td>
<td>VPM</td>
<td>1st audit</td>
<td>2nd audit &gt;2 offences 3rd &amp; subsequent audits &lt;3 offences</td>
<td>3rd &amp; subsequent audits &gt;2 offences</td>
</tr>
<tr>
<td>Column S</td>
<td>If spillage recorded, diary records do not match FARMS record</td>
<td>LLS guideline</td>
<td>1st offence written warning</td>
<td>2nd and subsequent offences</td>
<td></td>
</tr>
<tr>
<td>Column T</td>
<td>Spill not reported to 1080 supervisor</td>
<td>VPM</td>
<td>1st offence written warning</td>
<td>2nd and subsequent offences</td>
<td></td>
</tr>
<tr>
<td>Column U</td>
<td>Significant spill not reported to LG or EPA</td>
<td>VPM</td>
<td>1st offence written warning</td>
<td>2nd and subsequent offences</td>
<td></td>
</tr>
<tr>
<td>Column V</td>
<td>If long term absence (greater than 6 weeks), check transfer to other ACO</td>
<td>LLS Guideline</td>
<td>1st offence written warning</td>
<td>2nd and subsequent offences</td>
<td></td>
</tr>
</tbody>
</table>
### 4.1 Indemnity 1080 & PAPP

<table>
<thead>
<tr>
<th>Spreadsheet line</th>
<th>Description of offence</th>
<th>Offence origin</th>
<th>Action 1080 supervisor</th>
<th>Action Manager</th>
<th>Action EPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Line 4</td>
<td>Incomplete indemnity forms or indemnities with incorrect information</td>
<td>PCO 3.5</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; audit, written warning + training</td>
<td>2&lt;sup&gt;nd&lt;/sup&gt; &amp; subsequent audits &gt; 1 offence</td>
<td></td>
</tr>
<tr>
<td>Line 5</td>
<td>Incomplete indemnity forms or indemnities with incorrect information</td>
<td>PCO 3.5</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; audit, written warning + training</td>
<td>2&lt;sup&gt;nd&lt;/sup&gt; &amp; subsequent audits &gt; 1 offence</td>
<td></td>
</tr>
<tr>
<td>Line 5</td>
<td>Issuing 1080 product for use by an unqualified/trained person</td>
<td>PCO 3.9</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; audit, written warning + training</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; &amp; subsequent offences</td>
<td></td>
</tr>
<tr>
<td>Lines 6, 9</td>
<td>Incomplete indemnity form</td>
<td>PCO 3.5</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; &amp; 2&lt;sup&gt;nd&lt;/sup&gt; audit - written warning</td>
<td>3&lt;sup&gt;rd&lt;/sup&gt; &amp; subsequent audits &gt;2 offences</td>
<td></td>
</tr>
<tr>
<td>Lines 7, 8</td>
<td>Not indicating provided landholder or authorised agent appropriate information or advice</td>
<td>PCO 3.8</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; &amp; 2&lt;sup&gt;nd&lt;/sup&gt; audit - written warning</td>
<td>3&lt;sup&gt;rd&lt;/sup&gt; &amp; subsequent audits &gt;2 offences</td>
<td></td>
</tr>
<tr>
<td>Line 10 (18, 31)</td>
<td>Actual persons not completed (may list properties or addresses where letter drop used)</td>
<td>PCO 3.5</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; audit, written warning + training</td>
<td>2&lt;sup&gt;nd&lt;/sup&gt; &amp; subsequent audits &gt; 1 - &lt; 6 offences</td>
<td></td>
</tr>
<tr>
<td>Lines 11, 13, 14, 17, 18</td>
<td>Incomplete indemnity forms or indemnities with incorrect information</td>
<td>PCO 3.5</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; &amp; 2&lt;sup&gt;nd&lt;/sup&gt; audit - written warning</td>
<td>3&lt;sup&gt;rd&lt;/sup&gt; &amp; subsequent audits &gt;2 offences</td>
<td></td>
</tr>
<tr>
<td>Line 12 (19)</td>
<td>Issuing excessive bait numbers for the area baited on a property (no replacement baiting identified on indemnity)</td>
<td>PCO 3.4</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; audit - written warning + training</td>
<td>2&lt;sup&gt;nd&lt;/sup&gt; audit - &gt; 2 offences 3&lt;sup&gt;rd&lt;/sup&gt; &amp; subsequent audits – all offences</td>
<td></td>
</tr>
<tr>
<td>Lines 15, 16 (19)</td>
<td>Indicates issuing excessive bait numbers to the LLS bait issuing guidelines for replacement or actual baiting program</td>
<td>LLS Guideline PCO 3.4 PA s111</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; audit - written warning + training</td>
<td>2&lt;sup&gt;nd&lt;/sup&gt; audit - &gt; 2 offences 3&lt;sup&gt;rd&lt;/sup&gt; &amp; subsequent audits – all offences</td>
<td></td>
</tr>
<tr>
<td>Lines 19, 20</td>
<td>Incomplete indemnity form</td>
<td>PCO 3.5</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; audit - written warning + training</td>
<td>2&lt;sup&gt;nd&lt;/sup&gt; audit - &gt; 2 offences 3&lt;sup&gt;rd&lt;/sup&gt; &amp; subsequent audits – all offences</td>
<td></td>
</tr>
<tr>
<td>Lines 21, 32, 33</td>
<td>Issuing excessive bait numbers to the LLS bait issuing guidelines for replacement or actual baiting program</td>
<td>LLS Guideline PCO 3.4 PA s111</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; audit - written warning + training</td>
<td>2&lt;sup&gt;nd&lt;/sup&gt; audit - &gt; 2 offences 3&lt;sup&gt;rd&lt;/sup&gt; &amp; subsequent audits – all offences</td>
<td></td>
</tr>
<tr>
<td>Line 22</td>
<td>Incomplete indemnity form</td>
<td>PCO 3.5</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; &amp; 2&lt;sup&gt;nd&lt;/sup&gt; audit - written warning</td>
<td>3&lt;sup&gt;rd&lt;/sup&gt; &amp; subsequent audits &gt;2 offences</td>
<td></td>
</tr>
<tr>
<td>Line 23</td>
<td>Person issuing baits not qualified</td>
<td>PCO 3.5</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; audit offences</td>
<td>2&lt;sup&gt;nd&lt;/sup&gt; &amp; subsequent audit offences</td>
<td></td>
</tr>
<tr>
<td>Spreadsheet line</td>
<td>Description of offence</td>
<td>Offence origin</td>
<td>Action 1080 supervisor</td>
<td>Action Manager</td>
<td>Action EPA</td>
</tr>
<tr>
<td>------------------</td>
<td>-----------------------------------------------------------</td>
<td>----------------</td>
<td>------------------------</td>
<td>----------------</td>
<td>--------------------------</td>
</tr>
<tr>
<td>Line 24</td>
<td>Incomplete indemnity form</td>
<td>PCO 3.5</td>
<td>1st &amp; 2nd audit - written warning 3rd &amp; subsequent audits &lt; 3 offences - written warning</td>
<td>3rd &amp; subsequent audits &gt;2 offences</td>
<td></td>
</tr>
<tr>
<td>Line 25, 28</td>
<td>Not recording evidence of qualifications of end user</td>
<td>PCO 3.9</td>
<td>1st &amp; 2nd audit - written warning 3rd &amp; subsequent audits &lt; 3 offences - written warning</td>
<td>3rd &amp; subsequent audits &gt;2 offences</td>
<td></td>
</tr>
<tr>
<td>Line 25, 28</td>
<td>Issuing 1080 product for use by an unqualified/trained person</td>
<td>PCO 3.9</td>
<td>1st &amp; 2nd audits - written warning 3rd &amp; subsequent audits &gt;2 offences</td>
<td>1st &amp; subsequent offences</td>
<td></td>
</tr>
<tr>
<td>Line 26</td>
<td>Recording poison use</td>
<td>VPM</td>
<td>1st audit - written warning + training</td>
<td>2nd audit - &lt; 3 offences</td>
<td>2nd audit - &gt; 2 offences 3rd &amp; subsequent audits – all offences</td>
</tr>
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<td>Line 27</td>
<td>Incorrect information/poison recording</td>
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<td>1st audit - written warning + training</td>
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<td>2nd audit - &gt; 2 offences 3rd &amp; subsequent audits – all offences</td>
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<td>Issuing baits outside of mandatory controls in RA</td>
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<td>1st audit - written warning + training</td>
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### 4.2 1080/PAPP issued

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<th>Action 1080 supervisor</th>
<th>Action Manager</th>
<th>Action EPA</th>
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<td>No indemnity number recorded</td>
<td>LLS Guidelines</td>
<td>1st &amp; 2nd audit - written warning 3rd &amp; subsequent audits &lt; 3 offences - written warning</td>
<td>3rd &amp; subsequent audits &gt;2 offences</td>
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<td>Line 5, 6, 7, 8</td>
<td>Information not reflecting indemnity form</td>
<td>LLS Guidelines</td>
<td>1st &amp; 2nd audit - written warning 3rd &amp; subsequent audits &lt; 3 offences - written warning</td>
<td>3rd &amp; subsequent audits &gt;2 offences</td>
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<td>Line 9</td>
<td>Area not recorded or different to indemnity form</td>
<td>LLS Guidelines</td>
<td>1st &amp; 2nd audit - written warning 3rd &amp; subsequent audits &lt; 3 offences - written warning</td>
<td>3rd &amp; subsequent audits &gt;2 offences</td>
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<td>Lines 10, 12</td>
<td>Information not reflecting indemnity form</td>
<td>LLS Guidelines</td>
<td>1st &amp; 2nd audit - written warning 3rd &amp; subsequent audits &lt; 3 offences - written warning</td>
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<td>Lines 11</td>
<td>Holding different to indemnity form</td>
<td>LLS Guidelines</td>
<td>1st &amp; 2nd audit - written warning 3rd &amp; subsequent audits &lt; 3 offences - written warning</td>
<td>3rd &amp; subsequent audits &gt;2 offences</td>
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<td>Line 13</td>
<td>Contact does not reflects indemnity</td>
<td>LLS Guidelines</td>
<td>1st &amp; 2nd audit - written warning 3rd &amp; subsequent audits &lt; 3 offences - written warning</td>
<td>3rd &amp; subsequent audits &gt;2 offences</td>
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<td>Lines 14</td>
<td>Contact qualifications not in FARMS</td>
<td>LLS Guidelines</td>
<td>1st &amp; 2nd audit - written warning 3rd &amp; subsequent audits &lt; 3 offences - written warning</td>
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<td>Line 14</td>
<td>Contact qualifications not current</td>
<td>PCO 3.9, PA s111</td>
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<td>1st &amp; subsequent offences</td>
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<td>Line 15</td>
<td>No observation or previous history to support supply of bait</td>
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<td>Lines 16</td>
<td>Records not made within 24 hrs without reasonable excuse</td>
<td>VPM, PR 13</td>
<td>1st audit - written warning + training</td>
<td>2nd audit - all offences 3rd &amp; subsequent audits - &lt;3 offences</td>
<td>3rd &amp; subsequent audits – &gt; 2 offences</td>
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<td>Lines 17</td>
<td>Records not made within 3 days without reasonable excuse</td>
<td>VPM, PR 13</td>
<td>1st audit - written warning + training</td>
<td>2nd audit - &lt; 3 offences</td>
<td>2nd audit - &gt; 2 offences 3rd &amp; subsequent audits – all offences</td>
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### 4.3 Property Risk Assessments

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<tr>
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<th>Description of Offence</th>
<th>Offence Origin</th>
<th>Action 1080 Supervisor</th>
<th>Action Manager</th>
<th>Action EPA</th>
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<td>2-9, 12</td>
<td>Incorrect risk assessment form or risk assessment form with incorrect information</td>
<td>LLS Guideline</td>
<td>1st &amp; 2nd audit - written warning 3rd &amp; subsequent audits - 1 offence - written warning</td>
<td>3rd &amp; subsequent audits &gt;1 offence</td>
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<td>8</td>
<td>2 persons not involved in Risk Assessment</td>
<td>LLS Guideline</td>
<td>1st &amp; 2nd audit - written warning 3rd &amp; subsequent audits - 1 offence - written warning</td>
<td>3rd &amp; subsequent audits &gt;1 offence</td>
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<tr>
<td>9</td>
<td>Not having written authorisation from property owner/occupier</td>
<td>LLS Guideline</td>
<td>1st &amp; 2nd audit - written warning 3rd &amp; subsequent audits - 1 offence - written warning</td>
<td>3rd &amp; subsequent audits &gt;1 offence</td>
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<td>10</td>
<td>Inappropriate persons with inadequate local knowledge of adjoining properties involved in risk assessments</td>
<td>LLS Guideline</td>
<td>1st &amp; 2nd audit - written warning 3rd &amp; subsequent audits - 1 offence - written warning</td>
<td>3rd &amp; subsequent audits &gt;1 offence</td>
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<tr>
<td>13</td>
<td>Not having written authorisation/consent from adjoining property owner/occupier to reduce distance restrictions</td>
<td>LLS Guideline  PCO 5.4.1</td>
<td>1st audit - written warning + training 2nd audit - &lt; 3 offences 2nd audit - &gt; 2 offences 3rd &amp; subsequent audits – all offences</td>
<td>2nd audit - &gt; 2 offences 3rd &amp; subsequent audits – all offences</td>
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<tr>
<td>14-16</td>
<td>Not identifying risk to native or threatened species, domestic livestock or pets</td>
<td>LLS Guideline</td>
<td>1st &amp; 2nd audit - written warning 3rd audit - 1 offence - written warning</td>
<td>3rd audit - &gt; 1 offence 4th &amp; subsequent audits - 1 offence</td>
<td>4th &amp; subsequent audits - &gt;1 offence</td>
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<td>17</td>
<td>Not identifying other risks that will have a negative or adverse outcomes</td>
<td>LLS Guideline</td>
<td>1st &amp; 2nd audit - written warning 3rd &amp; subsequent audits - 1 offence - written warning</td>
<td>3rd &amp; subsequent audits &gt;1 offence</td>
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<td>18</td>
<td>Incorrectly identifying the conditions of PCO (Particularly distance restrictions) can be met</td>
<td>LLS Guideline</td>
<td>1st &amp; 2nd audit - written warning 3rd audit - 1 offence - written warning</td>
<td>3rd audit - &gt; 1 offence 4th &amp; subsequent audits - 1 offence</td>
<td>4th &amp; subsequent audits - &gt;1 offence</td>
</tr>
<tr>
<td>19-34</td>
<td>Incomplete or fail to identify risks</td>
<td>LLS Guideline  PCO 5</td>
<td>1st &amp; 2nd audit - written warning 3rd audit - 1 offence - written warning</td>
<td>3rd audit - &gt; 1 offence 4th &amp; subsequent audits - 1 offence</td>
<td>4th &amp; subsequent audits - &gt;1 offence</td>
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<td>35</td>
<td>Recommendation not completed</td>
<td>LLS Guideline</td>
<td>1st &amp; 2nd audit - written warning 3rd &amp; subsequent audits - 1 offence - written warning</td>
<td>3rd &amp; subsequent audits &gt;1 offence</td>
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<tr>
<td>36-38</td>
<td>Appropriate signatures on RA.</td>
<td>LLS Guideline</td>
<td>1st &amp; 2nd audit - written warning 3rd &amp; subsequent audits - 1 offence - written warning</td>
<td>3rd &amp; subsequent audits &gt;1 offence</td>
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<td>39</td>
<td>Not correctly identifying if the distance requirements of the PCO can be met</td>
<td>LLS Guideline  PCO 5</td>
<td>1st &amp; 2nd audit - written warning 3rd audit - 1 offence - written warning</td>
<td>3rd audit - &gt; 1 offence 4th &amp; subsequent audits - 1 offence</td>
<td>4th &amp; subsequent audits - &gt;1 offence</td>
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<td>40</td>
<td>Non-compliance with legislation</td>
<td>LLS Guideline  PCO 5</td>
<td>1st &amp; 2nd audit - written warning 3rd audit - 1 offence - written warning</td>
<td>3rd audit - &gt; 1 offence 4th &amp; subsequent audits - 1 offence</td>
<td>4th &amp; subsequent audits - &gt;1 offence</td>
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**APPENDIX J**

133  NSW Department of Primary Industries, March 2019
### 4.4 Group Risk Assessments

<table>
<thead>
<tr>
<th>Spreadsheet line</th>
<th>Description of Offence</th>
<th>Offence Origin</th>
<th>Action 1080 Supervisor</th>
<th>Action Manager</th>
<th>Action EPA</th>
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<td>3-7,10</td>
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<td>LLS Guideline</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; &amp; 2&lt;sup&gt;nd&lt;/sup&gt; audit - written warning 3&lt;sup&gt;rd&lt;/sup&gt; &amp; subsequent audits - 1 offence - written warning</td>
<td>3&lt;sup&gt;rd&lt;/sup&gt; &amp; subsequent audits - 1 offence - written warning</td>
<td>4&lt;sup&gt;th&lt;/sup&gt; &amp; subsequent audits - &gt;1 offence</td>
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<td>9</td>
<td>Failing to do individual risk assessments when &gt;20% utilising supervision exemption</td>
<td>LLS Guideline</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; &amp; 2&lt;sup&gt;nd&lt;/sup&gt; audit - written warning 3&lt;sup&gt;rd&lt;/sup&gt; &amp; subsequent audits - 1 offence - written warning</td>
<td>3&lt;sup&gt;rd&lt;/sup&gt; &amp; subsequent audits - 1 offence - written warning</td>
<td></td>
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<tr>
<td>10</td>
<td>Not having written authorisation from property owner/occupier</td>
<td>LLS Guideline</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; &amp; 2&lt;sup&gt;nd&lt;/sup&gt; audit - written warning 3&lt;sup&gt;rd&lt;/sup&gt; &amp; subsequent audits - 1 offence - written warning</td>
<td>3&lt;sup&gt;rd&lt;/sup&gt; &amp; subsequent audits - 1 offence - written warning</td>
<td>2&lt;sup&gt;nd&lt;/sup&gt; audit - &gt; 3 offences 3&lt;sup&gt;rd&lt;/sup&gt; &amp; subsequent audits – all offences</td>
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<td>11</td>
<td>Not having written authorisation/consent from adjoining property owner/occupier to reduce distance restrictions</td>
<td>LLS Guideline PCO 5.4.1</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; audit - written warning + training</td>
<td>2&lt;sup&gt;nd&lt;/sup&gt; audit - &lt; 3 offences 3&lt;sup&gt;rd&lt;/sup&gt; &amp; subsequent audits – all offences</td>
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<td>13-16</td>
<td>Not identifying risk to native or threatened species, domestic livestock or pets</td>
<td>LLS Guideline</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; &amp; 2&lt;sup&gt;nd&lt;/sup&gt; audit - written warning 3&lt;sup&gt;rd&lt;/sup&gt; &amp; subsequent audits - 1 offence - written warning</td>
<td>3&lt;sup&gt;rd&lt;/sup&gt; audit - &gt; 1 offence 4&lt;sup&gt;th&lt;/sup&gt; &amp; subsequent audits - 1 offence</td>
<td>4&lt;sup&gt;th&lt;/sup&gt; &amp; subsequent audits - &gt;1 offence</td>
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<td>17</td>
<td>Not identifying other risks that will have a negative or adverse outcomes</td>
<td>LLS Guideline</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; &amp; 2&lt;sup&gt;nd&lt;/sup&gt; audit - written warning 3&lt;sup&gt;rd&lt;/sup&gt; &amp; subsequent audits - 1 offence - written warning</td>
<td>3&lt;sup&gt;rd&lt;/sup&gt; &amp; subsequent audits - 1 offence - written warning</td>
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<td>18</td>
<td>Incorrectly identifying the conditions of PCO can be met.</td>
<td>LLS Guideline</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; &amp; 2&lt;sup&gt;nd&lt;/sup&gt; audit - written warning 3&lt;sup&gt;rd&lt;/sup&gt; audit - 1 offence - written warning</td>
<td>3&lt;sup&gt;rd&lt;/sup&gt; audit - &gt; 1 offence 4&lt;sup&gt;th&lt;/sup&gt; &amp; subsequent audits - 1 offence</td>
<td>4&lt;sup&gt;th&lt;/sup&gt; &amp; subsequent audits - &gt;1 offence</td>
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<td>19-34</td>
<td>Incomplete or fail to identify risks</td>
<td>LLS Guideline PCO 5</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; &amp; 2&lt;sup&gt;nd&lt;/sup&gt; audit - written warning 3&lt;sup&gt;rd&lt;/sup&gt; audit - 1 offence - written warning</td>
<td>3&lt;sup&gt;rd&lt;/sup&gt; audit - &gt; 1 offence 4&lt;sup&gt;th&lt;/sup&gt; &amp; subsequent audits - 1 offence</td>
<td>4&lt;sup&gt;th&lt;/sup&gt; &amp; subsequent audits - &gt;1 offence</td>
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<td>35</td>
<td>Recommendation not completed</td>
<td>LLS Guideline</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; &amp; 2&lt;sup&gt;nd&lt;/sup&gt; audit - written warning 3&lt;sup&gt;rd&lt;/sup&gt; &amp; subsequent audits - 1 offence - written warning</td>
<td>3&lt;sup&gt;rd&lt;/sup&gt; &amp; subsequent audits - 1 offence - written warning</td>
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<td>Appropriate signatures on RA.</td>
<td>LLS Guideline</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; &amp; 2&lt;sup&gt;nd&lt;/sup&gt; audit - written warning 3&lt;sup&gt;rd&lt;/sup&gt; &amp; subsequent audits - 1 offence - written warning</td>
<td>3&lt;sup&gt;rd&lt;/sup&gt; &amp; subsequent audits - 1 offence - written warning</td>
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<td>1&lt;sup&gt;st&lt;/sup&gt; &amp; 2&lt;sup&gt;nd&lt;/sup&gt; audit - written warning 3&lt;sup&gt;rd&lt;/sup&gt; audit - 1 offence - written warning</td>
<td>3&lt;sup&gt;rd&lt;/sup&gt; audit - &gt; 1 offence 4&lt;sup&gt;th&lt;/sup&gt; &amp; subsequent audits - 1 offence</td>
<td>4&lt;sup&gt;th&lt;/sup&gt; &amp; subsequent audits - &gt;1 offence</td>
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<td>Offence Origin</td>
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<td>Action Manager</td>
<td>Action EPA</td>
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<td>Non-compliance with legislation</td>
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<td>4th &amp; subsequent audits - &gt;1 offence</td>
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<td>4th &amp; subsequent audits - &gt;1 offence</td>
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### 4.5 Indemnity – Other (Pindone, RHDV, Phosphine, Chloropicrin, Strychnine, Coumatetralyl, Bromadiolone)

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<th>Action Manager</th>
<th>Action EPA</th>
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<td>PCO 3.5</td>
<td>1st audit, written warning + training 2nd &amp; subsequent audits 1 offence - written warning</td>
<td>2nd &amp; subsequent audits &gt; 1 offence</td>
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<td>Incomplete indemnity forms or indemnities with incorrect information</td>
<td>PCO 3.5</td>
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<td>Line 5</td>
<td>Issuing product for use by a person not authorised by owner</td>
<td>Guideline</td>
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<td>Actual persons notified not completed (if required by permit or label)</td>
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<td>2nd &amp; subsequent audits 2-3 offences</td>
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</tr>
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<td>Lines 9, 10, 11, 12, 13, 14, 15, 16, 17, 19</td>
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<td>LLS Guideline</td>
<td>1st &amp; 2nd audit - written warning 3rd &amp; subsequent audits &lt; 3 offences - written warning</td>
<td>3rd &amp; subsequent audits &gt;2 offences</td>
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<tr>
<td>Line 18</td>
<td>Person issuing baits not qualified</td>
<td>VPM</td>
<td>1st audit offences</td>
<td>2nd &amp; subsequent audit offences</td>
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<tr>
<td>Line 20</td>
<td>No recording poison use</td>
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<td>1st audit - written warning + training</td>
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<td>Action 1080 supervisor</td>
<td>Action Manager</td>
<td>Action EPA</td>
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<td>Line 23</td>
<td>Issuing baits outside of mandatory controls in RA</td>
<td>PA S111</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; audit - written warning + training</td>
<td>2&lt;sup&gt;nd&lt;/sup&gt; audit - &lt; 3 offences</td>
<td>2&lt;sup&gt;nd&lt;/sup&gt; audit - &gt; 2 offences 3&lt;sup&gt;rd&lt;/sup&gt; &amp; subsequent audits – all offences</td>
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4.6 Other Poisons Issued (Pindone, Coumatetralyl, Bromadiolone)

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<th>Description of offence</th>
<th>Offence origin</th>
<th>Action 1080 supervisor</th>
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<th>Action EPA</th>
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<td>Line 4</td>
<td>No indemnity number recorded</td>
<td>LLS Guidelines</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; &amp; 2&lt;sup&gt;nd&lt;/sup&gt; audit - written warning 3&lt;sup&gt;rd&lt;/sup&gt; &amp; subsequent audits &lt; 3 offences - written warning</td>
<td>3&lt;sup&gt;rd&lt;/sup&gt; &amp; subsequent audits &gt;2 offences</td>
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<tr>
<td>Line 5, 6, 7, 8</td>
<td>Information not reflecting indemnity form</td>
<td>LLS Guidelines</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; &amp; 2&lt;sup&gt;nd&lt;/sup&gt; audit - written warning 3&lt;sup&gt;rd&lt;/sup&gt; &amp; subsequent audits &lt; 3 offences - written warning</td>
<td>3&lt;sup&gt;rd&lt;/sup&gt; &amp; subsequent audits &gt;2 offences</td>
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<td>1&lt;sup&gt;st&lt;/sup&gt; &amp; 2&lt;sup&gt;nd&lt;/sup&gt; audit - written warning 3&lt;sup&gt;rd&lt;/sup&gt; &amp; subsequent audits &lt; 3 offences - written warning</td>
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<td>Line 15</td>
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<td>LLS Guidelines</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; &amp; 2&lt;sup&gt;nd&lt;/sup&gt; audit - written warning 3&lt;sup&gt;rd&lt;/sup&gt; &amp; subsequent audits &lt; 3 offences - written warning</td>
<td>3&lt;sup&gt;rd&lt;/sup&gt; &amp; subsequent audits &gt;2 offences</td>
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<tr>
<td>Lines 16</td>
<td>Records not made within 24 hrs without reasonable excuse</td>
<td>VPM, PR 13</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; audit - written warning + training</td>
<td>2&lt;sup&gt;nd&lt;/sup&gt; audit - all offences 3&lt;sup&gt;rd&lt;/sup&gt; &amp; subsequent audits - &lt;3 offences</td>
<td>3&lt;sup&gt;rd&lt;/sup&gt; &amp; subsequent audits – &gt; 2 offences</td>
</tr>
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<td>Lines 17</td>
<td>Records not made within 3 days without reasonable excuse</td>
<td>VPM, PR 13</td>
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### 4.7 LLS RCP Bait Use

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<th>Action Manager</th>
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<td>PCO</td>
<td>1st audit - written warning + training</td>
<td>2nd &amp; subsequent audits - all offences</td>
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<tr>
<td>Line 8</td>
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<td>PA</td>
<td>1st audit - written warning</td>
<td>2nd audit -</td>
<td>3rd &amp; subsequent audits –</td>
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<td>Lines 9</td>
<td>Copy of pesticide application record not provided to landowner</td>
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<td>PA</td>
<td>1st audit - written warning + training</td>
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### 5.1 Aerial Baiting

#### Stage 1

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<td>Guidelines for Wild Dog aerial baiting</td>
<td>1st audit - written warning</td>
<td>2nd and subsequent audits – written warning. Return to ACO to amend</td>
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<td>No or not current management plan</td>
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<td>2nd and subsequent audits – written warning. Return to ACO to amend</td>
</tr>
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<td>Line 7</td>
<td>If yes to 6, EPBC Act not addressed</td>
<td>Guidelines for Wild Dog aerial baiting 3.0</td>
<td>1st audit - written warning and training</td>
<td>2nd and subsequent audits – written warning. Return to ACO to amend</td>
</tr>
<tr>
<td>Line 8</td>
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<td>Guidelines for Wild Dog aerial baiting 3.0</td>
<td>1st audit - written warning</td>
<td>2nd and subsequent audits – written warning. Return to ACO to amend</td>
</tr>
<tr>
<td>Line 9</td>
<td>Incorrect risk assessment form or risk assessment not completed</td>
<td>PCO</td>
<td>1st audit - written warning</td>
<td>2nd and subsequent audits</td>
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<td>Line 10</td>
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<td>1st and 2nd audit – training and written warning</td>
<td>3rd &amp; subsequent audits written warning. Return to ACO to amend</td>
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<td>Line 11</td>
<td>Bait lines not in a difficult and non logistically feasible locations</td>
<td>Guidelines for Wild Dog aerial baiting</td>
<td>1st and 2nd audit – training and written warning. Return to ACO to amend</td>
<td>3rd &amp; subsequent audits Return to ACO to amend</td>
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<tr>
<td>Line 12/13</td>
<td>Distance restriction(s) breached</td>
<td>PCO 5.4.2 and 5.5.2</td>
<td>1st audit – written warning + training Return to ACO to amend</td>
<td>2nd audit Return to ACO to amend</td>
</tr>
<tr>
<td>Line 14</td>
<td>Missing consent form</td>
<td>Guidelines for Wild Dog aerial baiting 4.0, VPM</td>
<td>1st and 2nd audit – training and written warning Return to ACO to amend</td>
<td>3rd &amp; subsequent audits Return to ACO to amend</td>
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<td>Line 15</td>
<td>All consent forms are not completed in full</td>
<td>PCO</td>
<td>1st and 2nd audit – training and written warning Return to ACO to amend</td>
<td>3rd &amp; subsequent audits Return to ACO to amend</td>
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<tr>
<td>Line 16</td>
<td>All bait numbers are not accurate</td>
<td>Guidelines for Wild Dog aerial baiting</td>
<td>1st and 2nd audit – training and written warning Return to ACO to amend</td>
<td>3rd &amp; subsequent audits Return to ACO to amend</td>
</tr>
<tr>
<td>Line 17</td>
<td>Bait numbers don’t match bait rate</td>
<td>Guidelines for Wild Dog aerial baiting</td>
<td>1st and 2nd audit – training and written warning Return to ACO to amend</td>
<td>3rd &amp; subsequent audits Return to ACO to amend</td>
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<tr>
<td>Line 18</td>
<td>Application has incomplete details of each participant</td>
<td>Guidelines for Wild Dog aerial baiting -</td>
<td>1st and 2nd audit – training and written warning Return to ACO to amend</td>
<td>3rd &amp; subsequent audits Return to ACO to amend</td>
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<tr>
<td>Line 19</td>
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<td>Guidelines for Wild Dog aerial baiting</td>
<td>1st and 2nd audit – training and written warning Return to ACO to amend</td>
<td>3rd &amp; subsequent audits Return to ACO to amend</td>
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<td>1st and 2nd audit – training and written warning Return to ACO to amend</td>
<td>3rd &amp; subsequent audits Return to ACO to amend</td>
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**Stage 2**

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<th>Action General Manager</th>
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<td>Line 3</td>
<td>Applicant is not person from WDA or pest group</td>
<td>Guidelines for Wild Dog aerial baiting</td>
<td>1st and subsequent audits - written warning. Return to TL to amend</td>
</tr>
<tr>
<td>Line 5</td>
<td>No management plan</td>
<td>Guidelines for Wild Dog aerial baiting 2.0</td>
<td>1st and subsequent audits - written warning. Return to TL to amend</td>
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<tr>
<td>Line 7</td>
<td>If yes to 6, EPBC Act not addressed</td>
<td>Guidelines for Wild Dog aerial baiting 3.0</td>
<td>1st and subsequent audits - written warning. Return to TL to amend</td>
</tr>
<tr>
<td>Line 8</td>
<td>Approval required but not received</td>
<td>Guidelines for Wild Dog aerial baiting 3.0</td>
<td>1st and subsequent audits - written warning. Return to TL to amend</td>
</tr>
<tr>
<td>Line 9</td>
<td>Incorrect risk assessment form or risk assessment not completed</td>
<td>LLS Guideline</td>
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<td>Action General Manager</td>
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<tr>
<td>Line 10</td>
<td>Risk assessment not completed in full and risks not identified and mitigated</td>
<td>PCO</td>
<td>1st and subsequent audits - written warning. Return to TL to amend</td>
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<tr>
<td>Line 11</td>
<td>Bait lines not in a difficult and non logistically feasible locations</td>
<td>Guidelines for Wild Dog aerial baiting</td>
<td>1st and subsequent audits - written warning. Return to TL to amend</td>
</tr>
<tr>
<td>Line 12/13</td>
<td>Distance restriction(s) breached</td>
<td>PCO 5.4.2 and 5.5.2</td>
<td>1st and subsequent audits - written warning. Return to TL to amend</td>
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<td>1st and subsequent audits - written warning. Return to TL to amend</td>
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</tr>
<tr>
<td>Line 17</td>
<td>Bait numbers don’t match bait rate</td>
<td>Guidelines for Wild Dog aerial baiting</td>
<td>1st and subsequent audits - written warning. Return to TL to amend</td>
</tr>
<tr>
<td>Line 18</td>
<td>Application has incomplete details of each participant</td>
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<td>1st and subsequent audits - written warning. Return to TL to amend</td>
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<td>Line 19</td>
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### Stage 3

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<td>Line 5</td>
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<td>Line 12/13</td>
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<td>Lines 14/15</td>
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<td>All bait numbers are not accurate</td>
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<td>Guidelines for Wild Dog aerial baiting</td>
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<td>Line 20</td>
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**Stage 4**

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<td>Bait droppers no chemical accreditation</td>
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<td>PCO</td>
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<td>Line 36</td>
<td>FARMS registers do not match baits applied</td>
<td>PCO</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; and 2&lt;sup&gt;nd&lt;/sup&gt; audit – written warning, 3&lt;sup&gt;rd&lt;/sup&gt; &amp; subsequent audits – 1 offence – written warning</td>
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<td>Offence origin</td>
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<td>3\textsuperscript{rd} &amp; subsequent audits &gt; 1 offence</td>
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<td>Pesticide application records available for landholders</td>
<td>PAct</td>
<td>1\textsuperscript{st} and 2\textsuperscript{nd} audit – written warning. 3\textsuperscript{rd} &amp; subsequent audits – 1 offence – written warning</td>
<td>3\textsuperscript{rd} &amp; subsequent audits &gt; 1 offence</td>
</tr>
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</table>
Appendix K – Local Land Service - Risk assessment and bait placement requirements.

Wild dogs and foxes

Baiting area

Identify which part of the holding the landholder wants to lay baits and areas excluded from baiting due to distance restrictions from requirements listed in the PCO. This may be less than the total area of the property and is identified by overlaying the relevant part of the holding the landholder wants to bait and distance restrictions on a property map. The area remaining is the actual area being baited and is used to calculate maximum bait numbers that can be laid at any one time. The maximum number of baits issued for trail baiting cannot exceed the total baits allowed for the area being baited.

Risk Assessments

Once risks are identified there are a number of measures that can be used to reduce the risk to a suitable level. The list below highlights examples of these but does not necessarily cover every situation.

1. Reduce number of baits below maximum number allowed as calculated by size of the actual area being baited, e.g. area being baited is 50ha which allows 10 baits, reduce bait number to 5.
2. Mandatory to bury or tether baits.
3. Define the type of bait. This may reduce non target uptake.
4. Define neighbour notification requirements, e.g. require letterbox drop as opposed to notification in local newspaper. This ensures that all neighbours receive notification.
5. Increase signage requirement to every 1km on road fence (PCO requires 5km).
6. Reduce the time baits can be left on property, e.g. For properties less than 100 ha, baits must be collected after 5 days.

Bait Placement

The placement of bait is a key factor in successful wild dog and fox control programs. Baits should be focused on pathways used by wild dogs and foxes as this has the potential to not only reduce the number of baits required to obtain successful control but also reduce the workload of landholders carrying out programs.

When to bait

In order to minimise impacts on livestock and native animals taking a strategic approach is best. Strategic baiting programs are best carried out from autumn to spring.

Identifying bait sites

1. Identify pathways. Wild dog footprints and scats.
2. Identify areas were wild dogs are likely to travel, eg, ridge lines, drainage lines, animal pads etc.
3. Identify intersecting travel paths to maximize exposure to baits.
4. Note bait sites that have baits removed. It could be expected that these animals will have been killed by the bait but future animals are likely to travel the same pathways.
Laying baits

It is essential to place baits to minimize the risk of bait movement and caching. Exposed baits are readily moved by birds.

**Bait station** – A mound of loose soil approximately 15cm high. Baits buried 10cm below the top of the mound. This not only helps to identify where the baits are placed but also reduces the risk of bait removal by non-targets.

**Buried bait** – Hole dug approximately 10cm deep with mattock, setter or shovel and bait placed in hole and covered.

**Covered bait** – Bait placed leaf litter or grass mimicking a cached bait

1. Only lay one bait per site. It only takes one bait to kill a wild dog or fox and also reduces the risk of caching of baits by foxes.
2. Distribute bait sites across the identified pathways. This will help decrease the likelihood of one animal picking up multiple baits.
3. Inspect bait sites every 3-4 days. If baits are showing signs of deterioration remove baits and dispose of as required by the PCO.
4. Consider ongoing baiting programs over a number of months. This will help to ensure lethal baits are available should wild dogs or foxes move through the property.

Higher density baiting (greater than 1 per 5ha, 1 per 100m) is permitted to target higher likelihood areas for bait take but increased risk of caching is a consideration when allowing this. This does not increase the total number of baits that can be issued for the program.

**Rabbits and Feral Pigs**

**Baiting area**

Identify which part of the holding the landholder wants to lay baits and areas excluded from baiting due to distance restrictions from requirements listed in the PCO. This may be less than the total area of the property and is identified by overlaying the relevant part of the holding the landholder wants to bait and distance restrictions on a property map. The amount of bait to be laid will be determined by free feeding which must be carried out on at least three occasions prior to baiting with 1080 baits.

**Risk Assessments**

Once risks are identified there are a number of measures that can be used to reduce the risk to a suitable level. The list below highlights examples of these but does not necessarily cover every situation.

1. Define when bait can be put out, e.g. put out at dusk, picked up at dawn (reduce possibility of grain uptake by birds, domestic dogs eating carrot)
2. Define the type of bait. This may reduce non target uptake
3. Define delivery method – pigs; eg, bait station, hog hopper, pipe feeder, under conveyor belt, buried, etc. – rabbits; trail, broadcast, under mesh covers, etc.
4. Define neighbour notification requirements, e.g. require letterbox drop as opposed to notification in local newspaper. This ensures that all neighbours receive notification.
5. Increase signage requirement to every 1km on road fence (PCO requires 5km)
6. Secondary poison risk to domestics. Require carcasses to be removed at dawn daily.
**Bait Placement**

The placement of bait is a key factor in successful rabbit and feral pig control programs. Baits should be focused on areas where feral pig and rabbits are feeding and this is further identified during the free feeding process.

**When to bait**

In order to minimise impacts on livestock and native animals taking a strategic approach is best. Where possible targeting periods when natural feed is less available will improve uptake of poisoned baits and improve efficacy of programs.
Appendix L – ACO to ACO restricted chemical product transfer record (external agency)

ACO name: ____________________________________________

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<th>Quantity</th>
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<th>Agency</th>
<th>Program</th>
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Appendix M – Feral pig approved delivery devices.

Field use of approved feral pig delivery device

Under the 1080 Pesticide Control Order feral pig baiting using an approved delivery device allows for extended presentation of 1080 bait in the field. In order to be approved as a feral pig delivery device field trials must demonstrate both target selectivity and effectiveness of the pig control device under closely monitored field conditions prior to endorsement.

Risk assessment and signage for use of approved feral pig delivery device

- A risk assessment must be undertaken for use of an approved feral pig delivery device. Risk assessments must be approved by a ACO.
- The ACO risk assessment should identify use of remote cameras to monitor both non-target and target species behaviour during the nominated feed period.
- Signage must be present at the location of the feral pig delivery device. Containers holding 1080 bait material must be clearly labelled “1080 Poison” in large red letters. A 1080 Feral Pig poisoning notice must be present at each feral pig delivery device site.

Approved delivery devices

Pest Lures

ACTA