

Prevention and Control of Damage by Animals in Western Australia



Department of
Environment and Conservation

Our environment, our future



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Department of Environment and Conservation
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Last Updated 5 July 2007

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1. Introduction

Animals can become damaging when they cause more damage than benefit to our values (Braysher 1993). For the purposes of environmental management and conservation in Western Australia, these values include social, environmental and agricultural values. Damaging animals can include that are both introduced and endemic to Western Australia (Braysher 1993).

When animals become damaging they can have significant harmful impacts on our lifestyle, biodiversity and primary productivity. They can have direct effects on native animals as competitors and predators and they can harbour parasites and diseases. They can also cause habitat degradation and damage crops, pastures and property.

The management of damaging animals is a complex task because its purpose is to balance the needs of humans and wildlife for the benefit of both. Management of damaging animals must integrate the social and economic implications of pest management as well as conserving biodiversity.

Damage by animals is one of several factors that influence environmental management and conservation practices and priorities in Western Australia. This guidance provides a framework for the prevention and control of damage by animals on Government managed land and privately managed land. It aims to assist DEC to work with the Western Australian community to minimise the damage caused by animals, while maintaining the welfare of the animals, preserving our social and economic values and conserving Western Australia's unique biodiversity.

2. Legislative Framework

The management of damaging animals in Western Australia is regulated by a range of statutory requirements. The table below briefly outlines the pieces of legislation relevant to the management of damage causing animals in Western Australia. If you are viewing this manual online, you can click on the links to access the legislation or the home page of the regulating authority.

Legislation	Application	Authority
<u>Wildlife Conservation Act 1950</u> <u>Wildlife Conservation Regulations 1970</u>	Protects and regulates interactions with Western Australian fauna.	<u>Department of Environment and Conservation</u>
<u>Agriculture and Related Resources Act 1976</u> <u>Agriculture and Related Resources Protection (Declared Animals) Regulations 1985</u>	Provides for the management, control and prevention of certain plants and animals, for the prohibition and regulation of the introduction and spread of certain plants and of the introduction, spread and keeping of certain animals, for the protection of agriculture and related resources generally, and for incidental and other purposes.	<u>Department of Agriculture and Food</u>
<u>Animal Welfare Act 2002</u> <u>Animal Welfare (Scientific Purposes) Regulations 2003</u>	Regulates the use of animals for scientific purposes, and the manner in which they may be used; and prohibits cruelty to, and other inhumane or improper treatment of animals.	<u>Department of Local Government and Regional Development</u>
<u>Occupational Safety and Health Act 1984</u> <u>Occupational Safety and Health Regulations 1996</u>	Requires employers to identify potential hazards and to develop strategies to minimise the risk of injury or disease. The <i>OS&H Act 1984</i> also requires employees to ensure their own safety by following instructions and correctly using any safety equipment provided	Department of Consumer and Employment Protection, <u>WorkSafe</u>

Legislation	Application	Authority
<u>Environment Protection and Biodiversity Conservation Act 1999</u>	Provides for the protection of the environment, especially those aspects of the environment that are matters of national environmental significance. Promotes the conservation of biodiversity and promotes a co-operative approach to the protection and management of the environment involving governments, the community, land-holders and indigenous peoples.	<u>Australian Department of Environment and Water Resources</u>
<u>Firearms Act 1973</u>	Provides for the control and regulation of firearms and ammunition, the licensing of persons possessing, using, dealing with, or manufacturing firearms and ammunition.	<u>Western Australia Police</u>
<u>Environmental Protection (Noise) Regulations 1997</u>	Regulates all noise passing from one premises to another, including from one unit to another in a block of units; noise from public places as it affects adjacent premises; and provides a basis for determining acceptable noise levels in relation to land use.	<u>Department of Environment and Conservation</u>
<u>Health Act 1911</u> <u>Health (Pesticide) Regulations 1956 WA</u>	Regulates the use and storage of chemicals such as pesticides.	<u>Department of Health</u>

3. Roles and Responsibilities

Co-operation between Government and private land managers facilitates information exchange, identification of issues, setting of objectives and improved co-ordination and participation in damage control programs (Olsen 1998). Pest management issues rarely stop at boundary fences. Pest animal committees involving people from a range of sectors of society can be effective for managing the problem at a regional level. These committees can be useful to (Olsen 1998):

- Alert stakeholders to their responsibilities.
- Inform stakeholders of the need for data collection and monitoring of damage control programs.
- Ensure a collaborative rather than an adversarial approach to damage management is taken.

While co-operation and ownership of the problem (and the solutions) at the regional level is essential for success (Olsen 1998), it is important to recognise who has primary responsibility for damage control.

3.1. Department of Environment and Conservation

The Department of Environment and Conservation (DEC) administers the *Wildlife Conservation Act 1950*. Under this act “fauna” is defined as any animal indigenous to any State or Territory of the Commonwealth or the territorial waters of the Commonwealth. The definition of fauna includes parts thereof including eggs, larvae, carcass, skin fur etc.

To “take” is defined as: to kill or capture any fauna by any means or to disturb or molest any fauna by any means or to use any method whatsoever to hunt or kill any fauna whether this results in killing or capturing any fauna or not; and also includes every attempt to take fauna and every act of assistance to another person to take fauna and derivatives and inflections have corresponding meaning.

Fauna are wholly protected throughout the whole of the State at all times. Any person wishing to “take” fauna, which includes many forms of damage control, must obtain a licence to do so from DEC when a licence is required.

The Minister may from time to time, declare that a species of fauna is not protected for a certain time period or for a certain time or part of the State via a notice published in the *Government Gazette*. This notice is called an ‘open season’ or a ‘restricted open season’ notice and places restrictions on interactions with fauna.

In addition to regulating interactions between humans and fauna, DEC’s other role is to provide advice to land managers on the planning and implementation of damage control programs (DEC 2007). DEC’s [Good Neighbour Policy](#) guides the management of cross boundary issues that affect DEC and its neighbours. In many cases, both parties have roles and responsibilities set out in legislation, but DEC will work to build good relations in its application of legislation, policies and actions (DEC 2007).

3.2. Department of Agriculture and Food WA

The Department of Agriculture and Food WA (DAFWA) regulates the import and keeping of introduced vertebrate animals. A gazetted list of [Declared Animals](#) is designed to assist people to determine the legal restrictions applicable under the *Agriculture and Related Resources Act 1976*. The categories for introduced animals are explained in the document [Importing and keeping introduced mammals, birds, reptiles and amphibians in Western Australia](#).

DAFWA conducts surveillance, research into vertebrate animal pests and provides advice on options for control. For more information, refer to [Vertebrate Animal Pests](#) on the DAFWA website.

3.3. Private Landholders

For lands other than Western Australian Government managed land, the land owner and/or manager has the responsibility for damage control. This includes private landholders, local Government authorities and Commonwealth Government agencies

such as those that manage defence and communications installations. If these stakeholders wish to 'take' fauna, they may require a licence from DEC. No licence to take is required for fauna that are not indigenous to Western Australia such as feral introduced animals. In addition, no licence to take is required for species of fauna that are the subject of 'open season' or 'restricted open season notices'. However, the means by which these species are controlled is usually limited to particular methods that are set out in these notices. It is prudent to contact the appropriate Government authority to confirm if a licence is required and to determine the circumstances under which pest animal control must be carried out.

3.4. Obtaining a Licence

Applications or enquiries concerning damage by **native** animals:

The Chief Wildlife Officer
Department of Environment and Conservation
Locked Bag 104, Bentley D.C. WA 6983
Tel. (08) 9334 0292
Fax. (08) 9334 0295
Email: Norm.Press@dec.wa.gov.au

Applications or enquiries concerning the import, keeping and control of **introduced** animals may be addressed to:

Department of Agriculture and Food
100 Bougainvillea Ave
Forrestfield 6058
Tel: (08) 9366 2300
Fax: (08) 9366 2342
Email: wkirkpatrick@agric.wa.gov.au

These agencies can provide information on when a licence is required and whether the species can be kept in the State, any conditions on introduction, keeping and control and the procedures to follow to obtain licences. The laws regarding interactions between humans and animals change from time to time. It is up to the individual to be responsible and lawful. Always keep up to date with the law and act within the law. Obtain a licence whenever required and carefully read and abide by the licence conditions.

4. Principles of Pest Management

Management of damage causing vertebrate animals requires a strategic approach that takes the individual circumstances of each problem into account. While it is possible to set down a generic program for all damaging animal management problems and management plans, plans often need to be prepared on a case by case basis.

The Commonwealth Bureau of Rural Sciences has developed a set of guidelines that can be used to develop a strategic approach to the management of damaging animals. This process involves planning, action and evaluation to help managers of both public and private lands address pest management problems.

The strategic approach to developing and implementing a pest management program involves seven basic steps. Their relevance to a particular issue will vary with land use, management objectives and the range of landholders and other key stakeholders involved. The process is illustrated in Figure 1.

The problem should be defined by the extent and nature of damage sustained, its significance and key stakeholders. Since the resources needed to undertake an effective vertebrate pest management program are likely to be limited, the next step is to set priorities. This process involves identifying areas where vertebrate pest activity causes significant harm in terms of production loss or degradation of conservation values and those areas that are most at risk from pests (Species Survival Commission 1999). Once priorities have been established, managers can decide whether pest control is an appropriate management response. While it may be agreed that a management unit has high production and/or conservation value and that pest animals are a significant threat, a pest animal control program may not be desirable or economically feasible.

The success of any vertebrate pest management program is assessed by evaluating progress made against the objectives and making judgements about related costs. Management objectives should be clear, realistic, time limited (if possible) and focussed on the desired outcomes from pest control. To determine the most cost-

effective method, an examination of control options, including doing nothing, is needed to determine appropriate techniques.

The steps required to implement the program can then be established and a timetable, including commitment of resources, drawn up. In plain language, what equipment is needed and who does what by when? Co-ordination with adjacent landholders may be necessary at this stage.

Finally, monitoring and evaluation are essential elements of any pest management program. They provide information that can be used to improve the efficiency and effectiveness of the program, any need to modify the objectives as part of an ongoing review program and an indication of when it is appropriate to cease the program altogether.

This planning process can be followed by small land managers in the city and suburbs, or the largest land managers on rural holdings, and allows for damage control planning across jurisdictions.

More information and guidelines on how to develop and implement a vertebrate pest management program using these guidelines can be found in the document Braysher, M. (1993) [Managing Vertebrate Pests: Principles and Strategies](#). AGPS, Canberra.

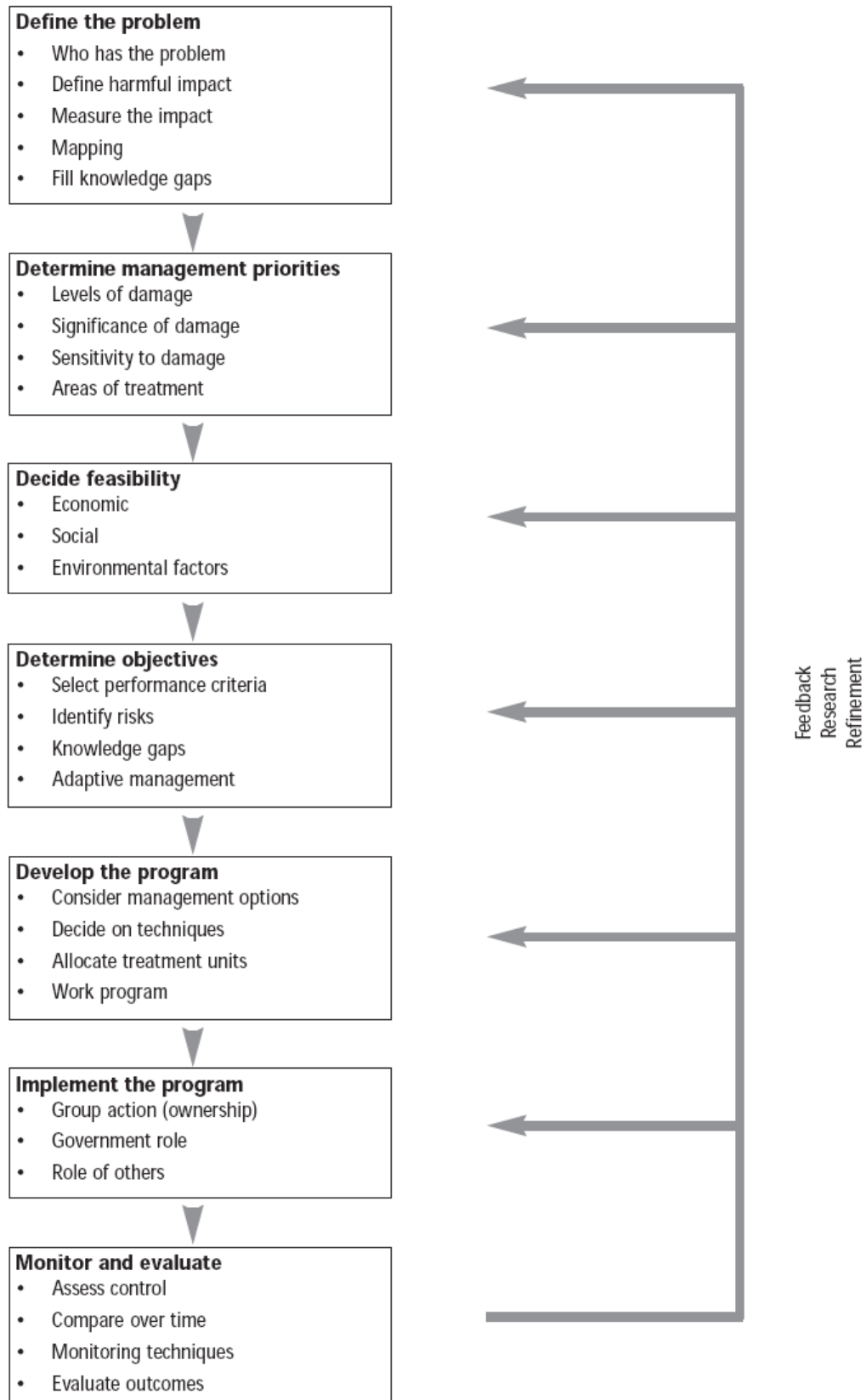


Figure 1 The strategic approach to developing and implementing a vertebrate pest management program (after Braysher 1993).

4.1. Best Practice Damage Management

There is no single solution to management of damaging animals because the circumstances vary in each case (Braysher 1993). Current Australian best practice involves: identification and definition of the problem, setting an objective, reviewing available options, implementing control measures and finally monitoring and evaluating success measures against your initial objective (Braysher 1993).

Step one is to identify which species is/are causing the damage by close observation, when and where damage occurs, the form of the damage and the cost of the damage (Braysher 1993). Step two is to define a measurable objective in terms of damage reduction, and not how many animals can be destroyed (Braysher 1993).

Step three is to adopt one of five management strategies:

- 1). Permanent long term management – such as an enclosure.
- 2). Sustained management – keeping pest animal numbers low over a long period of time by shooting and scaring or some other means. This is only practical for small resident populations and where the size, distribution, and mobility of the population is understood.
- 3). Targeted management – such as scaring devices and ‘throw-over’ netting to control damage when the risk of damage is high.
- 4). Crisis management – happens most of the time and involves the use of control devices when the level of damage has become intolerable. By this time, it is usually too late to be of much value because significant damage will already have occurred and the animals will have developed habits that may be difficult to change.
- 5). Do nothing - This is an option if the costs exceed the benefits that may be achieved from using control measures.

Of these five options, the most viable will usually be **targeted management**, where damage reduction techniques are applied when the risk of damage is high (Braysher 1993).

Step four is to implement management actions (Braysher 1993). Among the tools to do this are scarers and deterrents, visual devices, noise, distress calls and alarms, sound and movement (harassment), shooting, trapping, exclusion, habitat manipulation, behaviour modification (of humans and pest animals) and removal of eggs, nests and young (Hygnstrom *et al.* 1994). The most effective means of reducing damage is to use a combination of techniques as part of a well planned and co-ordinated program (Braysher 1993).

The final step, step five, is monitoring and evaluation. If you invest in a damage control program, it is worthwhile measuring its effectiveness (Braysher 1993). This will also help you to set a target for next year and make decisions on the usefulness or otherwise of various management options (Braysher 1993).

5. Animal Welfare

The *Animal Welfare Act 2002* applies to **individuals** and their treatment of animals. A person in charge of an animal is cruel to an animal if the animal is not provided with shelter, shade or other protection from the elements as is reasonably necessary to ensure its welfare, safety and health. A person in charge of an animal is also cruel if the animal suffers harm which could be alleviated by the taking of reasonable steps or is, in any other way, caused **unnecessary harm**.

In some cases, control of damage causing animals may require euthanasia of those animals. The goal of euthanasia is to use humane methods to produce a painless, rapid death and to avoid exciting or alarming the animal. The technique used should be reliable, simple and safe (Reilly 2001).

5.1. Euthanasia

The preferred method of euthanasia depends upon the species, size and age of the animal, the availability of equipment and the competency of persons in the application of euthanasia techniques. The method employed should follow Reilly, J.S. (Ed.) (2001) [Euthanasia of Animals Used for Scientific Purposes](#). ANZCCART.

The Australian Government's Department of the Environment and Water Resources (DEW), is currently developing a national code of practice and standard operating procedures for the humane capture, handling and destruction of pest animals. DEW is preparing a series of downloadable guidelines for individual species or groups of animals. These guidelines are available on the associated website [Development of a model code of practice and standard operating procedures for the humane capture, handling or destruction of feral animals in Australia](#) and should be followed at all times. As part of this series, a fact sheet on [Methods of Euthanasia](#) is available online.

After using a euthanasia technique on an animal, it is essential to establish that the animal is dead before disposing of the carcass (Reilly 2001). Several signs can be used to establish that death has occurred including: absence of breathing; absence

of a heart beat and a pulse; loss of colour (changing from pink to white or grey/blue) in the mucous membranes; no corneal reflex or response by the eyelid when stimulated and glazing of the eyes (Reilly 2001). If there is any doubt about confirmation of death, a second method should be used to ensure the animal is dead.

If the bodies are not required for research purposes, they should be either buried at an appropriate site or disposed of at refuse disposal site approved by the Local Government Authority.

6. Occupational Safety and Health

Workers potentially face a number of hazards managing damaging animals, including (Chapman *et al.* 2005):

- Physical injuries, such as bites, scratches and blows from animals and cuts and abrasions from equipment.
- Allergies to animal material such as hair and feathers.
- Zoonoses, which are diseases found in animals that may be transmitted to humans.
- Firearms shot and noise.
- Chemicals which can cause short-term or long-term harm.

Employers must provide adequate training and safety equipment for their employees, while employees must ensure they receive adequate training and use the safety equipment made available to them.

Employees must take precautions to minimise the risk of injury or disease to protect themselves, their families (children, the elderly and pregnant women are particularly vulnerable to zoonoses) and wildlife populations (Chapman *et al.* 2005). To minimise the risk of disease transmission, employees can take some simple precautions (Chapman *et al.* 2005):

- Obtain an Occupational Alert Card from the employer and carry the card at all times.
- Maintain high levels of personal hygiene such as washing hands before and after handling animals and before eating.
- Do not eat, drink or smoke cigarettes while handling animals or chemicals.

- Keep animals, animal products, animal waste and chemicals away from food preparation and storage areas.
- Ensure all trapping and handling equipment is clean and in good repair and working order before use.
- Keep up to date with information about any specific diseases that may be encountered when working with animals.
- Wear long sleeves and pants and use insect repellent in regions affected by Ross River Virus and other insect-borne diseases.
- Wear appropriate personal protective equipment (PPE). Disposable items are preferable because they reduce the risk of cross contamination.
- Use chemicals in a well ventilated area and ensure containers are tightly capped after use.
- Scrub down the work area and equipment, including the vehicle used to transport the animals, with disinfectant after use.
- Use disinfectant and hot water to wash field clothes and other equipment that has come into contact with the blood, waste or other body fluids of animals. Chemical residue should be washed off with an appropriate detergent.

6.1. Firearms and noise

Firearms are potentially hazardous and must only be used for pest control by trained and licenced personnel. The inappropriate handling, use, storage and maintenance of firearms can result in physical harm, psychological trauma and even death.

DEC has a [Firearms](#) Section available on the internal website which provides the information needed for DEC officers to fulfil their duty of care in relation to the

handling, use, storage and maintenance of firearms. The [Firearms Guidance Note](#) provides information on Training and Skills Maintenance, Corporate Licence, Security, Purchasing, Transfer/Disposal, Departmental Firearms on Non Departmental Estate, Non Departmental Firearms, Maintenance and Repair, Audit and Incident Reporting.

[Guidelines for the Safe Use of Firearms](#) is a Department of Agriculture and Food publication (Bulletin No. 4621) that is available online. This document covers regulations, safety and security, maintenance and operation guidelines for the shooting of a range of animals.

6.2. Zoonoses

Zoonoses are diseases that affect both animals and humans. Zoonoses are diseases found in animals that may be transmitted to humans.

People who undertake damage control programs should be aware of the hazards associated with working with animals and how to take precautions to minimise the risk of disease transmission to protect themselves, their families and wildlife populations (Chapman *et al.* 2005).

A guidance called [Minimising Disease Risk in Wildlife Management](#) is available to DEC staff on the internal website. The purpose of this document is to present standard operating procedures to minimise the risk of disease transmission between wildlife populations and from wildlife to DEC personnel and their families. The guide begins with a discussion of selected sections of the relevant legislation. The legislation can be viewed online by clicking on the links in the text. The remaining parts of the guide are designed to raise awareness among DEC personnel of the potential for injury and disease transmission and to provide guidance to minimise the risk of disease transmission between wildlife populations and from wildlife to DEC personnel and their families.

6.3. Hazardous substances

Management of damaging animals may require the use of hazardous substances, such as CO₂, alpha-chloralose, injectable agents, cleaning agents, chemicals used to preserve tissue samples and other chemicals.

The *OS&H Regulations 1996* require employers and self-employed persons to ensure that exposure to hazardous substances is kept to a minimum by a process of risk assessment and controlling the risks.

All hazardous substances used, stored, transported and handled in the workplace must be identified via a register (Regulation 3.1). The employer must keep and maintain the register and ensure it is readily available to employees. The register should include all hazardous substances used and the supplier's Material Safety Data Sheets. If you are not sure if a substance is hazardous, look at the material safety data sheet (MSDS) or ask the supplier.

Hazardous substances must be labelled as such and the labels must identify the associated hazards and provide basic health and safety information. If any potentially hazardous substance does not have a label, it must be stored by itself and not be used until labelled. If it can not be identified, it must be disposed of at an approved facility.

To minimise the risk of hazardous substances, employers must take the following risk control measures (in order):

1. Elimination.
2. Substitution.
3. Engineering controls (eg, ventilation).
4. Safe work practices.
5. Personal protective equipment (PPE).

The purpose of these controls is to ensure workers are not exposed to airborne hazardous substances at a level above the exposure standard for the relevant period

of time (stated in the MSDS). Employers must provide PPE and make sure employees are trained in the use of the hazardous substance and PPE.

To minimise the risk of hazardous substances, employees can take some simple precautions:

- Identify the problem and determine which type of control measure is required.
- Ensure everyone who handles hazardous substances is properly trained in their safe use.
- Obtain information from the Material Safety Data Sheet. Carefully read the label and MSDS and adhere to the recommended safety measures.
- Prepare hazardous substances using the appropriate equipment and PPE in a well ventilated area.
- Wash hazardous substances off your skin immediately and wash your equipment thoroughly after use.
- Deal with any spillages by following the advice on the MSDS or by contacting emergency services in the event of a large spill.
- Store hazardous substances safely in accordance with the MSDS and *OS&H Regulations 1996*. Regularly check for leaks and to ensure the label is intact.

7. Species Profiles

Four basic steps can be followed to prevent or resolve animal damage problems. These four principles of best practice damage management are summarised below (refer to Section 4.1):

1. Recognise the damage caused and the species responsible – early detection and action can reduce or eliminate the damage. Accurate identification of the species causing the damage is essential.
2. Understand the biology of the species as it relates to the damage caused – each species varies in behaviour, movements, food habitat, habitat requirements and biology. These factors must be considered for control to be effective. The more information that is known about a species and its requirements, the more effective a management program will be.
3. Understand and evaluate the alternatives – all management options have advantages and disadvantages and vary in efficiency. The costs and benefits to the land manager and others must be taken into consideration.
4. Know and act within the law – Knowledge of, and compliance with, local, State and Commonwealth regulations is up to the individual.

The species profiles will assist Western Australian Government and private land managers to follow this four-step process by providing a summary of the identification of the species and the biology of pest birds in Western Australia. They provide information on the factors that attract those species to a site, the damage they cause, their current legal status and effective methods for damage prevention and control. Because this manual has been prepared by DEC, the species profiles will focus on damage causing species that are either native to Western Australia or which affect our biodiversity. The profiles will be updated and new profiles prepared as new information becomes available.

8. References

Braysher M. (1993) 'Managing Vertebrate Pests: Principles and Strategies.' (Bureau of Rural Sciences: Canberra).

Chapman T., Simms C. and Mawson P. (2005) Minimising Disease Risk in Wildlife Management. Department of Conservation and Land Management, Perth.

DEC (2007) Good neighbour policy. Department of Environment and Conservation, Perth.

Hygnstrom S.E., Timm R.M. and Larson G.E. (Eds) (1994) 'Prevention and Control of Wildlife Damage.' (University of Nebraska: Lincoln).

Olsen P. (1998) 'Australia's Pest Animals - a New Solution For Old Problems.' (Bureau of Resource Sciences: Canberra).

Reilly J.S. (Ed.) (2001) 'Euthanasia of Animals Used for Scientific Purposes.' (ANZCCART: Adelaide).



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