



NSW DEPARTMENT OF PRIMARY INDUSTRIES

FINAL REPORT FOR THE AUSTRALIAN GOVERNMENT
DEPARTMENT OF THE ENVIRONMENT AND HERITAGE

Development of model standard operating procedures for the humane research of pest animals in Australia.

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This report should be cited as: Saunders, G., Sharp, T. and Mitchell, B. (2007). *Development of model standard operating procedures for the humane research of pest animals in Australia.*

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This project (ID number: 46217) was funded by the Australian Government Department of the Environment and Water Resources through the national threat abatement component of the Natural Heritage Trust.



Australian Government

Department of the Environment and Water Resources

1. PROJECT INFORMATION

Project Name in Full

A project that develops agreed standard operating procedures for the humane care and use of pest animals in Australia for the purposes of scientific research

Details of Applicant

(a) Organisation

Name: Vertebrate Pest Research Unit (VPRU),
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Title: Ms. Initials: T. Given Name: Trudy
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Period of Project

Commencement date: 01/07/2004 Completion Date: 21/02/2007

2. CONTRACTED OBJECTIVES

The objectives of this project will be met by a process of consultation and review. The various stages and their components are:

Stage 1:

- Undertake a desktop review (including contacting relevant government agencies, researchers and industry organisations) and evaluation of existing literature and legislation that is available in relation to the care and use of pest animals (primarily rabbits, goats, pigs, foxes and cats) in scientific research. This review and evaluation must focus on the animal welfare aspects of undertaking scientific research on pest animals.

Stage 2:

- Identify and prioritise the gaps in existing knowledge (based on the review and evaluation completed in Stage 1);

Stage 3:

- Prepare draft standard operating procedures for the care and use of pest animals (primarily rabbits, goats, pigs, foxes and cats) that can be used by scientific research staff. The draft standard operating procedures must also be consistent with and provide an adjunct to previously completed codes of practice and standard operating procedures for the management of pest animals and include consideration of the animal welfare aspects of undertaking scientific research on feral animals.
- Seek comments and 'in-principle' endorsement on the draft standard operating procedures from the relevant State and Local Government agencies, including the Vertebrate Pests Committee and key non-government, research and industry organisations.
- Collate all comments received on the draft code of practice and standard operating procedures.
- Highlight any concerns expressed about the draft standard operating procedures.
- Clearly identify what needs to be done to address these concerns.

Stage 4:

- Prepare final versions of the standard operating procedures. This will need to incorporate comments (where appropriate) that were received on the draft code of practice and standard operating procedures. The final version of the standard operating procedures will need to be a final document that Environment Australia would be able to submit through the formal committee system under the Natural Resource Management Ministerial Council.

3. PROJECT OUTCOMES

Stage 1: Desktop Review

Pest animal research methods should be humane and safe for humans to use. Standard operating procedures (SOP's) that discuss animal welfare impacts, describe the technique and its application, as well as covering health and safety aspects are required.

The aim of this review was to collect information on existing pest animal research methods and procedures used by government agencies, researchers and industry organisations. Current literature, legislation and codes of practice relating to research methods were also documented.

Existing Standard Operating Procedures

Although there are numerous codes of practice that relate to the keeping and handling of stock and domestic animals, few SOPs existed that were directly relevant to pest animal research.

Search for existing standard operating procedures

A range of government agencies, researchers and industry organisations were contacted to request SOP'S that had already been written. Suggestions on what information should be included in the standard methods and what format they should take were also requested. Some advice was received on how the SOP's should be constructed and what type of information should be included.

A number of websites were also accessed to search for methods, codes of practice and other relevant information. These are listed in Table 1. Journal articles do not usually describe specific techniques in great detail; however, some contain enough information to help with writing of SOP's. Journal and other articles used are listed in the relevant SOPs.

Table 1. List of websites accessed to search for methods, codes of practice, publications and other relevant information.

Animal Welfare Sites	
American Humane Association	http://www.americanhumane.org/
Animal Ethics Infolink	http://www.animaethics.org.au/
Animal Liberation NSW	http://www.animal-lib.org.au/
Animal Liberation South Australia	http://www.animalliberation.org.au/home.html
Animal Welfare and Bioethics Centre	http://animalwelfare.massey.ac.nz/
Animal Welfare Centre	http://www.animal-welfare.org.au/
Animal Welfare Information Centre	http://www.nal.usda.gov/awic/
Animal Welfare MAF NZ	http://www.maf.govt.nz/biosecurity/animal-welfare/index.htm
Animals Australia	http://www.animalsaustralia.org/
ANZCCART	http://www.adelaide.edu.au/ANZCCART/
ARMCANZ Model Codes of Practice for the Welfare of Animals	http://www.affa.gov.au/docs/operating_environment/armcanz/pubsinfo/mcpwa/animal_welfare.html
Canadian Council on Animal Care	http://www.ccac.ca/
DEFRA, UK – Animal health and welfare	http://www.defra.gov.uk/animalh/animindx.htm
Humane Slaughter Association	http://www.hsa.org.uk/
Humane Society International	http://www.hsi.org.au/
The Humane Society of the United States	http://www.hsus.org/ace/352
International Fund for Animal Welfare	http://www.ifaw.org/ifaw/general/
Law Society Animal Rights Committee	http://www.lawsociety.com.au/page.asp?partid=6153
RSPCA Australia	http://www.rspca.org.au/
RSPCA NSW	http://www.rspcansw.org.au/rspca-homepage.htm
RSPCA QLD	http://www.rspcaqlld.org.au/default.asp
University of British Columbia Canada Animal Welfare	http://www.agsci.ubc.ca/animalwelfare/
Universities Federation for Animal Welfare (UFAW)	http://www.ufaw.org.uk/index.htm
University of Edinburgh Animal Welfare Research Group	http://www.vet.ed.ac.uk/animalwelfare/default.htm
University of Syd. Vet. Education and Information Network	http://vein.library.usyd.edu.au/links/animalwelfare.html
World Society for the Protection of Animals (WSPA)	http://www.wspa.org.uk/index.php?ilocale=2
World League for the Protection of Animals	http://www.zipworld.com.au/~wlpa/index2.htm
World Wildlife Fund Australia	http://www.wwf.org.au/

Government Departments	
APVMA	http://www.apvma.gov.au/
Australian Government, Agriculture, Fisheries and Forestry	http://www.affa.gov.au/index.cfm
CSIRO Australia	http://www.csiro.au/
Environment ACT	http://www.environment.act.gov.au/
Department of the Environment and Heritage	http://www.deh.gov.au/index.html
Northern Territory Parks and Wildlife Commission	http://www.nt.gov.au/ipe/pwcnt/
NSW National Parks and Wildlife Service	http://www.nationalparks.nsw.gov.au/npws.nsf/Content/Home
NSW Agriculture	http://www.agric.nsw.gov.au/
Pest Animal Control CRC	http://www.pestanimal.crc.org.au/
Queensland Dpt of Natural Resources and Mines	http://www.dnr.qld.gov.au/
South Australia Natural Resources	http://sustainableresources.pir.sa.gov.au/
South Australia Department for Environment and Heritage	http://www.environment.sa.gov.au/
South Australia Parks & Wildlife	http://www.environment.sa.gov.au/parks/
Tasmania Dpt of Primary Industries, Water & Environment	http://www.dpiwe.tas.gov.au/
Victorian Dpt Of Primary Industries	http://www.dpi.vic.gov.au/
Western Australia Conservation & Land Management	http://www.calm.wa.gov.au/
Western Australia Dpt of Agriculture	http://www.agric.wa.gov.au/default.pasp
State & Territory Animal Welfare Departments	
ACT Environment ACT	http://www.environment.act.gov.au/
NT Business, Industry & Resource Development	http://www.nt.gov.au/dbird/dpif/animals/animal_welfare.shtml
NSW Agriculture	http://www.agric.nsw.gov.au/reader/625
Queensland Primary Industries	http://www.dpi.qld.gov.au/animalwelfare/
South Australia Department for Environment and Heritage	http://www.environment.sa.gov.au/parks/about.html#Animal_Welfare
Tasmania Primary Industries, Water & Environment	http://www.dpiwe.tas.gov.au/inter.nsf/WebPages/EGIL-535VVF?open
Victoria Primary Industries	http://www.dpi.vic.gov.au/web/root/domino/cm_da/nrenfa.nsf/frameset/NRE+Farming+and+Agriculture?OpenDocument
WA Local Government & Regional Development	http://www.dlgrd.wa.gov.au/pub/docs/AnimalWelfare/Animal_Welfare_Intro.shtml
Overseas	
American Society of Mammalogists	http://www.mammalsociety.org/
Canadian Agr-Food Research Council, Code of Practice Index	http://www.carc-crac.ca/english/codes_of_practice/
Environment Waikato NZ	http://www.ew.govt.nz/ourenvironment/pests/index.htm

Fur Institute of Canada – Institut de la fourrure du Canada	http://www.fur.ca/
New Zealand Landcare Research	http://www.landcareresearch.co.nz/
National Wildlife Research Centre USA	http://www.aphis.usda.gov/ws/nwrc/index.html
New Zealand Department of Conservation	http://www.doc.govt.nz/
Veterinary Sites	
Animal Health Australia	http://www.aahc.com.au/
Australian Veterinary Association	http://www.ava.com.au/
Merck Veterinary Manual	http://www.merckvetmanual.com/mvm/index.jsp
OIE – World Organisation for Animal Health	http://www.oie.int/eng/en_index.htm
UK Wildlife Casualty Management	http://212.187.155.84/wmv/Lists_Health&Man/FLOWCHARTUK_Wildlife/FLOWCHARTUK_Wildlife.htm
Wildlife Casualty Euthanasia	http://212.187.155.84/wmv/Subdirectories_for_Search/Health&Management_Contents/UKF_irstAidandCare/WildlifeCasualtyEuthanasia.htm#Mammal1
Miscellaneous Sites	
Australian Legislation	http://www.austlii.edu.au/databases.html#cth
AUSVETPLAN	http://www.aahc.com.au/ausvetplan/#wild
British Association for Shooting and Conservation	http://www.huntinginquiry.gov.uk/evidence/basc.htm
Coast to coast vermin traps	http://home.primus.com.au/panorama/
Denmark Wildlife Ecology and Biodiversity	http://www.dmu.dk/1_om_dmu/2_afdelinger/3_vibi/medarbejdere2_en.asp?PersonID=hn
Fox control in Victoria	http://www.nre.vic.gov.au/web/root/domino/cm_da/NRECPA.nsf/8ce6d41bed8143f14a2569a6002b0e7c/0ccfcb9e2d746b0a4a256a56001cc3ea/\$FILE/Redfox.pdf
Hunting with dogs VIC	http://www.nre.vic.gov.au/web/root/domino/cm_da/NRECRN.nsf/2fc3379bd0005bd64a2566cf00283d52/fb3c05053879666dca256ce6000071a9/\$FILE/HoundHuntingBooklet.pdf
National Training Information Service	http://www.ntis.gov.au/cgi-bin/waxhtml/~ntis2/std.wvx?page=82&inputRef=616
National Health & Medical Research Council – Publications	http://www.health.gov.au/nhmrc/publications/
NPWS - Predation by the Red fox	http://www.nationalparks.nsw.gov.au/PDFs/Redfox_approved.pdf
NT University Guidelines for Field Research on Vertebrates	http://www.mindil.ntu.edu.au/ntu/apps/ntuinfo.nsf/WWWView/Procedure_741
Pest Management Encyclopaedia	http://dekker.com/servlet/product/productid/E-EPM/toc?s=a&nb=
Threat Abatement Plan for Predation by Feral Cats	http://www.deh.gov.au/biodiversity/threatened/tap/cats/index.html
Wild dog strategy QLD	http://www.nrm.qld.gov.au/pests/wilddog/pdf/wdstrategy.pdf

Stage 2: Gaps in existing knowledge

Standard Operating Procedures

The review of existing pest animal research methods revealed that very few are currently available as standard procedures. A priority list of methods to be written was compiled in collaboration with members of NSW DPI Vertebrate Pest sub-program. It was decided not to write SOP's for methods that were considered inhumane, even if they are still in current use in some states. The SOP's take a standard format covering background of the technique, application, animal welfare considerations, health and safety aspects, equipment required, procedures, further information and references.

Strategy for writing SOPs and identifying gaps in knowledge

The approach taken in writing the SOP's was as follows:

- Relevant information on the method obtained from pest animal control manuals/guidelines, journal articles, other relevant publications etc.
- The SOP was written, taking into account animal welfare considerations and incorporating any differences between state and territories.
- During the writing process, the SOP was reviewed from an animal welfare perspective and notes are made about concerns, inconsistencies and gaps in knowledge.
- A draft of the SOP was sent to relevant agencies and individuals for review.

Stage 3: Preparation of draft Standard Operating Procedures

Preparation of Model Standard Operating Procedures (SOPs)

Five standard operating procedures were written (Table 2). Because many of the research methods used in pest animal research overlap with the methods used in controlling pests, there was a great deal of repetition between the research SOPs and the previously published operational SOPs (Table 3). To avoid this repetition, it was necessary to cross reference the research SOPs with both sets of documents becoming complimentary. For this reason, any web publication of either set of documents should be linked.

Table 2. List of standard operating procedures for research.

RES001	Live capture of pest animals used in research
RES002	Restraint and handling of pest animals used in research
RES003	Holding and transportation of pest animals used in research
RES004	Marking of pest animals used in research
RES005	Measurement and sampling of pest animals used in research

Table 3. List of standard operating procedures for control (previously published).

SOP No.	Title
GENERAL	
GEN001	Methods of euthanasia
GEN002	Care and management of dogs used in the control of pest animals
RABBITS	
RAB001	Inoculation of rabbits with RHDV
RAB002	Ground baiting of rabbits with 1080
RAB003	Aerial baiting of rabbits with 1080
RAB004	Ground baiting of rabbits with Pindone
RAB005	Diffusion fumigation of rabbit warrens
RAB006	Rabbit warren destruction using ripping
RAB007	Rabbit warren destruction using explosives
RAB008	Trapping of rabbits using padded-jaw traps
RAB009	Ground shooting of rabbits
FOXES	
FOX001	Ground baiting of foxes with 1080
FOX002	Aerial baiting of foxes with 1080
FOX003	Ground shooting of foxes
FOX004	Fumigation of fox dens
FOX005	Trapping of foxes using padded-jaw traps
FOX006	Trapping of foxes using cage traps
PIGS	
PIG001	Trapping of feral pigs
PIG002	Aerial shooting of feral pigs
PIG003	Ground shooting of feral pigs
PIG004	Use of Judas pigs
PIG005	Poisoning of pigs with 1080
DOGS	
DOG001	Trapping of wild dogs using padded-jaw traps
DOG002	Trapping of wild dogs using cage traps
DOG003	Ground shooting of wild dogs
DOG004	Ground baiting of wild dogs with 1080
DOG005	Aerial baiting of wild dogs with 1080
CATS	
CAT001	Ground shooting of feral cats
CAT002	Trapping of feral cats using cage traps
CAT003	Trapping of feral cats using padded-jaw traps
GOATS	
GOA001	Ground shooting of feral goats
GOA002	Aerial shooting of feral goats
GOA003	Mustering of feral goats
GOA004	Trapping of feral goats
GOA005	Use of Judas goats
DEER	
DEE001	Ground shooting of feral deer
BIRDS	
BIR001	Shooting of pest birds
BIR002	Trapping of pest birds

SOP No.	Title
HARES	
HAR001	Shooting of hares
HORSE	
HOR001	Ground shooting of feral horses
HOR002	Aerial shooting of feral horses
HOR003	Mustering of feral horses
HOR004	Trapping of feral horses

Process used to seek and collate comments on further drafts from key stakeholders

Draft SOPs were sent out to relevant State, Territory and Local Government agencies, including the Vertebrate Pests Committee and key non-government, research and industry organisations for comment and “in-principle” endorsement (Table 4). Comments were then considered carefully in relation to the terms of reference for the SOPs, their relevance in comparison to established literature, legislation and of course the animal welfare implications. This process in turn determined if it was appropriate to modify the documents in light of the comments received.

Table 4. Organisations and committees contacted to review drafts of standard operating procedures.

Organisation/Committee
Vertebrate Pest Committee
Natural Resource Policies and Programs Committee
Animal Health Committee – Animal Welfare Working Group
VIC Animal Welfare Advisory Committee – WPAWG
National Consultative Committee on Animal Welfare
Australian Veterinary Association
RSPCA
Invasive Animals CRC

Stage 4: Prepare final versions (for DEH) of the standard operating procedures incorporating comments (where appropriate) from previous stages of the project.

All completed documents are included as appendices at the completion of this report.