

# Bang for your buck The value of organised volunteer hunters in Integrated Pest Management

Andrew Walsh on behalf of the  
NSW Game and Pest Management Advisory Board

19 Oct 2023

Images provided by DPI Hunting, Robert Mulley and Bob Gough



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***“Pest management is considered to be most effective when it combines an integrated set of complementary tools and techniques carried out in a strategic manner”*** Natural Resource Commission 2017



# Who is the Game and Pest Management Advisory Board

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- The Game and Pest Management Advisory Board represents the interests of licensed hunters and provides advice to the Minister for Agriculture and the Department of Primary Industries (DPI) on game and pest animal management in NSW.
- Collectively the Board has expertise in a range of areas including pest management, wildlife biology and ecology, veterinary science, hunting, education, community engagement, and animal welfare
- The Board operates independently of the DPI with secretariat support from the DPI Hunting Unit.
- Meet the Board <https://www.dpi.nsw.gov.au/hunting/game-and-pest-board>

<b>Emeritus Professor Robert Mulley (Chair)</b>	<b>Andrew Walsh</b>	<b>Christine Hall</b>	<b>Dan Field</b>	<b>David Voss</b>	<b>Dr Justin Clarke</b>	<b>Robert Costello</b>	<b>Jai Rowell</b>
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# Hunting in NSW

Hunting is recognised as a legitimate recreational pursuit and one of a number of tools used in the management of game and feral animals

DPI Hunting is the delegated regulatory authority for hunting in NSW

The type of licence you need to legally hunt in NSW depends on:

- the type of animal to be hunted
- the land to be hunted on – public or private

To hunt game and feral animals recreationally on public land in NSW, you need to:

- Meet legislated criteria
- Undertake accredited education and training:
- Be a member of an Approved Hunting Organisation (AHO)



# Game Hunting Licence Education

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## Section 1: Compulsory learning - NSW Hunter Education Program

Contains compulsory learning that covers the basic knowledge required to be a safe, ethical and responsible hunter on public land.

- hunting laws in NSW
- being an ethical and involved hunter
- animals, identification and welfare
- hunting on public land and private land
- outdoor safety and survival
- being a safe hunter.



## Section 2 : Hunting Methods (Firearms, Dogs and Bows) modules

To use any of these hunting methods on public land, you must first become accredited for the relevant category by completing one or more training modules



# What is an Organised Volunteer Hunter

An organised volunteer hunter is someone with education and training related to pest control and animal management, willing and able to make the attitudinal shift and commitment to participate in an organised volunteer hunting program, supported by the organisational knowledge and experience within the AHO.

Key attributes:

- Well trained (Game Hunting License or similar)
  - Safe, Accurate, Ethical
- Responsible and Committed
- Have an understanding of
  - animal welfare principles
  - pastoral and environmental asset protection
  - population management (not just trophy hunting)
  - “giving back” and “making a difference”



# Who can benefit

- Government agencies and functions
  - NPWS, Forestry Corporation of NSW, Local Land Services and Crown Land Estate
  - Local Government
  - Emergency response, biosecurity control, containment or exclusion zones
- Land owners and managers
- Conservationists
- Regional communities
- Anyone running an IPM program
- Tax / rate payers
- Hunters



# Benefits of using organised volunteer hunters in IPM

- 25,000 Game Hunting License holders in NSW that could be potentially engaged in organised volunteer hunting programs
- Over 100 Approved Hunting Organisations (AHO) approved in NSW
- Hunters and AHO's have a wide geographic spread
- Over 62,500 animals have been removed from state forests across NSW in the last 4 years
- Recreational hunting contributes >\$500M pa to the NSW economy. That can be significantly increased through organised volunteer hunting
- Minimises cost
- Allows complimentary (highest and best) use of paid staff
- Can be used in low population densities or in country that is less accessible to aerial shooting
- Timing – allows suppression between aerial shoots, delaying the need for next aerial shoot
- Contribute to biosecurity and other data collection (i.e. threatened species)



# The Mechanics

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An organised volunteer hunting program should be:

- Fully integrated into the IPM toolbox considering the most effective use
- Customised to the needs of the organisation and program
- Formalised in an Agreement or MOU between land manager and the Organised Volunteer Hunters. Key characteristics include:
  - Mutually agreed goals and objectives
  - Both parties establish agreed minimum standards and outcomes
  - Accountability for performance and outcomes that are monitored and measured
  - Addresses the risks
    - Insurance
    - Work cover
    - Training
    - Operational management
  - Regular review and update



# Case Study 1 - NSW SUPPLEMENTARY PEST CONTROL TRIAL\*

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## Objectives

- The long-term aim of the SPC trial was to contribute to reducing the impact of targeted pest animal species on priority threatened native species and ecological communities in national parks and other conservation reserves in NSW.
- Involved using voluntary ground shooters to assist in controlling pest animals in national parks and other reserves, as a supplementary technique complementing other NPWS pest control programs.
- Was a collaboration between the NPWS and the Sporting Shooters Association of Australia NSW under a MOU
- Effectiveness was independently reviewed by the NRC



\* Natural Resources Commission (2017) Supplementary Pest Control Trial Final Evaluation Report

# Case Study 1 - NSW SUPPLEMENTARY PEST CONTROL TRIAL

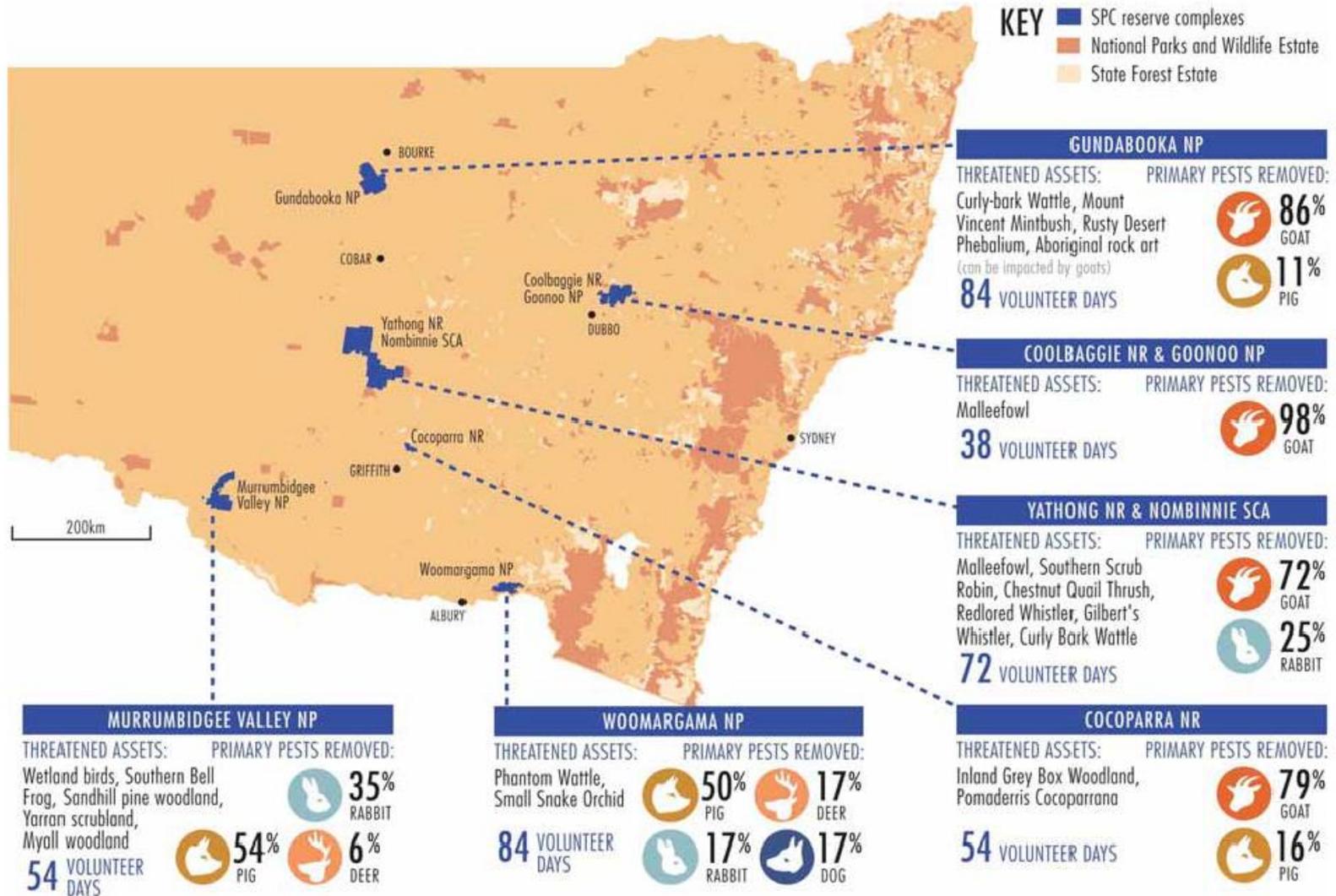
## Outcomes

- 3-year trial in 12 parks and 6 reserve complexes across the state
- 331 Volunteer days / 757 NPWS days
- ~500,000 ha
- Led to the removal of 5,655 pest animals (89 pests / ha)
- Total cost of \$5.9M (\$1043 per kill)
- Operations become more efficient over time
- Night operations were only introduced in 2016 increasing efficiency significantly

Primary target species	Number of operations	Number of primary target species removed	Total number of pest animals removed during operation
Fox	3	7	852
Fox, goat	3	18	18
Goat	16	1,396	1,664
Goat, fox	3	1,399	2,126
Pig	11	268	373
Pig, rabbit	4	568	622
<b>Total</b>	<b>40</b>	<b>3,656</b>	<b>5,655</b>



# Case Study 1 - NSW SUPPLEMENTARY PEST CONTROL TRIAL



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## NSW SUPPLEMENTARY PEST CONTROL TRIAL

### **Conclusion – the SPC Trial demonstrated that:**

- A collaborative approach between both parties was achieved
- Using appropriately trained and capable volunteer ground shooters can deliver positive pest management outcomes and social benefits.
- Volunteer ground shooting can be done safely and humanely when sufficient risk management, supervision and planning are undertaken.
- Volunteer ground shooting has the potential to be an effective supplementary pest control technique in the state's national parks and other reserves, if used as part of an integrated pest management program under controlled conditions.

**The program has now been embedded in NPWS operations**



# Case Study 2 - Sambar deer management program in Alpine National Park, Vic\*

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## Objectives

- Evaluate the effectiveness and costs of volunteer and contract ground-based shooters for controlling sambar deer
- Measure effort, results (Catch Per Unit Effort (CPUE)) and costs for volunteer and contract shooters in similar landscape management units within the NP
- Evaluate different shooting methods, equipment, space use and time of day
- Conducted by Parks Victoria using volunteer shooters from the ADA and SSAA and contract shooters from a merit-based procurement



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\* Comte S *et al* .(2022) Wildlife Research

# Case Study 2 - Sambar deer management program in Alpine National Park, Vic

## Outcomes

- 5-year program that covered a total area of >17,000 ha
  - 75 volunteers- vetted, trained and tested to meet PV standard.
  - 6 contract shooters
- 573 Sambar deer killed in 2135 hours of ground-based shooting



	Volunteers	Contractors
Deer killed	123	450
Hours expended	1051	1084
Hours per deer killed	8.6	2.4
Catch per unit effort (deer per hour)	0.12	0.42
Cost per hour	\$170	\$602
Avg cost per deer killed	\$1,449	\$1,535

# Case Study 2 - Sambar deer management program in Alpine National Park, Vic

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## Conclusion – the program showed

- The CPUE of contract shooters was 4 times greater than that of volunteer shooters
- The cost per hour for volunteer shooters was 3.5 times lower than that for contract shooters
- The total cost per deer kill was ~10% higher for contract shooters than volunteers
- Contract shooters killed Sambar deer at a faster rate but were more expensive than volunteer shooters
- Volunteer shooters were adaptive, with efficiency increasing and avg cost per deer killed decreasing over the 5-year program
- Contract shooter efficiency and avg cost per deer killed remained constant



# Call to Action

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- Funding for IPM is never enough
- Organised volunteer hunters will be well trained, well regulated, responsible, adaptable and safe
- There are a lot of them spread across NSW
- The use of organised volunteer hunters can be a cost effective and complimentary tool as part of your IPM toolbox at any scale or landscape type
- Consider the use of organised volunteer hunters in your IPM planning, establish a pilot program
- Get in touch with the Game and Pest Management Advisory Board who can help connect you to appropriate AHO's
- Email:  
[gameandpest.advisoryboard@dpi.nsw.gov.au](mailto:gameandpest.advisoryboard@dpi.nsw.gov.au)

