



# Research Strategy

## 2020 – 2024

## Acknowledgment

The Game Management Authority (GMA) acknowledges and respects Victorian Traditional Owners as the original custodians of Victoria's land and waters, their unique ability to care for Country and deep spiritual connection to it. We honour Elders past and present whose knowledge and wisdom has ensured the continuation of culture and traditional practices.

The GMA is committed to genuinely partner, and meaningfully engage, with Victoria's Traditional Owners and Aboriginal communities to support the protection of Country, the maintenance of spiritual and cultural practices and their broader aspirations in the 21st century and beyond.



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# 1 Introduction

## 1.1 The GMA

The Game Management Authority (GMA) is an independent statutory authority responsible for the regulation of game hunting in Victoria. We have a statutory responsibility to deliver programs to promote responsibility and sustainability in game hunting, and to conduct relevant research. The GMA undertakes research to support an evidence-based approach to the regulation of game hunting and to underpin the advice it provides to relevant ministers on game management issues.

## 1.2 Scope of this strategy

The purpose of this Research Strategy is to outline the GMA's research priorities and directions for the next five years. The strategy sets the direction and intent of our ongoing research effort. It includes broad research themes and principles. It will be supported by sub-strategies setting out in more detail arrangements for undertaking priority research using available resources and seeking additional resources as necessary.

## 1.3 Context

This Research Strategy will assist:

**The GMA** by articulating how the GMA's research program contributes to fulfilling the GMA's statutory responsibilities and organisational goals. The GMA has a statutory responsibility "to monitor, conduct research and analyse the environmental, social and economic impacts of game hunting and game management" under the *Game Management Authority Act 2014* (the Act). The GMA also undertakes research to assist it in fulfilling its other statutory functions and contribute to the achievement of the GMA's organisational goals.

**The Minister and government** by outlining the research that the GMA is undertaking in relation to its statutory functions and provision of advice.

**The Victorian community** by increasing awareness of the GMA's research, and providing a framework for the public to engage with the GMA and to access our range of science capabilities and outputs. We will engage the community in research and monitoring where appropriate.

### **Licensed game hunters**

by setting out how we use research in evidence-based regulation. We will investigate arrangements and methods for ensuring game hunting is sustainable and imposes minimal negative impacts on public safety and animal welfare. We also want to engage hunters to contribute and assist in field research activities as much as practicable.

**Key stakeholders** (including hunting, conservation and animal welfare organisations) by outlining the scope of GMA's research, including research on contentious and emerging issues. The strategy will also indicate areas of research where stakeholders may be engaged and contribute.

**Researchers** (including universities) by providing information on the GMA's research interests, needs and priorities, including current and new research projects, data sets we curate, potential opportunities for collaboration or co-funding, and our capacity to support research, including student projects and post-graduate studies.

**Other state and Commonwealth government agencies** to understand the GMA's research priorities, provide a basis for exploring synergies and collaboration to answer important research questions and management challenges.

## 2 Background

### 2.1 GMA vision

Game hunting in Victoria meets community expectations as a sustainable and well-regulated activity based on science and conducted in a responsible manner.

### 2.2 GMA purpose

The GMA regulates through education, research and enforcement to achieve responsibility and sustainability in game hunting in Victoria. The GMA has research obligations under the Act relating to sustainability, public safety and animal welfare. Other research activities relate to topical or emerging areas of scientific interest and evaluating new technology.

### 2.3 GMA goals

The GMA's business plan, operations and investments are guided by five strategic goals:

1. Make evidence-based education a cornerstone of our work.
2. Ensure hunting of native game species is conducted sustainably and in ways that minimise adverse animal welfare outcomes.
3. Be respected and recognised as an effective regulator.
4. Deliver risk-based and intelligence-led enforcement programs.
5. Become a learning organisation that pursues excellence.

### 2.4 The role of research in achieving GMA goals

Research plays a critical role in the GMA achieving its goals through:

- › contributing to the evidence base for making decisions, measuring business performance and targeting areas for focus or investment
- › providing a sound basis for advice to government on policy matters
- › monitoring game harvests to achieve sustainability targets
- › enabling scientific assessment of animal welfare outcomes
- › building respect in the organisation through peer-reviewed publications
- › facilitating robust monitoring of efforts to improve education and hunter compliance.



## 3 Processes

### 3.1 How we approach research

We will take a systematic approach to our research program by prioritising delivering against our statutory responsibilities and identifying areas of high harm and high risk, aiming to maximise strategic outputs from our staff and financial resources. This will be achieved by:

- › investing in areas that the GMA has a statutory obligation to deliver on, including ensuring sustainability, compliance and improved animal welfare outcomes
- › identifying and leveraging existing knowledge - literature reviews to define current “state of the art” approaches and defining key knowledge gaps that require research
- › for fields that require research and lack published studies, we will hold workshops with broad representation of the research community to build on existing knowledge, pool resources where appropriate and avoid duplication of effort
- › using horizon scanning to invest in emerging issues.

### 3.2 Funding sources

Our various research activities will have different funding arrangements and these can be divided into the following broad categories:

- › research done by GMA staff
- › research commissioned and paid by us but outsourced to consultants
- › research projects paid for and initiated by other agencies that we contribute to
- › research projects paid for by us in collaboration with universities and performed by university researchers including students
- › research delivered by us (either internally or by third-parties on our behalf) but funded by others.

Our research funding will be obtained from a range of sources including:

- › internal budgets for priority programs and ongoing monitoring
- › one-off grants for questions of interest
- › initiative funding provided by other sources
- › partnership grants (e.g. ARC linkage grants) for longer-term projects with research collaborators.

### 3.3 Engagement and promotion

To ensure that our research projects and findings reach the largest audience possible, we will publish our work in a range of forums and promote and make available those publications using a range of mediums. Our research findings will be disseminated through the following outlets:

- › peer-reviewed publications including scientific journals
- › self-published GMA reports
- › conference papers and presentations
- › magazine articles published by professional associations and in the popular literature
- › textbook chapters
- › media releases and social media posts promoting published studies
- › making publications available on the GMA website.

### 3.4 Monitoring our research progress

We are implementing governance and management arrangements to ensure effective monitoring of our research achievements. The GMA Board will play a central role in this process. The Board is the governing body of the GMA and is accountable to the Minister for the exercise of its functions. The Board has established

the Research Committee which is a subcommittee of the Board. The Research Committee supports the Board to ensure that the GMA fulfils its functions effectively and complies with its governance framework. We will apply an internal process to ensure research efforts are targeted, fit-for-purpose and contribute to meeting our statutory obligations and strategic goals. Measures will be employed to ensure both the effectiveness and efficiency of research projects and programs. Monitoring

tools we will apply to our research program will include:

- › metrics of publication quantity and quality (e.g. impact factor)
- › metrics or readership of our published research
- › reviews performed in-house, including reviews of projects and activities, and reviews of the Research Strategy
- › monitoring our performance in achieving sustainable hunting and improved hunter performance with a focus on knowledge, compliance and animal welfare.





## 4 Selection of research projects

The GMA's research program is focused on supporting us to meet our statutory obligations. We have identified high-priority projects that form the basis of our program and include ongoing programs to ensure sustainability and monitor hunter and organisational performance. In addition, the GMA undertakes research projects addressing emerging issues as they arise and funding permits. The specific research activities in response to this strategy will be documented in our annual business plans.

### 4.1 Criteria for selection and prioritisation of research

The GMA has responsibilities to ensure hunting remains sustainable (i.e. abundance, distribution, productivity and harvest levels) and this is a currently a major focus of GMA's research program.

However, GMA's statutory responsibilities span a wider range of matters relating to game hunting in Victoria. Potential research projects will be considered based on the following prioritisation criteria:

- › whether the GMA is required to address them under legislative obligations
- › whether they provide information relevant to achieving GMA business plan deliverables
- › whether they are likely to lead to significant advancement in knowledge (e.g. peer-reviewed publications)

- › whether they allow collaboration with other research institutions
- › whether they allow involvement of stakeholders
- › whether they can be addressed with accessible funding and staffing.

If a potential research project or program is determined to be high priority but cannot be undertaken within existing resources, options for obtaining the required resources will be investigated and additional resources sought as appropriate.

### 4.2 Legislative obligations

Under the Act, the GMA has a regulatory or advisory role in relation to the following aspects of natural resource management across Victoria:

- › the sustainable harvest of game species
- › maximising animal welfare outcomes for animals that are hunted and used in game hunting
- › minimising any negative impacts on non-game wildlife, including protected and threatened species
- › the conservation of wildlife habitats
- › the environmental, social and economic impacts of game hunting and management.

These responsibilities guide the general themes for our research.

## 5 Research themes

The four key themes of our Research Strategy are sustainability, animal welfare, public health and safety and public perceptions.

### 5.1 Sustainability

#### 5.1.1 Rationale

Sustainable hunting of native game requires sound understanding of the ecology and biology of game species and the effects of harvesting. Sustainability concerns also extend to non-native game species and how hunting may be used as a management tool to reduce any negative impacts.

#### 5.1.2 Objectives

High-priority responsibilities:

- › improve our understanding of game species abundance, distribution, and productivity through research and monitoring
- › monitor the extent and characteristics of game harvests
- › develop and implement an adaptive harvesting management model for Victorian waterfowl
- › develop a better understanding of Stubble Quail including effects of hunting and responses to environmental drivers.

Emerging issues:

- › investigate the effects of hunting on native non-game wildlife
- › further knowledge of the spatial ecology of game species.

#### 5.1.3 Outputs

Improved understanding of game species abundance, distribution and productivity, and the extent and effect of harvesting, including the establishment of relevant models.

#### 5.1.4 Outcomes

Victorian game hunting does not threaten the conservation status of native game and other wildlife populations and contributes to the sustainable management of non-native species.

### 5.2 Animal welfare

#### 5.2.1 Rationale

Support outcomes that allow and enable continual improvement through refined hunting methods, education and training programs, regulatory reforms and enforcement.

#### 5.2.2 Objectives

High-priority responsibilities:

- › implement monitoring of wounding in game species
- › monitor the effectiveness of education, training methods, regulation and enforcement in reducing wounding rates.

Emerging issues:

- › ensure that new technology used in hunting delivers comparable or improved animal welfare outcomes.

#### 5.2.3 Outputs

Animal welfare outcomes are quantified and monitored over time to inform improved hunting methods, management and minimum standards of hunter knowledge and performance.

#### 5.2.4 Outcomes

Adverse animal welfare outcomes for hunted game species and animals used in game hunting are minimised.

## 5.3 Environmental and public health

### 5.3.1 Rationale

Recreational game hunting brings personal health benefits for participants. However, hunting activities can pose health threats to the environment, hunters and the broader community.

### 5.3.2 Objectives

High-priority responsibilities:

- › investigate and monitor environmental and public health issues posed by game hunting, especially those related to pollution caused by hunting
- › measure levels of plastic waste produced by game bird hunting and lead (Pb) exposure in scavenging wildlife and hunters from the use of lead-based ammunition
- › monitor the effectiveness of education and training programs and enforcement activities to address environmental and public safety concerns and measure the community's perception of government's effectiveness.

Emerging issues:

- › examine food safety issues related to hunting activities
- › facilitate trials of new technology that reduces environmental and public health risks.

### 5.3.3 Outputs

Threats to environmental and public health from hunting can be predicted and minimised.

### 5.3.4 Outcomes

Victorian recreational game hunting continues to be safe for the environment, hunters and the broader community.

## 5.4 Public perceptions

### 5.4.1 Rationale

It is important to understand how the community perceives game hunting practices as they relate to sustainability, animal welfare and safety and the performance of the GMA and the hunting sector in managing these.

### 5.4.2 Objectives

High-priority responsibilities:

- › investigate public perceptions of different hunting methods and the role of regulation, education and training and enforcement
- › examine public perceptions of the performance of the GMA in achieving safe, sustainable and humane hunting.

Emerging issues:

- › assess perceptions of the GMA's performance through surveys of partner agencies, key stakeholder representative groups, hunters and landholders and communities where hunting activity occurs.

### 5.4.3 Outputs

Improved understanding of how community sectors perceive hunting practices and the role of the GMA in fulfilling its statutory obligations.

### 5.4.4 Outcomes

Community concerns related to GMA's regulation of game hunting can be anticipated and effectively addressed.

## 6. How will we deliver the Research Strategy?

### 6.1 Architecture and people

We are a regulator with a strong interest in research in order to support our vision and mission. While we are not a dedicated research organisation, our aim is to provide policy advice to government which relies as far as possible on having access to strong evidence-based research.

### 6.2 Internal resources and staff

The GMA is committed to implementing selected targeted research that answers priority questions over the next five years. This commitment has been marked by the creation of the new full-time position of Research Principal in 2020, who will coordinate the delivery of the GMA's research and monitoring programs. The appointment will establish a research culture with the GMA. This will be achieved through committing resources to building collaborative projects and prioritising peer-reviewed publications. However, the GMA will need to engage with other research services, such

as technical research staff, GIS experts and library facilities to source this expertise. As such, the bulk of our research will be contracted from third parties and we will perform limited research in-house. We desire to expand our capabilities through strategic collaboration with other researchers from other government departments (state and Commonwealth), universities and industry groups.

### 6.3 Research partners

We aim to collaborate with a broad range of researchers and have scope to design collaborative research projects with any partners that are capable and reputable.

Existing research partners include:

- › Arthur Rylah Institute for Environmental Research (Department of Environment, Land, Water and Planning): biometrician and modelling support
- › Parks Victoria: collaborative research projects
- › universities: collaborative research, funding for student projects, linkage grants
- › specific research programs

that we currently support – e.g. the Eastern Australian Waterbird Survey (EAWS)

- › peers – e.g. game managers and regulators in other states and countries.

### 6.4 Outsourcing

We will follow commercial procurement procedures for outsourcing of research from universities, consultants and government research centres.

### 6.5 Stakeholders

We want to encourage our stakeholders to participate in and contribute to our research. This may take the form of licensed hunters contributing biological samples or conservation groups contributing to abundance monitoring programs. This engagement has taken the form of occasional requests for hunter-collected samples in the past. We want to expand this role to introduce formal data and sample collection protocols to make hunters central collaborators in many research projects.

## 6.6 Our capability

To fund future research, we will seek external funding through competitive grants in collaboration with our research partners. We will look to value-add to existing game monitoring projects to collect robust data to answer specific research questions. We will review our existing research program to ensure resources are utilised efficiently and ensure our responsibilities are adequately resourced. The GMA is looking to expand its relationship with universities by funding and co-supervising student research projects in the next five years. Areas of focus will be animal welfare and native game bird biology and ecology. We will also build our internal capability: we will undertake training of GMA staff in field research methods and ensure GMA staff are kept up to date with relevant contemporary developments in game management research from around the world. Our currently capability consists of one full-time staff member, the Research Principal, who is managed by the Director, Strategy and Research, with oversight from GMA Board members forming a Research Committee. GMA field staff also play a role in collecting field data (e.g. conducting bag surveys, hog deer checking stations, and waterbird monitoring).

## 6.7 Communications

Achieving a broad spectrum of readership is essential for effective dissemination of research findings on complex and contentious socio-political issues such as hunting. We will strive to make research and monitoring reports and outputs broadly accessible. To maximise awareness of our research outputs, we will employ a three-tier communications strategy, consisting of:

- › scientific publications (articles in peer-reviewed journals such as *Wildlife Research* and *Wildlife Society Bulletin*), conference presentations and textbook chapters
- › popular articles in hunting and conservation magazines such as *Australian Deer* and posted on our website and social media pages

- › presentations at community meetings and workshops.

To build our scientific credibility as an organisation, we will aim to publish our research in peer-reviewed journals with high-impact factors and that are highly available to local and international readers.

## 6.8 Application of research findings

Research findings will be used to inform management decisions and allow the GMA to improve evidence-based recommendations to government on policy matters.



## 7. Review

This strategy will be reviewed annually by the Research Committee. Any changes will be referred to the Board for endorsement.





