

Department of Jobs,
Precincts and Regions

Response to the Waterfowl
Adaptive Harvest Model:

Expert Panel Review



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1 Response to the Waterfowl Adaptive Harvest Model: Expert Panel Review

The Victorian Government is committed to implementing adaptive harvest management to set harvest objectives, improve the way in which game duck numbers are assessed and to inform duck season arrangement decisions.

An expert panel was commissioned to review Victoria's proposed approach to adaptive harvest management for duck hunting and in October 2019, it provided its report *Waterfowl Adaptive Harvest Model: Expert Panel Review*.¹

The expert panel's report supports Victoria's proposed approach to adaptive harvest management², suggests additional desktop studies and highlights the importance of strong stakeholder understanding, involvement and support for the establishment of a robust and evidence-based approach to harvest management.

All the expert panel's recommendations are supported (Table 1), with the exception of Recommendation 3, (modelling of waterfowl relative abundance using historical datasets) which is not being pursued at this time due to issues with the lack of suitability of some data for modelling purposes, and cost.

Consistent with the findings of the expert panel report, work is already underway to develop a monitoring program to collect data to inform the harvest model component.

The Game Management Authority (GMA) commissioned design of the monitoring program and it has been trialled in a helicopter survey conducted in November 2020. Data is currently being analysed and a draft evaluation report with recommendations will be prepared by March 2021. Model-based estimates of abundance gathered in this study will also be used to test the ability to predict game duck abundances with monitoring data collected in New South Wales.

Also in response to the expert panel report, historical data has been modelled to determine the relationship between seasonal harvest regulations and the size of the recreational harvest.

The Victorian Government will develop a game duck harvest management framework and accompanying harvest strategy in collaboration with key stakeholders in 2021. The framework and strategy will have sustainability at its core. This process will work collaboratively with key stakeholders to identify possible management objectives and support a clear understanding of the approach to adaptive harvest management.

Stakeholder forums will provide the opportunity to:

- better understand and discuss adaptive harvest management and the use of modelling to achieve harvest objectives and reduce uncertainties about waterfowl harvest management
- develop a harvest management framework that incorporates the development of harvest management objectives, model development, implementation and review, monitoring and reporting, and evaluation with review cycles and
- provide input into developing harvest management objectives collaboratively which will be central to a harvest strategy.

The expert panel provided broad ranging discussion of other issues and these will be considered, including increased cooperation with other eastern Australian jurisdictions. DJPR will lead discussions on framework and strategy development and the GMA and scientists will conduct research to ensure an accurate and effective adaptive harvest model.

The Victorian Government thanks the panel for its report.

¹ Prowse, T., Briggs, S., Cooney, R., Kingsford, R., Klaassen, M., Webb, G. and Whitehead, P., (2019) *Waterfowl Adaptive Harvest Model: Expert Panel Review*, October. Available at <https://djpr.vic.gov.au/game-hunting>

² Ramsey, D., Pacioni, C., McLeod, S. and Dundas, S. (2017) *Towards the implementation of adaptive harvest management of waterfowl in south-eastern Australia*, Arthur Rylah Institute for Environmental Research Technical Report Series No. 284, December. <https://www.gma.vic.gov.au/research/duck-research>

2 Table 1 - Responses to Findings and Recommendations

Rec / Finding number	Main Panel Recommendations and Findings (2019)	Response	Comments
F1	The suggested population monitoring and modelling framework is theoretically sound and appropriate (i.e. 2017 report)		
F2	However, given the modelling proposed requires additional survey effort, the panel recommends that a desktop study should be conducted initially		
R1	Review available datasets relevant to waterfowl in Victoria and adjacent areas, and identify data deficiencies	Support	Existing datasets will be reviewed to identify data deficiencies and explore the possibility of developing models of relative waterfowl abundance. As part of the design of a monitoring program (see R2), historical game duck harvest offtake has been modelled to determine the relationship between seasonal harvest regulations and the size of the recreational harvest.
R2	Identify survey designs required to estimate the abundance of game duck species with given accuracy and precision;	Support	The GMA commissioned the design of a monitoring program to estimate the abundance of game duck species with given accuracy and precision. <i>Design of a monitoring program for ducks</i> was published in June 2020. The design was tested in a trial in November 2020 (see R7).
R3	Undertake modelling of waterfowl relative abundance using historical datasets	Not supported at this time	Issues with data suitability, resource cost and interstate experience in attempting to use existing datasets suggest this approach might not provide a cost-effective contribution in the Victorian context.
F3	Strong stakeholder understanding and support will be essential for the establishment of an adaptive approach to harvest management that incorporates mathematical models		
R4	A broader harvest management planning framework be developed through a collaborative multi-stakeholder process, within which a conceptual model of waterfowl population dynamics can be discussed and evolved with stakeholders	Support	A Victorian Game Duck Harvest Management Framework will be developed in consultation with key stakeholders. The framework will foster a clear understanding of how game duck harvest management will operate in Victoria.
R5	The review of existing datasets, and models developed using existing datasets, should be presented to stakeholders, with examples of how model outputs can be operationalised and embedded within a broader management strategy	Support	Appropriate datasets and example models will be presented and clearly communicated through the Victorian Game Duck Harvest Management Framework.
R6	A simple harvest management framework be adopted initially, to clearly translate waterfowl monitoring and data on rainfall/wetland availability into harvest recommendations	Support	A simple interim harvest management framework is currently being considered.
R7	Ongoing development of the adaptive harvest model for waterfowl can be pursued simultaneously as a longer-term goal to assist management, noting it will require additional investment in modelling and data collection	Support	Development of the adaptive harvest model for waterfowl will be pursued simultaneously as a mid-term goal. A monitoring program to inform the harvest model has been designed (see R2). GMA commenced a trial to test the rigor of the monitoring program design in November 2020 using helicopters to survey game duck abundance and an analysis of satellite imagery to determine the extent of available habitat. Model-based estimates of abundance gathered in this study will also be used to test the ability to predict game duck abundances with monitoring data collected from the Riverina region of NSW. A draft evaluation report will be prepared by the end of March 2021.

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