

 $17^{th}$  May, 2024 **Bryce Ronald William Boyd** | **PhD Candidate** Queensland University of Technology School of Mathematical Sciences

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**Editorial board**, PLOS ONE

Dear members of the editorial board,

## Submission of Manuscript for Consideration by PLOS ONE

We wish to submit a new manuscript entitled "The influence of resource use on yield versus sale price tradeoff in Australian vineyards" for consideration by PLOS ONE.

In this manuscript we explore natural resource use in agricultural wine production, emphasising sustainability in the trade-off between the sale price and quantity of product. We explore the economic and environmental risks induced by producing grapes at greater yields. We find that lower grape sale price is not solely related to the overall expenditure of resources but rather to efficient management, as well as regional and climatic variations. We use novel, extensive nationwide data from Australia, collected over a decade by Sustainable Winegrowing Australia. We construct and analyse several models of the multifaceted, multi-resource nature of vineyard management.

We believe that this manuscript is appropriate for publication by PLOS ONE as it demonstrates the sustainability of different winegrowing production strategies across Australian winegrowing regions. These results illustrate the relationship between human interaction and the environment as driven by agricultural management strategies and the resources required to achieve the necessary outcomes to maintain economic sustainability using environmental resources. Thank you for your consideration of this manuscript.



Bryce Boyd (corresponding author) on behalf of all coauthors: Kate Helmstedt, Mardi Longbottom, Kerrie Mengersen

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