

Manuscript writing

Tony Palmer
Animal Production Institute
Grahamstown



Introduction

Peer-reviewed articles ('papers') are the accepted means of recording and communicating ideas and findings in science. However, the process of scientific writing, especially for beginner scientists, is an arduous one, and scathing reviews of submissions often permanently discourage promising students.



Outline

Getting started
Developing the paper
Relevant, recent literature
The writing process
Endnote
Submission
Response to reviewers/rebuttals



The basics

- Developing the idea for a paper
 - Read the recent literature
 - Discussion with peers – GSSA, AZEF, networks
 - Knowledge about the area of your research interest
 - What questions need to be answered
 - A qualitative model or narrative approach
 - A new method or technique
 - Join a team on a proposal
 - Identifying co-authors



What is a qualitative model?

- It is the narrative about the scientific understanding of a discipline. Usually contained in a review paper. It identifies the short-comings in understanding and what is needed to improve that.
- In the literature there will be pointers to the difficult things that still need to be explained. Few if any scientific paper stand on their own – they should all point to short-comings of the understanding and ask more questions. It is the identification of these questions by the paper writer that need to be identified and followed up. In this way you are adding to the qualitative model.



Identifying co-authors

- The law of three/fifths (3/5)
 - The idea
 - The money
 - The data collection
 - Writing the paper
 - Data analysis



Potential co-authors

Supervisors
Mentors
Google Scholar
Research collaborators



Suggested co-authors

D Ennis
J Yoniss
M Zepfel
S Fuentes
D Taylor
C Macintyre-Ng
R Whalley
J O'Keefe
A Ainlie
A Aris
M Robertson
V Kokenko
M Hoffman
M Villet
M Williams
J Lloyd
G Kestey
C Hart
S Higgins
M Rutherford
L Prowse
I Riggs
P Novellie
C Macintyre-Ng
H Zimmermann
M Peet
R Palmer
R Linko
J Hoffmann
D Le Maire
D Fairbanks
J Vlok
L Mucina
K Romatree
F Keller
F Rubin
[View all co-authors](#)



The writing process

- Initial layout
 - How will your work contribute to the those short-comings identified by the literature
 - Example – impact of elevated CO₂ on savanna. How can an understanding of water use efficiency (WUE) contribute to this?
 - Develop a TOC – Introduction, M&M, Results, Discussion, Conclusions, Acknowledgments
 - Begin to populate the TOC



The writing process (cont.)

- Example of a question that we can develop together – impact of elevated CO₂ on savanna. How can an understanding of water use efficiency (WUE) contribute to this?



Hindawi Publishing Corporation
Research Letters in Ecology
Volume 2007, Article ID 37364, 5 pages
doi:10.1155/2007/37364

Research Letter

Is Climate Change a Possible Explanation for Woody Thickening in Arid and Semi-Arid Regions?

Derek Eamus and Anthony R. Palmer



1. The concentration of CO₂ in the atmosphere ([CO₂]_a) has been increasing since the start of the industrial revolution.
2. This rise in [CO₂]_a has two effects: (i) it increases rates of photosynthesis of woody plants, typically of about 30 to 50 %. Photosynthesis is enhanced more in woody shrubs (+45 %) than grasses (+38 %) or trees (+25 %) in response to CO₂ enrichment; and (ii) stomatal conductance of woody plants is decreased by about 20 %. C₄ grasses show a smaller response to CO₂ enrichment than C₃ plants such as shrubs and trees.
3. The growth rate of trees and shrubs is enhanced by increased [CO₂]_a because of the stimulation of photosynthesis and decreased photorespiration. Importantly, the proportional increase in tree growth is larger under xeric than mesic conditions.
4. Pan evaporation rates have declined globally, including across Australia.



Global Change Biology (2010) 16, 964–976, doi: 10.1111/j.1365-2486.2009.02030.x

Thicket expansion in a South African savanna under divergent land use: local vs. global drivers?

BENJAMIN J. WIGLEY, WILLIAM J. BOND and M. TIMM HOFFMAN



and an increase in tree cover at the commercial site. The analyses showed highly significant increases in tree cover at all sites. Total tree cover increased from 14% in 1937 to 58% in 2004 at the conservation site, 3–50% in the commercial ranching area and 6–25% in the communal farming area. Reconstruction of past land use practices showed large differences in stocking



- Greater [CO₂]
- More soil water
- Stomata need to stay open for shorter time to accumulate the same amount of C
- = more C/mm ET
- = Improved WUE



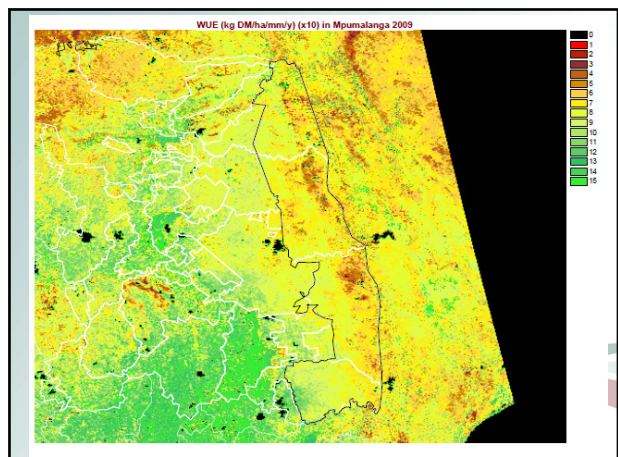
These papers all point to an expected increase in water use efficiency?

- Do we have any data to show this?
- Lets plan an analysis of the NPP and ET data from MODIS programme to assess this.



$WUE = NPP / ET$ (kg C/ ha/mm/ annum)

What data do we have?



Populating the TOC

- Introduction
 - Short review of literature and end with the primary reference that identified the short-coming in the research.
- Material and Methods
 - Describe the methods that you have used to add this new insight/piece of data that will contribute to the understanding.



Populating the TOC (cont.)

- Results
 - Short and succinct with lots of illustrations – Figures and Tables tell much more than 1000 words, and editors love them because there is nothing worse than screeds of text!!!!
- Discussion
 - Here you can expand on how your work has improved the understanding that already exists.



Populating the TOC (cont.)

- Conclusion
 - Short and succinct. Also, what now needs to be done to improve our understanding further.
- Acknowledgments
 - Funders (not employer); those who contributed but fell outside the 3/5th rule. No one else (not Mum or Dad)!!!



Cite while you write : Procite, Reference Manager and Endnote

- Capturing references in a suitable system right from the start is a great help.
- Learn how to optimize your use of this technology
- Learn how to prepare automatic citation formats for several journals. This saves lots of time when you are submitting/revising



Submission process

- Selecting a suitable journal.
 - Local impact is important for young scientists, so choose a journal where the editor or members of the editorial panel are likely to recognise you even in double blind reviewing.
 - More experienced people need to aim higher, so look at current impact factor and relevance
 - Register with journal's online submission process
 - Download a recent copy of a published paper.
 - Check format requirements – in text and reference list



Copyright transfer agreements

C. PERMITTED USES BY CONTRIBUTOR


1. Submitted Version. Wiley-Blackwell licenses back the following rights to the Contributor in the version of the Contribution as originally submitted for publication:

a. After publication of the final article, the right to self-archive on the Contributor's personal website or in the Contributor's institution's/employer's institutional repository or archive. This right extends to both intranets and the Internet. The Contributor may not update the submission version or replace it with the published Contribution. The version posted must contain a legend as follows: This is the pre-peer reviewed version of the following article: FULL CITE, which has been published in final form at [Link to final article].


b. The right to transmit, print and share copies with colleagues.



2. Accepted Version. Re-use of the accepted and peer-reviewed (but not final) version of the Contribution shall be by separate agreement with Wiley-Blackwell. Wiley-Blackwell has agreements with certain funding agencies governing reuse of this version. The details of those relationships, and other offerings allowing open web use, are set forth at the following website: <http://www.wiley.com/go/funderstatement>. NIH grantees should check the box at the bottom of this document.



<input type="checkbox"/> U.S. Government work	Note to U.S. Government Employees A contribution prepared by a U.S. federal government employee as part of the employee's official duties, or which is an official U.S. Government publication, is called a "U.S. Government work," and is in the public domain in the United States. In such case, the employee may cross out Paragraph A.1 but must sign (in the Contributor's signature line) and return this Agreement. If the Contribution was not prepared as part of the employee's duties or is not an official U.S. Government publication, it is not a U.S. Government work.
<input type="checkbox"/> U.K. Government work (Crown Copyright)	Note to U.K. Government Employees The rights in a Contribution prepared by an employee of a U.K. government department, agency or other Crown body as part of his/her official duties, or which is an official government publication, belong to the Crown. U.K. government authors should submit a signed declaration form together with this Agreement. The form can be obtained via http://www.opsi.gov.uk/advice/crown-copyright/copyright-guidance/publication-of-articles-written-by-ministers-and-civil-servants.htm
<input type="checkbox"/> Other Government work	Note to Non-U.S., Non-U.K. Government Employees If your status as a government employee legally prevents you from signing this Agreement, please contact the editorial office.
<input type="checkbox"/> NIH Grantees	Note to NIH Grantees Pursuant to NIH mandate, Wiley-Blackwell will post the accepted version of Contributions authored by NIH grant-holders to PubMed Central upon acceptance. This accepted version will be made publicly available 12 months after publication. For further information, see www.wiley.com/go/nihamandate .



Thank you

