

Ecological responses to recent climate change

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ANTARCTIC ECOSYSTEMS

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Scientific Writing

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The establishment of a new ecological guild of pollinating insects on sub-Antarctic South Georgia

P. CONVEY¹, R.S. KEY² and R.J.D. KEY³

Journal of Biogeography (J. Biogeogr.) (2009)

ECOLOGY

Antarctic Biodiversity

Peter Convey and Mark I. Stevens

Forms of plant and animal life can be found across Antarctica that have survived glacial cycles over millions of years.



ORIGINAL
ARTICLE

Contrasting phylogeographical patterns for springtails reflect different evolutionary histories between the Antarctic Peninsula and continental Antarctica

Angela McGaughran^{1*}, Giulia Torricelli^{1,2}, Antonio Carapelli², Francesco Frati², Mark I. Stevens³, Peter Convey⁴ and Ian D. Hogg⁵

Outline

- Why do we write?
- Writing - the fundamental purpose
- Theses and papers
- Proposals
- Different types of proposals
- Writing - how is a document structured?
- Writing - tricks to make it easier!
- Submission and reviewing

Writing - the fundamental purpose

- Depends on the type of document
- Any scientific writing tells a specific story, is focused and concise (same with posters, presentations, media etc)
- Reader/listener needs to know:
 - Why is this important (background)
 - What was/is to be done and how
 - What results obtained/expected and analyses done
 - How this fits in existing knowledge, and how it moves field forward
 - Who will be interested/how will this change the world?

Theses

- Know your University's formatting requirements ... and follow them!
- Many thesis chapters are written in 'paper format', or are even published papers
- Thesis demonstrates what YOU (the student) know and, importantly, that YOU did the work
- Combines elements of review and primary research in a way a standard paper does not
- Considerably more expanded presentation of Methods (have to show YOU understand them) and Results
- In examining, attention to detail (syntax, grammar, formatting) may seem petty, but is clear sign of your thoroughness and commitment (this applies to all writing!)

Proposals (1)

- Many different types, often very low success chances - funding agencies oversubscribed and look for easy reasons to reject - avoid giving them!
- Some are multi-stage - preproposal and full proposal
- Be VERY REALISTIC about your 'fit' to all parts of a call's specifications
- You are selling importance and relevance, not only interest, novelty....avoid being labelled 'parochial'
- Same principles as a paper - solid logical argument, demonstration that key jigsaw pieces are/will be available
- State information and logic explicitly, do not assume it is implicitly obvious and that reviewer will do the work for you!
- Be prepared to apply in two or more cycles

Proposals (2)

- Central element is always a 'science case'
- Requirements for 'supporting information' differ, key to supply them
- Follow formatting instructions, word limits etc
PRECISESLY!!
- Ask 4 simple questions of your draft:
 - Why me? (have you justified why someone should fund YOU to do this and that YOU are the right person?)
 - Why now? (why is it important that this research is done NOW?)
 - Why here? (why is this region of the world/institute/group APPROPRIATE for doing this?)
 - So what? (why does this research MATTER?)

Why do we write?

- Science is about communication!
- 'Publish or perish'!
- Major 'deliverable' in a scientist's job
- Means by which assessed as career develops
- Productivity also reflects on research group, department, etc (output indicators!)
- Product expected by the funder/employer
- Many funding agencies demand data made accessible
- If public funds you, the public has the right to know what you do...!

Writing - structure (1)

- Although similar principles, check all proposal instructions carefully
- Typical full research paper/proposal has 3-5,000 words of text, some (much) less
- Title - concise, informative, attention grabbing, accurate
- Abstract/Summary - short - what did/will you do, what major results/outcomes are expected, why important
- Introduction - relevant background and literature. States aims/hypotheses/questions of this proposal
- Methods - relevant description, techniques (don't expand on standard techniques, use citations); can include 'proof of principle' illustration of data already obtained

Writing - structure (2)

- Everything in your text, including expected results if discussed - must be clearly relevant to your key questions
- Place in context of existing knowledge, highlight novel results, ideas and advances
- References - correct format in every detail for proposal, must match those used in text exactly (nb web links may not be accepted/followed up)
- Tables/Figures - stand alone (clear explanatory caption), good to break up text and give impression of space, minimise overall number (use multi-panel figures)
- Supporting sections often included on stakeholder interest/impact
- Timeline/GANTT chart often required, has to be realistic and defensible, important reviewing point

Writing - tricks to make it easier!

- Start with a simple 'straw man' outline - **the basic structure and backbone** story of your document
- Stick closely to central aim/question - **ALL** text must be relevant to it
- If appropriate, discuss with supervisor/manager/mentor when to show drafts - don't think it has to be perfect first!
- Think of each section as several paragraphs, each para will have 50-300 words in final document
- Within sections, write structure first as bullet points for subjects of each para
- Many paragraphs can then be written in 5-15 minutes!
- Get language checked/edited by a native English speaker!

Submission and reviewing

- Follow instructions closely (usually web submission)
- DO NOT wait to last minute, there are virtually never extensions!
- Covering letter/public summary must be well constructed - briefly and clearly state novelty and importance of work
- If reviewer suggestions required, then give them - funding agency will typically use about half of your and half of their own suggestions
- More rarely, specify people not to ask as reviewers (will need a reason!)
- Treat reviewer suggestions carefully and positively
- Carefully construct response/rebuttal document, if call includes the opportunity to give one
- Cross fingers tightly!!