BIOL365: Marine and Terrestrial Ecology

Practical 5: Your phylogeny

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What to expect today

1. Initial guidance
2. Limited help with your assignment
3. FYI, I updated the Tips and Tricks

Initial guidance

- Statistics
  - Might make it easier to talk about your assignment
- Length
  - Only as long as you need
- Components
  - Phylogeny + outgroup
  - Inferred trait evolution
  - Description of evolution (1–2 paragraphs)
  - References, Genbank numbers, and R code

Initial guidance

- Rubric
  - We tell you EXACTLY what you need for full marks
  - Full guidelines and rubric on Moodle since Week 1
  - Rubric at end of your Prac 4 manual *as well*

Table 1: A description of each assignment component and what is expected to achieve a particular score for that component (total possible mark sums to five)

Component	1	0.5	0
1a	A phylogenetic tree of appropriate size (>7 and <30 tips, excluding outgroup) is provided	A phylogenetic tree of inappropriate size (<7 or >30 tips excluding outgroup) is provided	No phylogeny is provided
1b	An appropriate (e.g., relative within the same family or subfamily) outgroup is provided	An inappropriate (very distant or internal relative) outgroup is provided	No outgroup is provided
2a	Traits for all tree tips (excluding outgroup) are included and inferred along the phylogeny	Traits for only some tree tips (excluding outgroup) are provided and/or not inferred along phylogeny	No traits are provided
2b	Trait evolution across the phylogeny is well described. For example, and if relevant to their data, the student describes how and where the trait has changed (within which clades or species); how that trait might be related to another (if another was measured); the range, mean, or median values of that trait across the phylogeny or in particular groups; etc.	Trait evolution across the phylogeny is poorly thought out and explained. The student misses major patterns in the phylogeny or describes them particularly poorly. A clever student might describe their patterns to their demonstrator or lab mates in one of the pracs prior to submission	No description of trait evolution is provided
2c	(i) Genbank accession numbers, (ii) references to trait sources, and (iii) student R code are all provided	Only 1–2 of the references (see left) are provided	None of the references are provided

Part B; a foreword

- Rubric has also been up since Week 1
- This is more based on the science (less so coding)
- Grant writing — *can be difficult*, but is very important
- You will NEED to think and use literature to justify asking for money
- Justifications:
  - Blue-sky reasons (easier; follow up research, etc.)
  - Importance to Australia — or the country your taxa are found in. This is harder, but you're a third year and you can do this and we want to challenge you
- *Rubric does not specify that you need to use the same phylogeny for part **a** and **b**

Did you finish early?

1. Help your neighbour
2. Work on your assignment and seek help or advice (keeping in mind that others doing the Prac might need more help)
3. ???
4. Okay, fine you can go if you've checked with your demonstrator