

## SUPPLEMENT TO FIRST REVIEW

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| The location and number of section headings are appropriate and helpful, however the names of the headings are generally vague or confusing e.g.: “Problem statement” instead of: Introduction  | We will run through the section headers and improve the section headers      |
| “In conclusions” instead of: Conclusion   | We will edit this in the paper   |
| “PR longevity estimates in recent literature; a lake of confusion” instead of: Literature confusion of PR estimates.  | We will edit this in the paper   |
| The paper has a number of pointers to things within the article that are vague and distracting to the reader. E.g. line 16 page 1015: “either hypothetical or speculative (see above)”. Consider either deleting the vague pointers or alternatively point to the section directly e.g. see section 3.1. These pointers in generally make the article appear to be poorly structured when in fact it is well structured   | We will ensure that the pointers will directly point to the relevant section |
| Line 1 Abstract: typo Indispensable   | We will amend this in the paper  |
| Line 6 Abstract (and elsewhere particularly page 1025): 16 000 MtPR in 2010 to 65 000 MtPR suggest changing units to Gt so as to remove unnecessarily zeros. Line 6 page 1007: doubled up use of the word essential: “essential plant nutrient essential”   | Agreed. We will amend this in the paper                                      |
| Line 18 page 1007: (Dery and Andersson, 2007; Cordell et al, 2009) Mohr and Evans 2013 (philica 380) have also examined peak phosphorus.  | We will include a reference to Mohr and Evans in the paper                   |
| Line 11 page 1010: “Approximately 82%... remainder for other industrial purposes” This sentence requires a reference.   | We will include a source for this statement in the paper                     |
| Line 5 page 1019: “and the remainder is considered an occurrence in view of the great depth at which these deposits are located (70% at depths between 5000 and 30 000 feet, or 1500 to 9000 m, Bauer and Dunning, 1979, 162–263 and 199–200).” It would be useful to state the current depth of some deep mining that current occurs – e.g. platinum in South Africa to highlight the extremeness 9 km and the current maximum depth of phosphate rock mining. | We agree this would be useful. We will elaborate on this in the paper        |
| Line 12, page 1019: “in sum” delete.  | Noted. We will edit this in the paper  |
| Line 12 page 1024: “Conversion to concentrate would significantly further reduce the quantify that can be recovered as concentrate”. Suggest to delete word significantly (or attempt to quantify it).  | Noted. We will delete the word "significantly"                               |
| Line 2 page 1024 (and elsewhere): use of the word decennia, suggest changing this to decade(s)  | Noted, we will amend this in the paper                                       |
| Line 5 page 1028: typo: In conclusion.  | Noted, we will amend this in the paper                                       |