

Referees 1 & 2 both recommended we take a more more conciliatory tone in the text. We have changed the text as follows:

Page 5, Line 21:

From: “In a disappointing piece of scholarship Verheijen et al. (2013) then state that “aDGVM has not been validated with observational data nor does it include trait trade-offs”.”

To: **Verheijen et al. (2013) then state that “aDGVM has not been validated with observational data nor does it include trait trade-offs”.**

Page 5, Line 25:

From: “In Scheiter et al. (2013), a paper the authors cite and by implication have read, we identified trade-offs and their representation in DGVMs as the central challenge for next generation DGVM models.”

To: **In Scheiter et al. (2013), a paper cited by the authors, we identified trade-offs and their representation in DGVMs as the central challenge for next generation DGVM models.**

Page 7, Line 21:

From: “That is, while we recognise that a statistical approach may seem pragmatic, we suspect that it might be a dead end.”

To: **That is, while a statistical approach seems pragmatic, it is not clear whether identifiable statistical models and appropriate data that describe all the important sources of variation can be defined.**

Referee #2 asked us to add a little text to provide a synthesis on trait-based approaches.

Page 8 from line 8:

From: “We hope that this comment has made some of the real differences between the two approaches more apparent to both developers and users of DGVM models. In summary the important difference is that Verheijen et al. (2013) use a direct statistical method to parameterise plant functional diversity, whereas Scheiter et al. (2013) define trade-offs between plant functional traits, which allows functional diversity to emerge as a by-product of the model’s dynamics.”

To: **We hope that this comment has made some of the differences between the two approaches more apparent to both developers and users of DGVM models. In summary the important difference is that Verheijen et al. (2013) use a direct statistical method to parameterise plant functional diversity, whereas Scheiter et al. (2013) and Pavlick et al. (2013) define trade-offs**

between plant functional traits, which allow functional diversity to emerge as a by-product of model dynamics. The approach followed by Scheiter et al. (2013) and Pavlick et al. (2013) is reliant on the specification of trade-offs between functional traits, how they together with modelled and forced environmental factors influence birth, death and growth rates in the models. While this may sound simple in principle, Scheiter et al. (2013) outline some of the non-trivial challenges involved in developing such models to the stage where they can approach the reliability of existing DGVMs.