Response to Editor Minor Revisions

1) The title is very general as it refers to ‘small islands’ in general, while the paper considers ‘small low-lying islands’. I suggest adding ‘low-lying’ to the title as well.

Response: We agree with this suggestion and the title has been updated accordingly.

2) The authors need to be consistent in the use of ‘freshwater’ as one word or two words (I prefer one word).

Response: The use of one or two words was applied depending on whether the term was an adjective (i.e. freshwater lens) or a noun (i.e. fresh water). The text has now been changed with freshwater appearing only as one word.

3) The authors now specify specific yield and porosity, as requested by both reviewers. I don't understand how porosity can range from 0.1 to 0.2, while the specific yield is 0.2. The specific yield is always smaller than the total porosity.

Response: Thank you for spotting that discrepancy. The value for specific yield was incorrectly provided. This has been amended to 0.15, the same as the assumed effective porosity.

4) Recharge has dimensions length per time (HESS policy). Annual recharge is given in mm/year, but monthly recharge is given in mm. Please correct that to mm/month. Other recharge rates used in the paper should be checked.

Response: All instances of recharge values have been updated to be provided in either mm/year or mm/month units.

5) Reviewer #2 correctly states that (comment 9) hydraulic conductivity (and other factors) controls gradient, not the topography. The response of the authors is that higher topography allows for a thicker lens. That is only the case if the lens is limited at the top by the land surface (is it here?), as the sea level is the same on either side. Furthermore, a thinner lens results in a higher gradient when the flow is the same. (Flow = k * lens thickness * gradient). So the authors should really reconsider their response to this comment as I don't think a general statement on the relation between higher topography and gradient can be made.

Response: We agree that hydraulic conductivity is a major control on gradient, and recognise the confusion in our comments regarding the role of topography. This section intends to highlight the differences between the northern and southern regions and how this may impact the resilience to climate change stressors. In this instance, the hydraulic conductivity is assumed to be constant between the north and south and therefore is not a factor. The main differences are related to lower recharge and smaller landmasses in the south, and not topography directly. The lower hydraulic gradient is a result of a thinner lens, due to a lower maximum inland hydraulic head, which is the main driver of groundwater flow towards the coastline. Therefore, where the lens is thinner (and hydraulic conductivity is assumed to be constant), the hydraulic gradient is also lower. The text has been changed to reflect this, as follows:

“Several factors contribute to the difference in response between the northern and the southern regions: 1) the south is composed of smaller landmasses, resulting in smaller areas for the freshwater lenses to develop; 2) significantly less rainfall occurs in the south, meaning that there is less recharge to sustain the freshwater lenses; and 3) lower recharge results in a thinner lens developing, leading to lower hydraulic gradient of the freshwater lens.”