

Anonymous Referee #3

We thank the anonymous referee for reviewing our work.

General comments:

Section 2.1 - the paper makes use of a number of different instruments and datasets with varying instrument accuracies. However it is not clear how these different instrument accuracies are accounted for and whether these may or may not impact the overall trend analysis.

The dataset accuracies are high, with nominal accuracies of between ± 0.002 and $\pm 0.05^\circ\text{C}$ (Roughan *et al.*, 2022). Due to their small size these accuracies are not explicitly accounted for in our trend analysis, however, they fall within the range of uncertainty.

The acronyms are unnecessarily complicated. The author also uses the acronym and the full name for the sample site interchangeably within the text.

We have edited the figures and text to always use the site names, rather than the acronyms as follows:

NRSPHB -> Port Hacking

NRSMAL -> Maria Island

NRSNSI -> North Stradbroke Island ('NS Island' in Figure 6 to save space)

CH100 -> Coffs Harbour

BMP120 -> Batemans Marine Park ('Batemans MP' in Figure 6 to save space)

Line 129 - avoid confusion by renaming the combined trend method after one of the trends used.

In addition to the text on L129, we have edited the text after first referring to the TSSE trend on L173 as follows:

Trends estimated using both the EEMD and TSSE (combined Mann-Kendall and Theil-Sen Slope Estimator) methods are compared at Port Hacking and Maria Island ...

Line 149 - "expect trends to be sensitive to the time period choice" - do you show this anywhere in the paper by way of explanation?

We have modified the text on L149 as follows:

Although data are available since 1944 at Maria Island, we estimate long-term temperature trends at this site between 1953 and 2022 for consistency with Port Hacking. ~~as we expect trends to be sensitive to the time period choice~~

The Discussion would be easier to understand if you follow the same format as your Results section. It reads a little disjointedly. Section 4.2 would probably fit better within the Methods section. There is also a repetition of information through the Discussion section (e.g. line 274-279).

We have reorganised the discussion section to follow a similar format as the results section. We have separated Section 4.1 into 2 subsections:

4.1 Contextualising the observed trends

4.1.1 Surface Warming

4.1.2 Subsurface Warming

We have decided to keep section 4.2 in the discussion section as it relies on the uncertainty estimates that we show in the results section. Additionally, we have added text in Section 4.2 relating to analysis comparing the Port Hacking 2 m accelerating EEMD trend with a piecewise linear fit in response to a comment posted by Reviewer 2. We do not believe this additional text would be better placed in the methods section.

We have also removed repetition in the discussion.

Line 300 - You refer here to "Sydney" which is not noted on your Figure 1, nor previously in text. Please amend as not all your readers will be local.

We have changed "Sydney" to "Port Hacking" in the text here.

Line 8 - "at in the top 20 m" ?

We have changed this to:

...in the top 20 m...

Line 21 - comma after "(...2019)"

We have added a comma here.

Line 73 - "...starting in the 1940/50s to present"

Line 126 - Finish sentence after (Hamed and Rao, 1998), Start new sentence with "As..."

We have modified the text on L73 and L126 as suggested by the reviewer.