

Interactive comment on “The “Dirty Weather” diaries of Reverend Richard Davis: insights about early Colonial-era meteorology and climate variability for Northern New Zealand, 1839–1851” **by A. M. Lorrey and P. R. Chappell**

Anonymous Referee #3

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This is a strong review of an important resource. It is well written and meticulously analysed. It is suitable for publication in *Climate of the Past*, providing the following minor points are addressed:

Page 3806: ‘The barometers would have been calibrated to the highest institutional standards’. Can more detail be provided on the strength of these standards? Have there been homogenisation studies on shipboard barometers that have verified their reliability?

Page 3807: Please present the regression equations and correlation coefficients, either
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here or in the supplementary materials.

Page 3808: I appreciate that the modern analog spatial field method is explained in detail in Lorrey et al. (2013), but I would like to see a bit more information here. What is the exact period of modern data used to generate this method, and are there any broad-scale climatological features (such as extent of Antarctic Sea Ice that may negate the assumption of stationarity between the modern period and reconstruction period that underpin this approach? New Zealand is not a climatic region that I normally work with, so please forgive me if my comment comes from a place of ignorance.

Page 3811: ‘Average pressure measurement offset corresponds to the expected negative pressure departure due to the altitude increase from the harbour.’ Can this be elaborated, or references provided?

Page 3817–3818: Have there been any other studies to reconstruct cyclones over this region in the mid-nineteenth century? If so these should be mentioned here for comparison.

Page 3818: Last paragraph here is repeated later (page 26) so should probably be removed

Page 3820: Is this section really about verification, rather than comparison with today? Section 5.3 has the latter aim. I appreciate the terminology (weather versus ‘mean and extreme conditions’) used in the subtitles of these two sections has different connotations, but I think this should be clearer.

Page 3821: It is unclear exactly what ‘changes’ this section and figure 7 refer to. Is this changes through the period 1831–1851, or changes with respect to more recent climatologies?

Page 3822/Table 3: given that the differences are in extremes, I wonder if the differences are related to the thermometer used, rather than true differences. It may be helpful to consider this.

Page 3823: 'Proxy evidence of past ENSO activity indicates...'. Please provide references

Figure 9: Temperature anomalies are difficult to see. Would it be possible to amend the colour scale?

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