Please find below our responses to the Reviewer's comments. We have in fact made changes to the paper based on the reviewer's comments but hope we have communicated these changes in a clear way below.
Your feedback was very much appreciated and we hope will make the paper clearer.

RC1:
The overall impression is very positive. The manuscript presents ambitious project of assessing usefulness Blue Intensity as climate proxy for Australia region. Although several interesting and valuable dendroclimatic studies exist for that part of world, a lot of though-provoking questions remain without answers. Substantial field, lab and intellectual effort back the manuscript. Needless to say the exploratory character of the research sometimes results in some incompleteness and shortcomings. It is untestable since the research is setting up the new directions of tree-ring studies in the region, not summing up some long persuaded topics. One of the shortcomings his is very much visible in way how the methods and results are handled.
We hope the modified version of the paper is now clearer.

It is difficult to follow the terminology, authors are joggling different BI parameters without proper descriptions, and what is worse without reasoning why they decided to use particular one instead of other. All these are rushed and create impression of rather chaotic structure. I strongly recommend putting some effort to make the manuscript clear and consistent it this aspect. Most of the elements are there therefore and it would be easy to improve the manuscript in terms of fluent presentation of research.
We hope the modified version of the paper is now clearer.
Specifically – in the initial introduction we describe the general use of the term Blue Intensity (BI) in the current literature. We later refine the parameter definitions for this paper with the sentences: "To minimise nomenclature confusion, we refer to the reflectance parameters as earlywood blue intensity (EWB) and latewood blue intensity (LWB). Based on ecophysiological theory (Buckley et al. 2018) we posit that EWB, derived from maximum intensity values of the whole-ring reflectance spectrum, essentially provides a surrogate for mean lumen size of the earlywood cells, while LWB, derived from minimum reflectance values, reflects the relative density (i.e. proportion of cell wall to lumen area) of the darker latewood cell walls. " and later w.r.t. DB: "Björklund et al. (2014) proposed a statistical procedure that could correct for such colour changes. This procedure subtracts the LWB reflectance value from the EWB data producing a delta parameter (hereafter referred to as Delta BI - DB). Theoretically, DB should correct for common colour change biases between heartwood and sapwood and even resinous zones within the wood. To date, DB has been utilised successfully in only a few studies (Björklund et al., 2014, 2015; Wilson et al., 2017b; Fuentes et al. 2018; Blake et al. 2020; Reid and Wilson 2020)."

Again the really missing pieces of information is how and why certain BI parameter were selected, e.g. it is first time that earlywood maximum blue reflectance intensity, latewood minimum blue reflectance intensity were employed in dendroclimatic analyses thus authors are obligated to provide the proper description of the parameter, especially what Blue Reflectance registers and what are the possible errors while measuring it. The publication of Buckley et al. 2018 is very good example how the introduction of the relatively new parameter can and should be done.
This is not the first time that these parameters have been used in dendroclimatic analysis and Buckley is one of a growing number of papers. We hope now the methodology and overall description is clearer. We believe the parameter description is now clearer.

The additional recommendation would be to describe vegetation and climate of the studied region in comprehensive way. The tree species, forest, and climate are exotic to most of the readers. We would be able to appreciate the importance of results much better knowing basic information about subject of the

research – trees and forest of this part of New World. The traditionally included in papers chapter description of the study site could be seen as outdated and not relevant but sometimes is beneficial and discussed manuscript is good example of it.

We understand the reviewer's comment here and in the "Data Methods" section have expanded the site description to better communicate the relative positions of these sites to theoretical tree-line (elevation or latitude). We further emphasise that the samples chosen for this BI assessment were sites that have already been used in previous dendroclimatic analyses and there is a wealth of information in earlier papers that does not need to be repeated here. Finally, we would like to emphasise that the BI parameter (and associated QWA data) are identifying new parameter/climate relationships that are quite different to what we would expected from RW alone.

The new text for this section is: "Four tree species from Tasmania and four from New Zealand were targeted for analysis (Figure 1, Table 1) representing conifer species that have not only been the focus of previous dendrochronological studies, but each has the potential to produce climate proxy records substantially greater than 1000 years in length. Until recently, RW data were used for most Australasian dendroclimatological studies, with calibration results never exceeding 40-45% explained variance. In Tasmania, the strongest calibration results for summer temperatures had been obtained using high elevation Huon pine (Lagarostrobos franklinii - Buckley et al. 1997; Cook et al. 2006) although some coherence was also found for Pencil pine (Athrotaxis cupressoides) and King Billy pine (Athrotaxis selaginoides - Allen et al. 2011; Allen et al. 2017). The study sites (Table 1) for Pencil pine (MCK and CM) and King Billy pine (MWWTRL and MRD) are located close to the upper timberline limit of these species and growth is expected to be controlled mostly by summer temperatures. Likewise, the high elevation Huon pine (MHP) site is also close to the upper treeline where summer temperature is the dominant response (Buckley et al. 1997). However, BUT is located at the lower end of the Huon pine elevational range within a riparian environment so temperature limitation is unlikely in a traditional sense. However, Drew et al (2013) identified strong summer temperature signals in latewood QWA data for this site. Celery Top (Phyllocladus aspleniifolius) RW data, however, express a complex non-linear relationship with climate along its species' elevational range and have not been used for dendroclimatic reconstruction (Allen et al. 2001). By contrast, summer temperature calibration experiments performed on measurement series of several wood anatomical properties (e.g. tracheid radial diameter, cell wall thickness and microfibril angle), as well as RW and ring density, from these same species, have shown substantial improvement over RW alone (Allen et al. 2018), although these QWA data have been more useful for hydroclimate reconstructions (Allen et al. 2015a/b). In New Zealand, RW-based summer temperature reconstructions have been developed from NZ Cedar (Libocedrus bidwillii - Palmer and Xiong 2004), Silver pine (Manoao colensoi - Cook et al. 2002, 2006) and Pink pine (Halocarpus biformis - D'Arrigo et al. 1996, Duncan et al. 2010) although ring density (Xiong et al. 1998 – Pink pine) and BI (Blake et al. 2020 – Silver pine) measured from the earlywood have produced stronger results. For this study, we specifically measured BI from samples used in previous, mostly RW-based dendroclimatic, studies where summer temperature was found to be the dominant climate signal - at least for NZ Cedar, Silver pine and Pink pine. The sites for these three New Zealand species are close to their southern (latitudinal) limits (especially the Stewart Island Pink pine site) which is thought to compensate, to some degree, for their modest elevational range (Table 1). Kauri (Agathis australis) is the longest-lived tree species in Australasia (Boswijk et al. 2014) but only a few sites of reasonably mature trees exist. Previous analyses have identified a complex mixed response to both temperature and precipitation through the growing season (Buckley et al 2000, Fowler et al, 2000). However, it is notable that Kauri RW data express a strong stable relationship with indices of the El Nino Southern Oscillation (Cook et al. 2006; Fowler et al. 2012)."

The last but not least issue concerns the title. It is inadequate to entitle manuscript "Evaluating the dendroclimatological potential of blue intensity on multiple conifer species from Australasia" having

virtually zero data from main part of that region – the Australia continent. I suggest authors try to imagine their reaction to the publication "Evaluating the dendroclimatological potential of blue intensity on multiple conifer species from Italy" based on sites only from Sicily and Sardinia. Technically this is territory of Italy but it is kind of obvious that something is missing, isn't it. Thus the title should be corrected to adjust to real geographical coverage of the research.

The title is now changed to: "Evaluating the dendroclimatological potential of blue intensity on multiple conifer species from Tasmania and New Zealand"