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Comment on essd-2021-345

Hayley C. Cawthra (Referee)

Referee comment on "MIS 5e sea-level history along the Pacific coast of North America"
by Daniel R. Muhs, Earth Syst. Sci. Data Discuss.,
https://doi.org/10.5194/essd-2021-345-RC4, 2021

It has been a great pleasure to review Daniel Muhs' review paper 'MIS 5e sea-level history along the Pacific Coast of North America'. This is a long and complex geographic area to cover, with a lengthy history of investigations of its Quaternary deposits, and the author has described the records in a carefully thought out and clear way, with excellent figures to supplement the text. I felt that the accompanying database of sea-level records for the WALIS compilation was well referred to and it cross references well.

In addition to the MIS 5e deposits and their relevance in a context of RSL, this review lays out the role of antecedent structure in the deposition and preservation of these features; biological and geological indicators of sea level and the ranges of accuracy associated with them; benefits and limitations of various dating methods; and a useful comparison to younger (Holocene) and pre-MIS 5e sea-level records. The final section 'Future research directions' provides useful tips for topics that could merit additional work, based both on a thorough literature review and observations based on personal field experience.

I have only three very minor suggestions and one point to consider:

To further expand on the limitations of using marine terraces as indicators of RSL, considering repeated reoccupation by sea-level stillstands

In Lines 35 and 40: the use of the word 'complex' had me thinking of an igneous intrusive complex, so perhaps just refer to 'the last interglacial'?

Please re-run a check of abbreviations as I noted that some were expanded more than once in the main text (GIA, LIG, RSL).

I have no doubt that this paper will be well received by the community. Again, it was a pleasure to review.

Kind regards,

Hayley Cawthra