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Ocean Science Discussions

Interactive comment on "Are tidal predictions a good guide to future extremes? – a critique of the Witness King Tides Project" *by* John Hunter

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From the outset, I have no concern over the quite detailed analysis undertaken and presented within the manuscript which for all intents and purposes provides an interesting insight into the difference between the highest predicted astronomical tide during any given year and the actual highest recorded water levels around the world's coastlines.

However, as a critique on the utility of the actual "Witness King Tides Project", I have concerns that the modest objectives of the original projects in Australia have been unwittingly mispresented in the manuscript as to confer a more measurable, scientific output from these citizen science endeavours.

As noted correctly by the author, the idea had its origins in January 2009 in NSW,

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Australia but the objectives of the exercise were indeed quite modest from a scientific perspective. The intention first and foremost was to use the predictable coincidence of a king tide visible during daylight hours, to raise public awareness at the more fundamental local level about the prospect of predicted sea level rise from climate change and how that might impact local landscapes using a king tide as a visual reference plane of sorts. In its crudest form, the public messaging was as simple as visualising water levels possibly up to a metre deeper than what you observe of the king tide by the end of the century under high range sea level projections.

The day needed to be set well in advance to have the opportunity to condition the public and align state and local government staff participation in what proved a stunningly successful public awareness initiative that has grown roots and expanded rapidly with more accessible internet and telecommunications tools. The event itself was augmented by numerous publications, presentations and media to explain the relationships between predicted tides, actual water levels and sea level projections into the future. The initiative quickly evolved into a national and more recently international event.

The paper makes the point at line 13 that “A critical assumption of WKT is that the annual highest astronomical tide is a good proxy for the actual highest water level during the year, both in timing and height” and then goes on to scientifically address this assumption. However, this as described in the objectives outlined above, was never a critical assumption in developing the concept. A high predicted tide, visible during daylight hours, with sufficient time to promote, provide technical support and public messaging, coordinate and attend to relevant IT requirements were all key considerations in planning such an undertaking. Despite technological advancements and well-established modern WKT networks, engaging with the public in a meaningful way through these citizen science style projects still requires planning and commitments in advance that wont necessarily line up with real-time physical phenomena that can significantly raise water levels above predicted tides as noted by the author.

In the main, my key concern is that the objectives of the WKT are not accurately de-

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scribed in the paper. The linkages to scientific assessment of the difference between the highest predicted tide in any year and the peak measured water level during daylight hours are almost incongruous to critiquing the WKT project? Some thoughts perhaps for the author to consider.

Thankyou for the opportunity to review the work.

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