

Interactive comment on “Post-glacial flooding of the Beringia Land Bridge dated to 11,000 cal yrs BP based on new geophysical and sediment records” by Martin Jakobsson et al.

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We appreciate the positive and insightful comments by Prof. Julie Brigham-Grette. We will follow the suggested revisions as specified in detail below.

1. Regarding the use of Beringia and the Beringia Land Bridge. We can see that we made several errors and have not been strict with the terminology, mainly because we did not pay enough attention to how the two terms have been used in literature. In the revision, we will use “Bering Land Bridge” consistently. The title will therefore be revised to include “Bering Land Bridge” rather than “Beringia Land Bridge”.

Furthermore, the following sentences will be included in the introduction to avoid con-

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fusion: “The term Beringia has later been used to include the entire stretch from the MacKenzie River in Canada to the Kolyma River in northeast Siberia. Here we use the term Bering Land Bridge for the specific subaerial connection that formed during lower sea level and permitting crossing Bering Strait by foot.” Following this, we exchanged “Beringia Land Bridge” to “Bering Land Bridge” throughout the paper.

2. (Page 3) Regarding the added error of post-glacial tectonic movements in estimation of the Bering Land Bridge, we acknowledge that tectonic movements in addition to those caused by isostatic readjustments may also play a role. While this is nothing we can quantify, we add “other tectonic movements” to the list of uncertainties on page two, line 5.

3. (Page 5) The age models and their dependence on reservoir corrections is a difficult subject. The two studied cores 2PC-1 and 4-PC1 are no doubt among the best dated in the Arctic Ocean. There are 14 AMS radiocarbon dates constraining the former and 8 constraining the latter age model. Despite this, there are large uncertainties to be considered. As pointed out in the review, most prominent among the uncertainties is the assigned ^{14}C marine reservoir age used in the calibration from ^{14}C year to calendar years using the Marine13 calibration curve (Reimer et al. 2013). We are aware of this issue and have included large uncertainties in the applied reservoir corrections. We have applied a reservoir correction of $\Delta R = 477 \pm 60$ years in core 2-PC1 derived through the notion of the identified Aniakchak tephra layer (known age of 3.6 ka) by Pearce et al (2017). We used $\Delta R = 300 \pm 200$ years in the Holocene part of 4-PC1 Hence we do not apply $\Delta R = 477 \pm 60$ directly as assumed by the reviewer, instead we adopt a lower value since the core is located deeper and is influence by younger Atlantic water. We acknowledge the limitation and uncertainties of this method, but we are glad that our approach is accepted and agree with the point that the assigned ΔR may not hold when more data become available. 4. We did not make it clear in the introduction of the discussion that the first cultures that inhabited North America likely travelled by boat, and were pre-Clovis. This is now included with a reference. 5. We

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will add Sedimentation rate curves in Figure 7.

All the other minor points will be included in the revised manuscript, we thank the reviewer for the careful and constructive review and for spotting several inconsistencies, such as that we made some errors regarding the core name.

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