

From: Matt Lees mlees@stanford.edu
Sent: Monday, May 1, 2023 1:19 PM
To: disb@deltacouncil.ca.gov
CC: Roberta Tugendreich robertat@stanford.edu

Subject: Public comments on draft prospectus

Delta Independent Science Board,

My name is Matt Lees and I am a PhD student studying land subsidence at Stanford University. My expertise is in subsidence caused by aquifer compaction, as opposed to shallow subsidence triggered by soil oxidation. Nonetheless, I have reviewed the [draft prospectus](#) for Managing Subsidence in the Sacramento-San Joaquin Delta and have the following (minor) comments.

1. Overall - it looks a great prospectus for what sounds to be a very interesting review.
2. Page two, paragraph one contains a line which reads:
"Currently, farmers apply high-quality surface water to fields to leach salts (Hanson and Carlton 1979; Meyer et al., 1979), which may slow the oxidation of peat soils if water levels are above peat soils."
I found it hard to reconcile the word 'currently' with the references, both of which are from 1979. You could consider either finding more recent references, or rearrange the sentence to make it clear what the references are referring to.
3. Page two, paragraph one contains this statement about reversal of subsidence rates:
"Total cessation of oxidation has been achieved by some public agency landowners who have permanently submerged their land to promote the growth and subsequent accumulation of local wetland vegetation (Valach et al., 2021). As a result, land elevations have increased, i.e., subsidence has been reversed, at rates of 1.0-1.4 in yr⁻¹ (Miller et al., 2008; Deverel et. al. 2020), at some locations by maintaining shallow water levels on land."
I found the description of reversal of subsidence rates confusing because it did not give a case. I skimmed Deverel et. al. (2020) and it seems that the cause of accretion of sediments, i.e. deposition of new sediments on top of the peat, that leads to land surface rise. Consider explicitly mentioning this mechanism to make it more clear how/why subsidence can be reversed.
4. Page three has a reference to "scientific needs". This was a little unclear - I think it could be refined to describe "identified gaps in scientific knowledge" or "causes of uncertainty in our scientific understanding".

My final comment would be a recommendation of extending invitations to Dutch experts on peatlands land subsidence, if you have not done so already. I was recently at a conference in the Netherlands where I learnt of a large active community on this exact topic. Here are a few suggestions of relevant experts. These are people I met in person - so very happy to send an email of introduction- let me know if that is of interest. I should note that they operate the Zegveld experimental farm, where they are trying to evaluate how agricultural management practices impact peatlands subsidence and CO2 emissions, which would be very relevant information for the Delta.

- [Jan van den Akker](#) (Wageningen University)
- [Esther Stouthamer](#) (Urecht University)
- [Sanneke van Asselen](#) (Deltares)

Good luck with the workshop and review,
Matt

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