

47: Few rodent species persist throughout the Arctic. Lemmings are by far the most abundant and widespread and are consequently identified as a keystone species in tundra environments (Krebs 2011). *Current wording contains confusing negatives.*

65: Somewhat awkward phrasing that makes the reader search for what the 'gap' in question is (carbon cycling). Could consider rephrasing this sentence to be more clear, e.g. "The current body of literature does not explore lemming impacts on carbon cycling, leaving a crucial gap in our understanding of how one of the main herbivores influences this rapidly changing ecosystem especially in light of Arctic warming."

70: would suggest changing "the disturbance" to "herbivory" or "targeted herbivory" because the authors suggest in their response to reviewers that the level of herbivory experienced in the enclosures is normal. "Disturbance" suggests a treatment effect that is above normal or what the enclosed areas would experience without the experiment.

76: remove "their" – currently it implies the lemmings are recovering, not the vegetation

79: we measured what in the plots? Suggest: "..., we measured vegetation in the plots again to evaluate vegetation recovery from grazing"

88-92: some issues with tense here, as previously the authors used exclusively past tense. Suggest changing here or committing to present tense elsewhere, and double-checking for consistency throughout. Additionally, line 88 seems to be leftover from a previous draft? I think this part is meant to include only line 89 on.

104: I still really love this figure. Too few of these kinds of papers include some vivid photographs of the experimental setup, and it's so helpful!

132: this seems like an example of the previous sentence, so "additionally" feels like an awkward word choice. Perhaps, "to wit," or "for example," etc.?

149-152: repeated paragraph? Delete

168: suggest "for inclusion in the experiment". Current phrasing is a bit confusing, implies the lemmings were immediately placed in the enclosures.

172-173: confusing phrasing. Suggest: "Each plot contained different vegetation types (mosses, lichens, graminoids, and wet sedges) and each pair was ensured to be as similar in composition as possible..."

175-176: order of phrasing here is confusing. Suggest merging these two sentences. "We placed control plots within 1m of their paired lemming plot to keep environmental factors as similar as possible within pairs; we located each pair of plots approximately 3m away from each other."

206: this table is great! Really makes the sampling timeline clear, and what the authors measured. Very much appreciate this addition and think it adds a lot.

232: would be helpful to use consistent phrasing to describe each summer. “following” and “subsequent” seem like two different summers despite both being 2019. I suggest using “...before and after the the first summer’s manipulations (2018) as previously described and to track the seasonal development of NEE during the second summer (2019). In the second summer, we used a ...”

406, 407: remove these lines (repeats the following line)

423-427: this paragraph seems like it should be placed in the same paragraph as the one above, preceding that text (e.g. placed at line 415 before the text that is currently there). In its current placement the information feels redundant even though the authors are discussing different data.

452-456: these repeated lines seem like a formatting error but highlighting in any case

457-461: are the authors referring to changes to spatial effects on vegetation given the risk of predation and its impacts on lemming foraging behavior? I think this final paragraph could be fleshed out a tiny bit more; what kinds of changes to foraging behavior are they referring to and how would that change carbon storage/cycling? My first instinct is spatial changes in carbon cycling given changes to lemming foraging, but risk of predation could also cause more physiological changes to lemming populations that would indirectly affect carbon (see Hawlena and Schmitz work on fear effects on grasshopper behavior and physiology). But the long and short of it is that this final paragraph could use 1-2 specific examples of the kinds of proposed predator effects on carbon cycling re: effects on lemmings that the authors are discussing here (especially as they bring up predators in their conclusions, which otherwise don’t occur in the body of the ms).

475: replace “the” with “carbon”

TAKEAWAY:

The reading of the manuscript has improved greatly with the inclusion of the reviewers’ comments. I appreciate the efforts the authors have made and the changes asked for, and think that the final product is clearer, more “punchy”, and that the substantial research summarized therein is highlighted much more effectively. The above line edits are, for the most part, minor, with the exception of my one comment on adding a few sentences to the discussion (lines 457-461, highlighted in green for ease). I commend the authors on the work they have done, and am happy to recommend the paper to be accepted with technical corrections and handed over to the journal’s editors for that work with the authors.