

Interactive comment on “Coupled local facilitation and global hydrologic inhibition drive landscape geometry in a patterned peatland” by S. Acharya et al.

Anonymous Referee #1

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The manuscript, “Coupled local facilitation and global hydrologic inhibition drive landscape geometry in a patterned peatland,” utilizes process based models to explore landscape patterns in the Florida Everglades. This work is both relevant and important for enhancing or understanding of the process driving landscape patterns. This manuscript is well written and requires very few changes prior to publication. The authors effectively describe the target landscape and why there is a great need to understand the processes driving ridge slough patterns. Effectively describing other leading theories for pattern formation in this system, the authors focused on a few gaps in current theories, which provided great support in their efforts to use the self-organizing

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canal hypothesis to explain ridge slough dynamics. The authors used multiple criteria based on six statistical and geostatistical properties observed in reference portions of the Everglades landscape to evaluate model performance and test the applicability of using the self-organizing canal hypothesis which incorporates positive local feedbacks and global negative feedbacks (based on hydrology). The methodology and statistical analysis were appropriate and the results were well presented. Small improvements can be made to this work by incorporating information regarding limitations of the approach (cellular automata) and statistical and geostatistical properties used to determine model performance.

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