

Fencing to exclude livestock does not reverse hydrologic alteration or restore species composition once degraded

Grazing alters species composition in fens

Fens are wetland ecosystems that accumulate peat where groundwater creates perennially saturated, anaerobic conditions. Fens can be degraded by any activity that alters hydrology or exposes peat to desiccation, including excessive livestock use. Land managers have fenced some degraded fens in an effort to restore them. However, the effects of livestock exclusion on fens are not well known. We studied paired fenced and unfenced fens over a nine-year period to examine the effects of livestock exclusion.

Key Findings

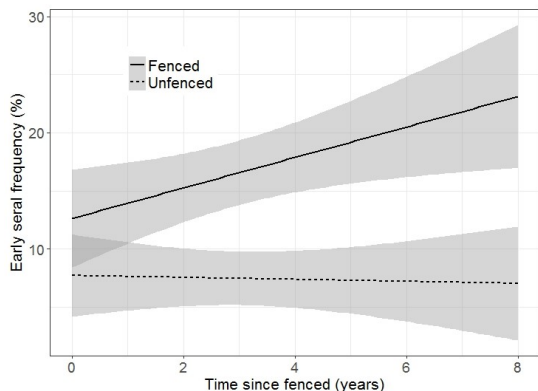
- Fencing increased the frequency of tall, competitive grasses, including early seral and upland species. Litter cover also increased after fencing, while moss cover declined.
- Without selective herbivory, species composition may more closely reflect the underlying abiotic conditions of the fen, including hydrologic or nutrient status.
- Fencing alone does not restore fen wetlands, and more active measures to restore fen hydrology and species composition may be needed.
- There may be some role for grazing to maintain healthy fen ecosystems. However, it must be carefully managed to avoid the potential for livestock to alter fen hydrology or to expose peat to desiccation.



Old House fen before (left) and after (right) fencing



Channels and exposed peat indicate fen degradation



Without grazing, the frequency of early seral species increased

Link to the full publication:

Merriam, Kyle E., Scott H. Markwith, and Michelle Coppoletta. 2017. Livestock exclusion alters plant species composition in fen meadows. *Applied Vegetation Science* 21(1): 3-11.

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