



Determining the response of plant functional and phylogenetic diversities to changes in management in lowland fens: implications for ecosystem processes and environmental change

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Human pressure on fen peatlands has created the need to implement management practices to restore and reconnect fragmented fens. However, the way in which different components of biodiversity respond to changes in land use and management is still poorly understood. A key research question is how functional and phylogenetic diversities of fens respond to changing levels of management. Understanding the consequences of management for fen vegetation composition is vital, not only for explaining the impacts of disturbance on biodiversity and ecosystem processes, but also for elucidating how such habitats may respond to future environmental change. Here, we use linear mixed-effects models and a combined measure of functional-phylogenetic diversity and show that phylogenetic diversity is more sensitive to management effects than functional diversity. High levels of disturbance resulted in plant communities with significantly lower phylogenetic diversity than relatively undisturbed sites. Management promoted a filtering effect of phylogenies and traits that are capable of tolerating such disturbance levels. These results have implications for the long-term management of lowland fens, since intensifying disturbance of ecosystems can lead to reduced resilience and increased vulnerability to future environmental change.

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FCUL (Building C2), 12h00-13h00, room 2.2.14