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Conference Abstract

Are alien grasses winning the race in the Antarctic?

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Abstract

Across Antarctic and the sub-Antarctic islands, satellite data is demonstrating widespread "greening" as the continent changes colour. However, the role that grasses (*Poales*) play in this greening remains unclear. This process may have significant implications for biodiversity and the functioning of polar ecosystems. Of particular interest is the potential for notoriously aggressive alien grasses to threaten critical endemic sub-Antarctic island ecosystems. However, current evidence of this occurrence spans a mix of biogeographic contexts and research methods, creating uncertainty about the drivers of grass population change and the consistency of responses. By systematically reviewing available evidence of directions of population changes across both native and alien grasses, we identified the most frequent drivers, including climate change, anthropogenic disturbance and biotic interactions such as interspecific competition and facilitation. Evidence for population change is variable, and both taxonomically and geographically skewed. There is clear evidence for a net increase in grass populations across the region, but contrary to expectations it is more frequently native species expanding in the region, including in the sub-Antarctic. Our evidence supports the need for continued ecological biodiversity research to monitor how climate change and anthropogenic activities will continue to alter vegetation community dynamics, particularly on sub-Antarctic islands where alien and native grasses are more widely distributed and diverse. Here, I will explore the context-dependence of alien and native grass change across the Antarctic, reveal why native species appear to be performing better, and place these

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findings within broader decision-making requirements to address the synergistic threats of biological invasions and environmental change in these unique ecosystems.

Keywords

Poales, alien species, Antarctic greening, community shifts, population change, climate change

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Conflicts of interest

The authors have declared that no competing interests exist.