Supplementary information

The role of substrate characteristics and temperature for potential non-native plant establishment in maritime Antarctic ecosystems

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Figure 1. Monthly-specific diurnal patterns in photosynthetic active radiation. PAR values recorded on Anchorage Island (field) and the simulation of month-specific diurnal patterns in experimental chambers for germination studies.

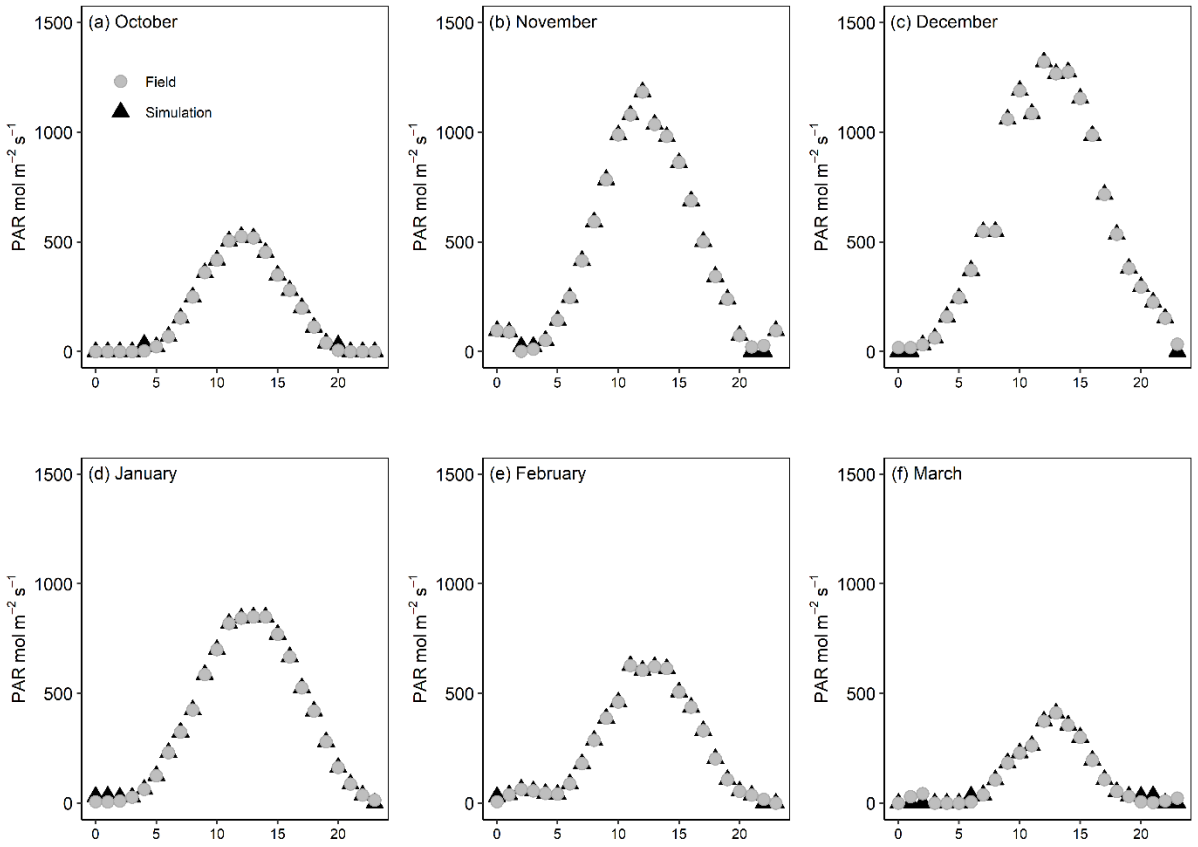

Figure S2. Correlation between plant length and biomass for *Holcus lanatus* (a), *Taraxacum officinale* (b) and *Trifolium repens* (c). Plants were grown in potting soil at 15 °C. Each data point represents an individual plant. Lines show correlation and ninety-five per cent confidence intervals are represented by grey shading.

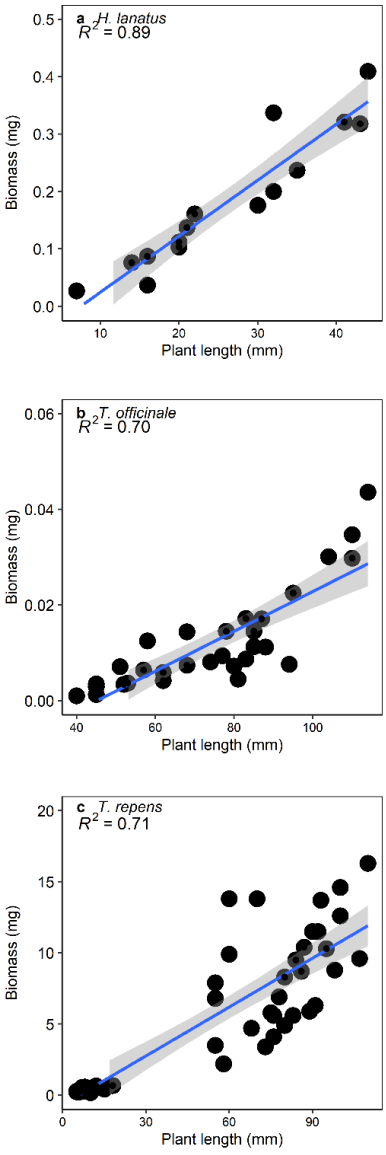

Figure S3. Potential plant growth across ice-free regions in Admiralty Bay on King George Island. Lower panel indicates larger growth potential for *Holcus lanatus* at Point Thomas, a site currently invaded by the grass *Poa annua* L. (Galera *et al*. 2021). Low, medium and high growth potential is based on the site-specific substrate characteristics and the growth response across substrates (see Fig. 1 and Table 4).

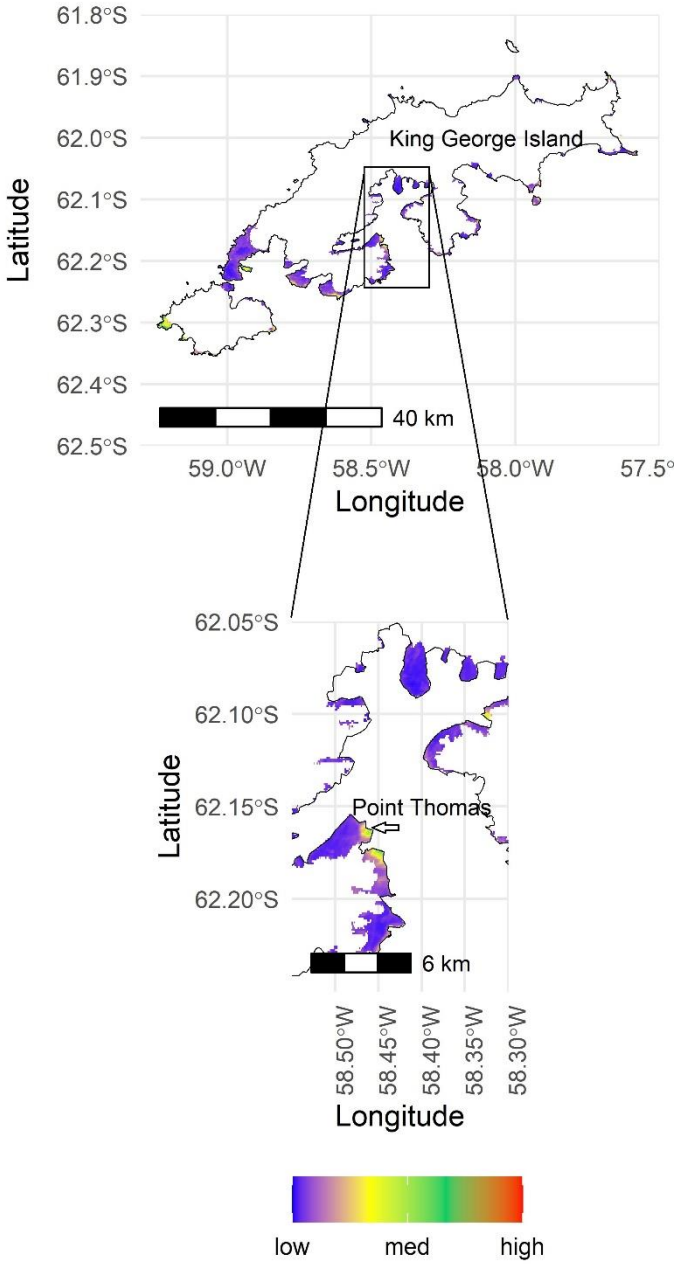

Table S1. Correlation matrix of substrate characteristics of the nine sampled study sites. Values in bold indicate a significant correlation ($P < 0.05$).

	LOI	%N	%C	%P	C:N	N:P	pH	PO_4-P	NH_4-N	NO_3-N
LOI	1	**0.99**	**1**	**0.85**	0.62	0.55	**-0.76**	**0.85**	**0.78**	0.43
%N	**0.99**	1	**0.98**	**0.91**	0.54	0.48	**-0.76**	**0.92**	**0.84**	0.48
%C	**1**	**0.98**	1	**0.83**	0.63	0.57	**-0.77**	**0.84**	**0.78**	0.44
%P	**0.85**	**0.91**	**0.83**	1	0.29	0.18	-0.66	**0.98**	**0.79**	0.56
C:N	0.62	0.54	0.63	0.29	1	**0.85**	**-0.85**	0.36	0.31	0.41
N:P	0.55	0.48	0.57	0.18	**0.85**	1	-0.67	0.33	0.33	0.48
pH	**-0.76**	**-0.76**	**-0.77**	-0.66	**-0.85**	**-0.67**	1	**-0.7**	-0.56	-0.6
PO_4-P	**0.85**	**0.92**	**0.84**	**0.98**	0.36	0.33	**-0.7**	1	**0.8**	**0.7**
NH_4-N	**0.78**	**0.84**	**0.78**	**0.79**	0.31	0.33	-0.56	**0.8**	1	0.4
NO_3-N	0.43	0.48	0.44	0.56	0.41	0.48	-0.6	**0.7**	0.4	1