

Ecography

ECOG-05075

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The world's southernmost tree and the climate and
windscares of the southernmost forests. – Ecography
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Supplementary material

Appendix 1. Supplementary Figures.

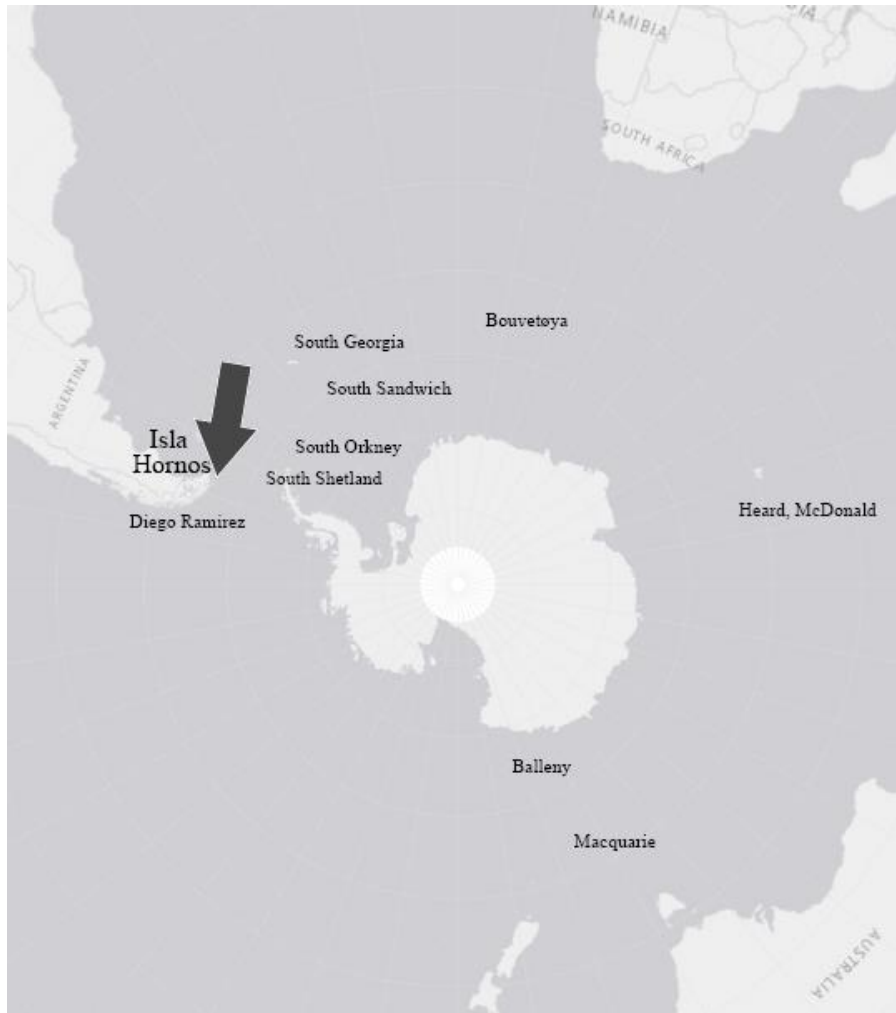
Supplementary Figure A1: A map of the southern ocean and islands referenced in the text.

Supplementary Figure A2: Images of trees and plots.

Supplementary Figure A3: Topographical data utilized in the analysis.

Supplementary Figure A4: Growing season threshold analysis and comparison to published alpine limits.

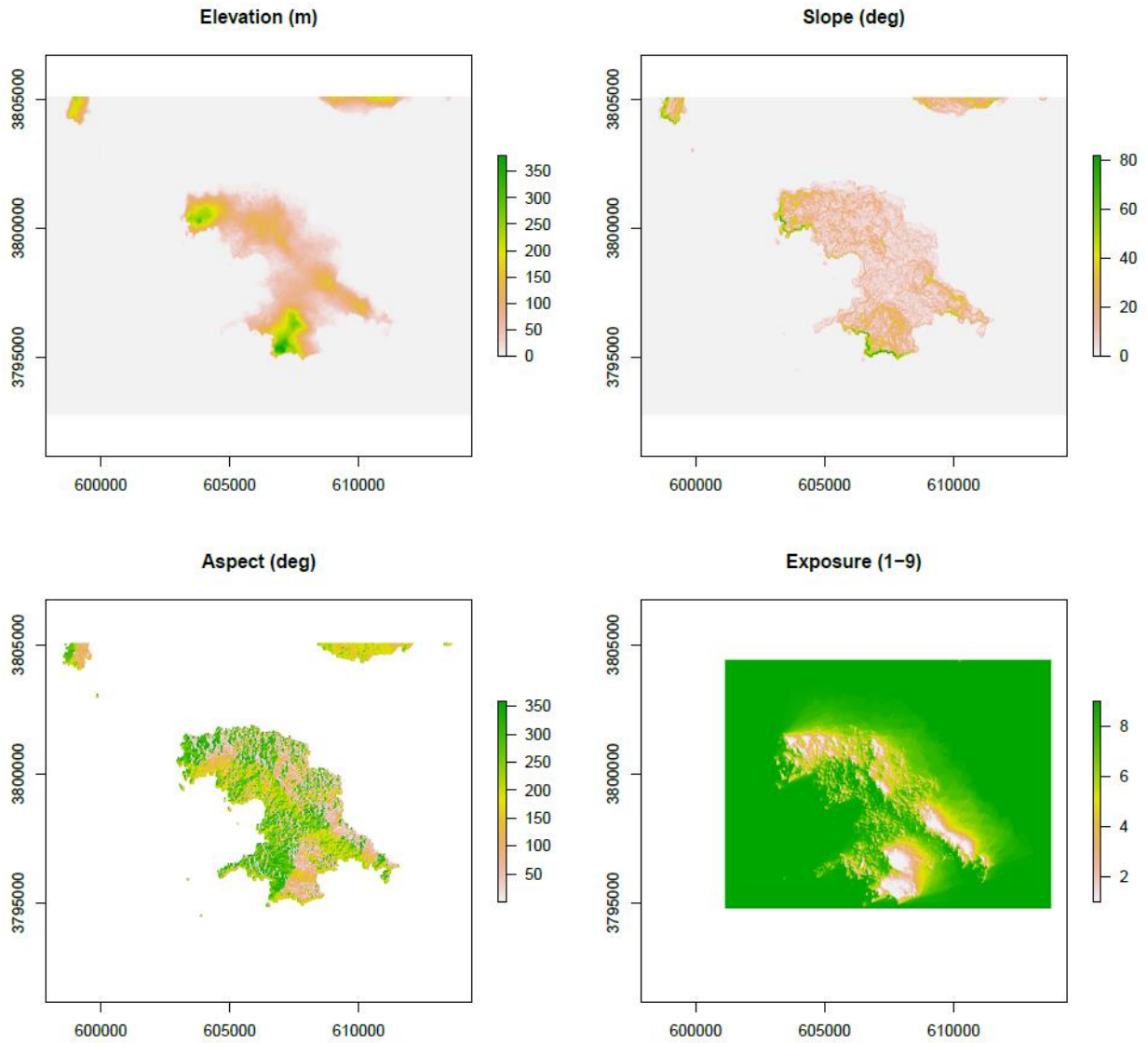
Supplementary Figure A5: Occurrence of high winds by date (>80 kph).



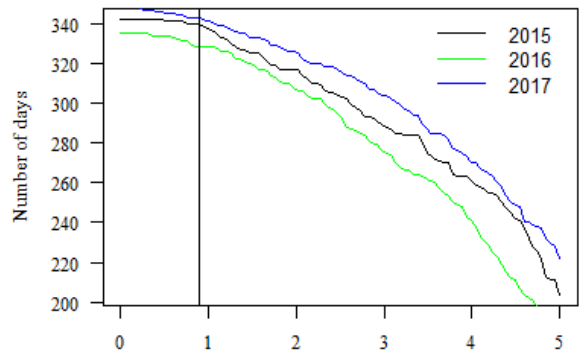
Supplementary Figure A1. Location of islands mentioned in the manuscript. For latitude and longitude of each, see main text.



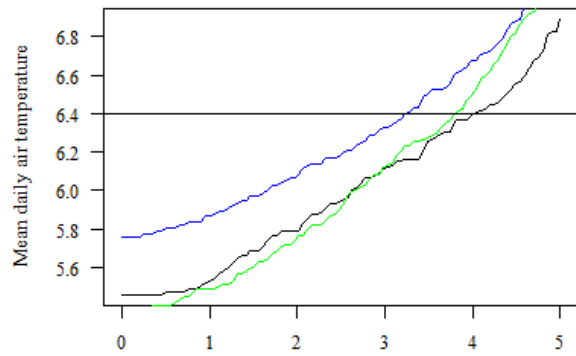
Supplementary Figure A2. Images of trees on Isla Hornos. A: One of the edge plots, looking out (south) of the contiguous live canopy. The tree canopy imaged is approximately 3m tall though substantially longer, the bole bending at approximately 1.5m. Dead trees are visible beyond the edge of the live tree (marked with pink tape). B: A different edge plot, showing the dense crowns with very tightly defined tops likely sculpted by wind. Trees approximately 2-3m tall. C: Long tree on exposed location (not on a plot) showing typical tree architecture (single main stem), but growing along the ground with canopy pointed downwind. Photos by the authors.



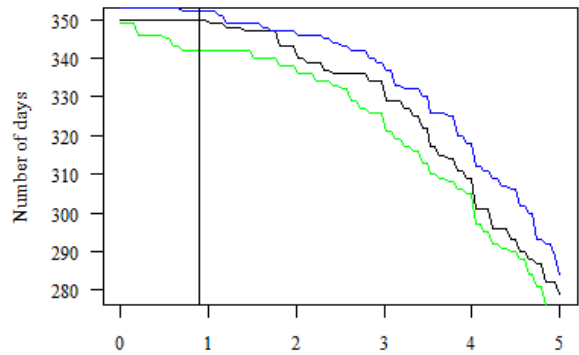
Supplementary Figure A3. Topographic data derived for Isla Hornos. 30m resolution, from the NASA ASTER mission.



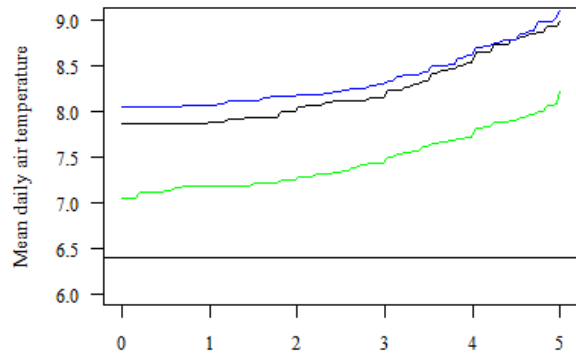
Daily mean temperature threshold for growing season definition



Daily mean temperature threshold for growing season definition



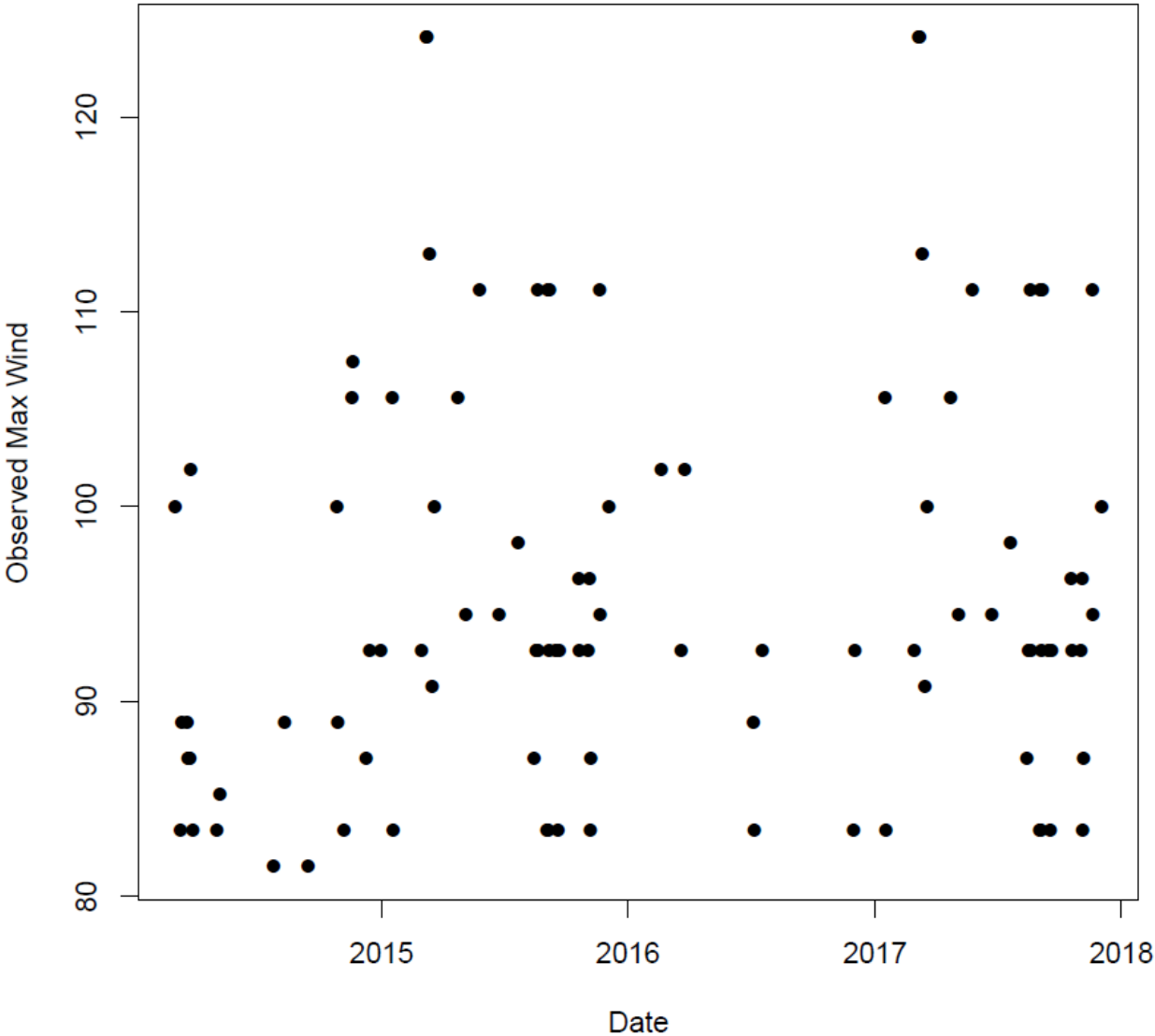
Daily max temperature threshold for growing season definition



Daily max temperature threshold for growing season definition

Supplementary Figure A4. Growing season analysis. Top row left: Growing season length (number of days) as a function of a minimum daily mean temperature thresholds which varies from 0-5 degrees. Vertical line corresponds to the 0.9 C cutoff of Paulson and Korner 2012 for climatic treelines for comparison purposes. Top row right: Mean daily temperatures for growing seasons with different mean temperature thresholds. Horizontal line corresponds to 6.4 degrees, the minimum mean temperature identified in the same analysis. Bottom row: Same analysis, but with maximum daily temperatures.

Days with Max Wind >80 kph



Supplementary Figure A5. Dates and maximum wind speeds for wind events >80 kilometers per hour.