



Supplement of

The significant role of snow in shaping alpine treeline responses in modelled boreal forests

Sarah Haupt et al.

Correspondence to: Sarah Haupt (sarah.haupt@awi.de) and Stefan Kruse (stefan.kruse@awi.de)

The copyright of individual parts of the supplement might differ from the article licence.

Table S1: List of species traits and model parameter values used in LAVESL. References for the values are provided in the columns highlighted in grey

[illegible]

- Bost, C.P. Empirical relationships between the degree of flower tube length and species richness in *Penstemon* (Euphorbiaceae) communities. *Ecology*, **49**, 16–20 (2008).
 Broadband Collaborative of Forest Land-Use Data. <https://www2.gov.bc.ca/gov/content/land-use-forestry/land-use-forest-research/forest-research/forest-research-2014>. Accessed: 2024.
 Buisson, B., Buisson, L.T., Fauriol, C., Couteau, J., Rogers, M., Walker, X.L. & Maki, M. Climate declines in growth potential during drought at a coniferous forest mature forest in Alaska. *Ecosystems*, **12**(4), 653–670 (2009). <https://doi.org/10.1002/eco.920>.
 Fick, S.E. and Hijmans, R.J. WorldClim 2: 1m spatial resolution climate surfaces for global land areas. *Int. J. Climatol.*, <https://onlinelibrary.wiley.com/doi/10.1002/joc.3989>. 2017.
 Gallet, J.L. *Forest Interactions: Forest Effects Information System*. U.S. Department of Agriculture, Forest Service, <https://www.fs.fed.us/foresthealth/foresthealth/forest-effects-information-system/>. 2024.
 Gilpin, M., Poth, P., Calsalada, C., Chaves-Sanchez, P.C. and Auerbach, M. Stand development and vegetation dynamics in a Mediterranean coniferous forest. *Ecosyst. Model.*, **221**, 1494–1504 (2008). <https://doi.org/10.1016/j.ecosyst.2010.03.010>.
 Gohsen, C. *Forest Interactions Information System*. U.S. Department of Agriculture, Forest Service, <https://www.fs.fed.us/foresthealth/foresthealth/forest-effects-information-system/>. 2024.
 Gormann, E. and Wimmer, D. *Global Vegetation Profile Bank*. U.S. Department of Agriculture, Forest Service, November 2015.
 Gormann, E. & Pappas, S. *Forest Interactions Information System*. U.S. Department of Agriculture, Forest Service, <https://www.fs.fed.us/foresthealth/foresthealth/forest-effects-information-system/>. 2024.
 Gormann, E. *Forest Interactions Information System*. U.S. Department of Agriculture, Forest Service, <https://www.fs.fed.us/foresthealth/foresthealth/forest-effects-information-system/>. 2024.
 Gormann, E. *Forest Interactions Information System*. U.S. Department of Agriculture, Forest Service, <https://www.fs.fed.us/foresthealth/foresthealth/forest-effects-information-system/>. 2024.
 Gormann, E. *Forest Interactions Information System*. U.S. Department of Agriculture, Forest Service, <https://www.fs.fed.us/foresthealth/foresthealth/forest-effects-information-system/>. 2024.
 Gormann, E. *Forest Interactions Information System*. U.S. Department of Agriculture, Forest Service, <https://www.fs.fed.us/foresthealth/foresthealth/forest-effects-information-system/>. 2024.
 Gormann, E. *Forest Interactions Information System*. U.S. Department of Agriculture, Forest Service, <https://www.fs.fed.us/foresthealth/foresthealth/forest-effects-information-system/>. 2024.
 Gormann, E. *Forest Interactions Information System*. U.S. Department of Agriculture, Forest Service, <https://www.fs.fed.us/foresthealth/foresthealth/forest-effects-information-system/>. 2024.
 Gormann, E. *Forest Interactions Information System*. U.S. Department of Agriculture, Forest Service, <https://www.fs.fed.us/foresthealth/foresthealth/forest-effects-information-system/>. 2024.
 Gormann, E. *Forest Interactions Information System*. U.S. Department of Agriculture, Forest Service, <https://www.fs.fed.us/foresthealth/foresthealth/forest-effects-information-system/>. 2024.
 Gormann, E. *Forest Interactions Information System*. U.S. Department of Agriculture, Forest Service, <https://www.fs.fed.us/foresthealth/foresthealth/forest-effects-information-system/>. 2024.
 Gormann, E. *Forest Interactions Information System*. U.S. Department of Agriculture, Forest Service, <https://www.fs.fed.us/foresthealth/foresthealth/forest-effects-information-system/>. 2024.
 Gormann, E. *Forest Interactions Information System*. U.S. Department of Agriculture, Forest Service, <https://www.fs.fed.us/foresthealth/foresthealth/forest-effects-information-system/>. 2024.
 Gormann, E. *Forest Interactions Information System*. U.S. Department of Agriculture, Forest Service, <https://www.fs.fed.us/foresthealth/foresthealth/forest-effects-information-system/>. 2024.
 Gormann, E. *Forest Interactions Information System*. U.S. Department of Agriculture, Forest Service, <https://www.fs.fed.us/foresthealth/foresthealth/forest-effects-information-system/>. 2024.
 Gormann, E. *Forest Interactions Information System*. U.S. Department of Agriculture, Forest Service, <https://www.fs.fed.us/foresthealth/foresthealth/forest-effects-information-system/>. 2024.
 Gormann, E. *Forest Interactions Information System*. U.S. Department of Agriculture, Forest Service, <https://www.fs.fed.us/foresthealth/foresthealth/forest-effects-information-system/>. 2024.
 Gormann, E. *Forest Interactions Information System*. U.S. Department of Agriculture, Forest Service, <https://www.fs.fed.us/foresthealth/foresthealth/forest-effects-information-system/>. 2024.
 Gormann, E. *Forest Interactions Information System*. U.S. Department of Agriculture, Forest Service, <https://www.fs.fed.us/foresthealth/foresthealth/forest-effects-information-system/>. 2024.
 Gormann, E. *Forest Interactions Information System*. U.S. Department of Agriculture, Forest Service, <https://www.fs.fed.us/foresthealth/foresthealth/forest-effects-information-system/>. 2024.
 Gormann, E. *Forest Interactions Information System*. U.S. Department of Agriculture, Forest Service, <https://www.fs.fed.us/foresthealth/foresthealth/forest-effects-information-system/>. 2024.
 Gormann, E. *Forest Interactions Information System*. U.S. Department of Agriculture, Forest Service, <https://www.fs.fed.us/foresthealth/foresthealth/forest-effects-information-system/>. 2024.
 Gormann, E. *Forest Interactions Information System*. U.S. Department of Agriculture, Forest Service, <https://www.fs.fed.us/foresthealth/foresthealth/forest-effects-information-system/>. 2024.
 Gormann, E. *Forest Interactions Information System*. U.S. Department of Agriculture, Forest Service, <https://www.fs.fed.us/foresthealth/foresthealth/forest-effects-information-system/>. 2024.
 Gormann, E. *Forest Interactions Information System*. U.S. Department of Agriculture, Forest Service, <https://www.fs.fed.us/foresthealth/foresthealth/forest-effects-information-system/>. 2024.
 Gormann, E. *Forest Interactions Information System*. U.S. Department of Agriculture, Forest Service, <https://www.fs.fed.us/foresthealth/foresthealth/forest-effects-information-system/>. 2024.
 Gormann, E. *Forest Interactions Information System*. U.S. Department of Agriculture, Forest Service, <https://www.fs.fed.us/foresthealth/foresthealth/forest-effects-information-system/>. 2024.
 Gormann, E. *Forest Interactions Information System*. U.S. Department of Agriculture, Forest Service, <https://www.fs.fed.us/foresthealth/foresthealth/forest-effects-information-system/>. 2024.
 Gormann, E. *Forest Interactions Information System*. U.S. Department of Agriculture, Forest Service, <https://www.fs.fed.us/foresthealth/foresthealth/forest-effects-information-system/>. 2024.
 Gormann, E. *Forest Interactions Information System*. U.S. Department of Agriculture, Forest Service, <https://www.fs.fed.us/foresthealth/foresthealth/forest-effects-information-system/>. 2024.
 Gormann, E. *Forest Interactions Information System*. U.S. Department of Agriculture, Forest Service, <https://www.fs.fed.us/foresthealth/foresthealth/forest-effects-information-system/>. 2024.
 Gormann, E. *Forest Interactions Information System*. U.S. Department of Agriculture, Forest Service, <https://www.fs.fed.us/foresthealth/foresthealth/forest-effects-information-system/>. 2024.
 Gormann, E. *Forest Interactions Information System*. U.S. Department of Agriculture, Forest Service, <https://www.fs.fed.us/foresthealth/foresthealth/forest-effects-information-system/>. 2024.
 Gormann, E. *Forest Interactions Information System*. U.S. Department of Agriculture, Forest Service, <https://www.fs.fed.us/foresthealth/foresthealth/forest-effects-information-system/>. 2024.
 Gormann, E. *Forest Interactions Information System*. U.S. Department of Agriculture, Forest Service, <https://www.fs.fed.us/foresthealth/foresthealth/forest-effects-information-system/>. 2024.
 Gormann, E. *Forest Interactions Information System*. U.S. Department of Agriculture, Forest Service, <https://www.fs.fed.us/foresthealth/foresthealth/forest-effects-information-system/>. 2024.
 Gormann, E. *Forest Interactions Information System*. U.S. Department of Agriculture, Forest Service, <https://www.fs.fed.us/foresthealth/foresthealth/forest-effects-information-system/>. 2024.
 Gormann, E. *Forest Interactions Information System*. U.S. Department of Agriculture, Forest Service, <https://www.fs.fed.us/foresthealth/foresthealth/forest-effects-information-system/>. 2024.
 Gormann, E. *Forest Interactions Information System*. U.S. Department of Agriculture, Forest Service, <https://www.fs.fed.us/foresthealth/foresthealth/forest-effects-information-system/>. 2024.
 Gormann, E. *Forest Interactions Information System*. U.S. Department of Agriculture, Forest Service, <https://www.fs.fed.us/foresthealth/foresthealth/forest-effects-information-system/>. 2024.
 Gormann, E. *Forest Interactions Information System*. U.S. Department of Agriculture, Forest Service, <https://www.fs.fed.us/foresthealth/foresthealth/forest-effects-information-system/>. 2024.
 Gormann, E. *Forest Interactions Information*