

Curriculum Vitae

Dr. Stefan Kruse

born 18/05/1984 in Lübeck, Germany, married

Alfred Wegener Institute (AWI) Helmholtz Centre for Polar and Marine Research
Telegrafenberg A45, 14473 Potsdam, GermanyPhone: +49-331-288-2218 E-mail: Stefan.Kruse@awi.de**Professional experience**

- since 01/17 **Post-Doc** at Alfred-Wegener-Institute Helmholtz-Center for polar and marine research, Department of Geosciences, Polar Terrestrial Environmental Systems Research Group in Potsdam, Germany, Project: ERC GlacialLegacy, PI: Prof. Dr. Ulrike Herzschuh
- 11/13–01/17 **PhD Student** at Alfred-Wegener-Institute Helmholtz-Center for polar and marine research, Department of Geosciences, Periglacial Research Section in Potsdam, Germany
- 05/13–10/13 **Research Fellow** at Alfred-Wegener-Institute Helmholtz-Center for polar and marine research, Department of Geosciences, Periglacial Research Section in Potsdam, Germany
- 08/07–09/07 **Laboratory Assistant** at Euroimmun AG, Lübeck, Germany
- 09/04–06/07 **Laboratory Assistant in Biology training** at Research Center Borstel Leibniz-Center for Medicine and Biosciences), Germany

Education

- 10/2017 **Dr. rer. nat.**, University of Potsdam “*Larix treeline dynamics in northern Siberia inferred from population genetics and individual-based modelling*” supervised by Ulrike Herzschuh (magna cum laude)
- 05/2013 **Master of Science Ecology, Evolution and Conservation**, University of Potsdam, “*Simulation of the Vegetation Dynamics of the Dahurian Larch Larix gmelinii (Rupr.) Kuzen. Growing at the Tree Line in Siberia – an Individual-Based Model Approach*” (mark: 1.1)
- 09/2010 **Bachelor of Science Biosciences**, University of Potsdam, “*Loss of drought stress adaptation in ex-situ cultivated Yellow Sweetclover populations?*” (mark: 1.6)
- 06/2007 **Laboratory assistant in biology** at Research Center Borstel (mark: “good”)
- 06/2003 **Abitur** at Baltic Gesamtschule in Lübeck (mark: 2.9)

Awards

- 05/2016 “Best Poster Presentation” at the Annual meeting of doctoral candidates of the Alfred Wegener Institute (Helmholtz Centre for Polar and Marine Research).
- 11/2013 Jacob-Jacobi-Award for best study degree and outstanding achievements among students of the years 2012/2013 (M.Sc. Ecology/Evolution/Nature Conservation) of the Faculty of Science of the University of Potsdam

Expedition/fieldwork experience

- since 2012 Participant in five Arctic summer expeditions to the treeline at several locations in Siberia and Yakutia, Russia, leading the vegetation survey group in four expeditions

Supervision experience

- since 2015 Supervision of six master and four bachelor theses and of several interns

Publications

Peer-reviewed

- 2020 Beamish, A., Raynolds, M. K., Epstein, H., Frost, G. V., Macander, M. J., Bergstedt, H., Bartsch, A., **Kruse, S.** ... Wagner, J. Recent trends and remaining challenges for optical remote sensing of Arctic tundra vegetation: A review and outlook. *Remote Sensing of Environment*, 246, 111872. doi:10.1016/j.rse.2020.111872
- 2020 Shevtsova, I., Heim, B., **Kruse, S.**, Schröder, J., Troeva, E. I., Pestryakova, L. A., ... Herzschuh, U. Strong shrub expansion in tundra-taiga, tree infilling in taiga and stable tundra in central Chukotka (north-eastern Siberia) between 2000 and 2017. *Environmental Research Letters*, in press, 0–31. doi:10.1088/1748-9326/ab9059
- 2019 Zimmermann, H. H., Harms, L., Epp, L. S., Mewes, N., Bernhardt, N., **Kruse, S.**, ... Herzschuh, U. Chloroplast and mitochondrial genetic variation of larches at the Siberian tundra-taiga ecotone revealed by de novo assembly. *PLoS ONE*, 14(7), 1–21. doi:10.1371/journal.pone.0216966
- 2019 Zimmermann, H. H., Stoof-Leichsenring, K. R., **Kruse, S.**, Müller, J., Tiedemann, R., & Herzschuh, U. (2019). Changes in the composition of marine and sea-ice diatoms derived from sedimentary ancient DNA of the eastern Fram Strait over the past 30,000 years. *Ocean Science Discussions*, 25(November), 1–25. doi:10.5194/os-2019-113
- 2019 **Kruse, S.**, Gerdes, A., Kath, N. J., Epp, L. S., Stoof-Leichsenring, K. R., Pestryakova, L. A. and Herzschuh, U.: Dispersal distances and migration rates at the arctic treeline in Siberia – a genetic and simulation-based study, *Biogeosciences* 16(6), 1211–1224, doi:10.5194/bg-16-1211-2019
- 2018 Epp, L. S., **Kruse, S.**, Kath, N. J., Stoof-Leichsenring, K. R., Tiedemann, R., Pestryakova, L. A. and Herzschuh, U.: Temporal and spatial patterns of mitochondrial haplotype and species distributions in Siberian larches inferred from ancient environmental DNA and modeling, *Scientific Reports* 8(1), 17436, doi:10.1038/s41598-018-35550-w
- 2018 **Kruse, S.**, Gerdes, A., Kath, N. J. and Herzschuh, U.: Implementing spatially explicit wind-driven seed and pollen dispersal in the individual-based larch simulation model: LAVESI-WIND 1.0, *Geoscientific Model Development* 11(11), 4451–4467, doi:10.5194/gmd-11-4451-2018, 2018.
- 2018 **Kruse, S.**, Epp, L. S., Wieczorek, M., Pestryakova, L. A., Stoof-Leichsenring, K. R. and Herzschuh, U.: High gene flow and complex treeline dynamics of *Larix* Mill. stands on the Taymyr Peninsula (north-central Siberia) revealed by nuclear microsatellites, *Tree Genetics & Genomes* 14(2), 19, doi:10.1007/s11295-018-1235-3
- 2017 Wieczorek, M., **Kruse, S.**, Epp, L.S., Kolmogorov, A., Nikolaev, A.N., Heinrich, I., Jeltsch, F., Pestryakova, L.A., Zibulski, R., Herzschuh, U., 2017. Dissimilar responses of larch stands in northern Siberia to increasing temperatures—a field and simulation based study. *Ecology* 98, 2343–2355, doi:10.1002/ecy.1887
- 2017 Wieczorek, M., Kolmogorov, A., **Kruse, S.**, Jacobsen, I., Nitze, I., Nikolaev, A., Heinrich, I., Pestryakova, L., Herzschuh, U., 2017. Disturbance-effects on treeline larch-stands in the lower Kolyma River area (NE Siberia). *Silva Fennica* 51, 1–20. <https://doi.org/10.14214/sf.1666>
- 2016 **Kruse, S.**, Wieczorek, M., Jeltsch, F., & Herzschuh, U. (2016). Treeline dynamics in Siberia under changing climates as inferred from an individual-based model for *Larix*. *Ecological Modelling* 338, 101-121, doi:10.1016/j.ecolmodel.2016.08.003

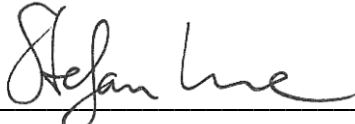
Books and Chapters

- 2019 **Kruse, S.**, Bolshiyarov, D., Grigoriev, M. N., Morgenstern, A., Pestryakova, L., Tsibizov, L., & Udke, A. (2019). Russian-German Cooperation: Expeditions to Siberia in 2018. Berichte Zur Polar-Und Meeresforschung **Reports on Polar and Marine Research**, 734, doi: 10.2312/BzPM_0734_2019
- 2016 **Kruse, S.**, Stoof-Leichsenring, K.R., 2016. Keperveem - Past and present vegetation dynamics at the most eastern extension of the Siberian boreal treeline, in: Overduin, P.P., Blender, F., Bolshiyarov, D.Y., Grigoriev, M.N., Morgenstern, A., Meyer, H. (Eds.), **Russian-German Cooperation: Expeditions to Siberia in 2016**. Alfred-Wegener-Institut, Helmholtz-Zentrum für Polar- und Meeresforschung , Bremerhaven, Germany, Alfred-Wegener-Institut, Helmholtz-Zentrum für Polar- und Meeresforschung , Bremerhaven, Germany, pp. 130–137, doi:10.2312/BzPM_0709_2017

Repositories

GitHub – publicly sharing the source code of my vegetation model **LAVESI** and updates at <https://github.com/StefanKruse/LAVESI/releases> and releases are permanently stored at ZENODO and further own developed scientific software on <https://github.com/StefanKruse>

Potsdam, May 14th 2020



Stefan Kruse