

EGU24-16785, updated on 12 Feb 2025

<https://doi.org/10.5194/egusphere-egu24-16785>

EGU General Assembly 2024

© Author(s) 2025. This work is distributed under the Creative Commons Attribution 4.0 License.



## Status of the Circumpolar Landcover Unit database

**Rustam Khairullin**<sup>1</sup>, Clemens von Baeckmann<sup>1</sup>, Annett Bartsch<sup>1</sup>, Helena Bergstedt<sup>1</sup>, Barbara Widhalm<sup>1</sup>, Aleksandra Efimova<sup>1</sup>, Xaver Muri<sup>1</sup>, Ksenia Ermokhina<sup>2</sup>, and Birgit Heim<sup>3</sup>

<sup>1</sup>b.geos, Industriestrasse 1, 2100 Korneuburg, Austria ([rustam.khairullin@bgeos.com](mailto:rustam.khairullin@bgeos.com))

<sup>2</sup>A.N. Severtsov Institute of Ecology and Evolution, Russian Academy of Sciences, Moscow, Russia

<sup>3</sup>Alfred Wegener Institute for Polar and Marine Research, Potsdam

The Circumpolar Landcover unit database provides landcover information in high detail, spatially (10m) and thematically (23 units). Such detail is needed for a wide range of applications targeting climate change impacts and ecological research questions. The landcover unit retrieval scheme used provides unprecedented detail. The landcover units have been derived by fusion of satellite data using Sentinel-1 (synthetic aperture radar) and Sentinel-2 (multispectral). The units reflect gradients of moisture as well as vegetation physiognomy.

The original database covered the Arctic north of the tree line. It has been extended towards south, providing additional detail within the tundra-taiga transition zone in permafrost regions. The available spatial detail provides the means to assess the complexity of this zone in addition to information on recent disturbance related to for example wildfire and thermokarst lake change.

Bartsch, A., Efimova, A., Widhalm, B., Muri, X., von Baeckmann, C., Bergstedt, H., Ermokhina, K., Hugelius, G., Heim, B., & Leibmann, M. (2023). Circumpolar Landcover Units (1.0) [Data set]. Zenodo. <https://doi.org/10.5281/zenodo.8399018>