

Weekly report 1

Expedition NW Alaska 2025 (Perma-X Ground)

12 - 21 July 2025



Dear colleagues, family, and friends,

happy greetings from Kotzebue on the Baldwin Peninsula in Northwest Alaska!

Our team consists of Guido Grosse (expedition lead), Anne Morgenstern, Alexandra (Sasha) Veremeeva (all AWI), Frank Günther (Neubrandenburg University of Applied Sciences), and Sebastian Wetterich (Technical University of Dresden) and our research aims at understanding how fast ice-rich permafrost can thaw and what the consequences are for the landscape of the northern Baldwin Peninsula. This year's expedition continues and expands previous research activities in the region and includes high-resolution terrain surveys of sites with eroding and degrading permafrost as well as sampling of permafrost sediments and ground ice for understanding the regional history of permafrost.

The first part of the team (Sasha, Frank, and Sebastian) headed from Berlin via Frankfurt to Anchorage, Alaska on 12 July, used a 3-day stay there for shopping of food, supplies and additional equipment for the whole team, and flew to Kotzebue on 15 July. The second part (Guido and Anne) took the same route from Berlin on 15 July and arrived in Kotzebue one day later. Everybody felt warmly welcomed by our local logistics provider Joe Groves and like home in his cosy rental house that serves as our base for the two weeks of our expedition.

After a day of getting settled, meeting with local organizations, and organizing means of transportation to our field sites, we started field work on 17 July. A bumpy ATV ride across the tundra took us to the property of the Schaeffer family just outside of town, where a small thermokarst lake had drained rapidly in June 2022 and left a drained lake basin (DLB) and a deeply incised drainage gully, where ice-rich permafrost is exposed. Compared to previous years, the gully continues to widen and the floor of the DLB, which was about half bare ground, half vegetated in 2024, is almost completely overgrown by pioneer vegetation of tall grasses now. This year's work here includes additional sampling of the permafrost exposure, remeasuring ground temperature and thaw depth along a transect through the DLB, and establishing a plot for precise terrain elevation monitoring.



The following two days with nice and calm weather allowed us to take a boat ride to Cape Blossom. At the more than 35 m high cliff, we sampled permafrost deposits for paleoenvironmental reconstruction, and re-measured thaw depth along a transect from the upland across a thaw slump. In order to conduct a drone survey over the area, to sample water, and describe vegetation on the surface, we had to climb up and down the cliff several times carrying heavy equipment. The reward for this was not only a beautiful view from the top, but also a refreshing dip into the ocean after a sweaty work day.

On 20 July we visited a thermo-erosional gully to re-measure transects installed during previous expeditions, take water and vegetation samples, and fly the drone for a repeated terrain survey. Now the weather changed to heavy rain, which was a good reason for us to do a day of data backup and documentation, visiting the Northwest Arctic Heritage Center with its small, but very nice museum, and to bring you up to date about our activities.

We gratefully thank the Kikiktagruk Inupiat Corporation (KIC) and the Schaeffer family for allowing us to work on their lands.

Stay tuned and best wishes from all of us,

Sebastian, Sasha, Anne, Guido, Frank

