

## British Antarctic Survey, Recent Hot Water Drilling Activities

*Thursday 18 September 2025 12:45 (20 minutes)*

Over the past six years, BAS Hot Water Drilling (HWD) systems have been successfully deployed across Antarctica in collaboration with several polar research operators. In 2019, the International Thwaites Glacier Collaboration (ITGC), a partnership between the UK and the US National Science Foundation (NSF), funded the drilling of access holes above and below the grounding line of Thwaites Glacier and the deployment of the IceFin ROV, resulting in the first live imaging of a grounding line.

Following 2020, the COVID-19 pandemic introduced significant collaborative and logistical challenges, including the cancellation of plans to access Subglacial Lake CECs. However, new opportunities emerged through collaboration with the Korean Polar Research Institute (KOPRI), culminating in the co-development of a new 1500 m HWD system, together with training and field support. As a result, boreholes were successfully drilled through the Dotson Ice Shelf in 2021 and the Nansen Ice Shelf in 2022.

In 2023, three access holes were drilled through the Fimbul Ice Shelf as part of the Troll Observing Network (TONE) project, supported by the Norwegian Polar Institute (NPI). Additional successful IceFin deployments were also completed.

All drilling campaigns utilized the diverse array of HWD equipment in the BAS inventory, allowing for system customization based on ice thickness, logistical constraints, and other operational requirements. These capabilities, along with the achievements of recent fieldwork, will be presented in detail.

**Primary author:** ANKER, Paul (NERC)

**Presenter:** ANKER, Paul (NERC)

**Session Classification:** Oral sessions

**Track Classification:** Hot water drilling