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Under-ice zooplankton communities of lake tovel, a long-term perspectiv

Ulrike Obertegger^{1*}, Stefano Corradini², Leonardo Cerasino¹

¹Idrobiologia, Fondazione E. Mach, Mach 1 - 38010 - San Michele all'Adige (Trentino-South Tyrol), Italy

²Technology Transfer Centre, Fondazione E. Mach, Mach 1 - 38010 - San Michele all'Adige (Trentino-South Tyrol), Italy

Corresponding author: ulrike.obertegger@fmach.it

Most studies on under-ice zooplankton consider low-land lakes over relatively short temporal scales, while little is known about long-term under-ice zooplankton of mountain lakes. We compared the under-ice zooplankton community (one sampling per year; $n = 11$) to that of the ice-free seasons (monthly samplings) of mountain Lake Tovel from 2001 to 2023. We applied a taxonomic and functional perspective on zooplankton diversity as complementary approaches. The prevailing absence of seasonal differences was linked to the lake's cold-water temperature year-round. From the last autumn to under-ice sampling, *Filinia terminalis*, *Kellicottia longispina*, *Keratella hiemalis*, *Polyarthra dolichoptera*, *Synchaeta kitina*, *S. lakowitziana*, *Bosmina longirostris*, and nauplii and adults of *Cyclops strenuus* increased in abundance that we attributed to reproduction under ice. Our study showed that in mountain Lake Tovel the under-ice period is characterised by a similar high zooplankton diversity as during the ice-free period. Studies like ours, covering both taxonomic and functional diversity, are more needed to understand under-ice zooplankton communities.