



## **Lateglacial summer temperature in Northern Italy as reconstructed by fossil chironomid assemblages in Lago di Lavarone (1100 m asl)**

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Fossil chironomid assemblages and other aquatic invertebrate remains in the sediments of Lago di Lavarone (Trentino, Northern Italy) were analyzed in order to reconstruct the summer temperature development in the region ca. 15,000-11,000 calibrated radiocarbon years BP. Analyses indicate assemblages adapted to low oxygen conditions during the entire sequence. Major changes in the chironomid fauna were inferred at the beginning of the Lateglacial Interstadial, when taxa adapted to oligomesotrophic northern and mountain lakes disappeared from the record, at the beginning of the Younger Dryas cold phase when chironomid concentrations declined, suggesting increased anoxia in the lake, and many taxa typical for temperate lowland lakes disappeared from the record, and at the end of the Younger Dryas when most taxa adapted to temperate conditions returned. A chironomid-July air temperature transfer function from Central Europe was applied to the record and reconstructed July air temperatures of 10.5-10.8°C before the Lateglacial Interstadial, 13.8-13.9°C during most of the Interstadial with a slight increase to 15.3°C just before the Younger Dryas, variable temperatures of 11.7-14.5°C during the Younger Dryas and temperatures of 15.8-16.4°C during the earliest Holocene. Inferences during the Younger Dryas cold episode were based on a low number of specimens and therefore remain uncertain.