

Climatic Change

Supporting Information for

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Climate warming increases vertical and seasonal water temperature differences, and inter-annual variability in a mountain lake

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Figures (Fig. S1 – Fig. S5)

The supporting information presented here provides comprehensive details in form of figures, supporting the results in the original publication.

Fig. S1

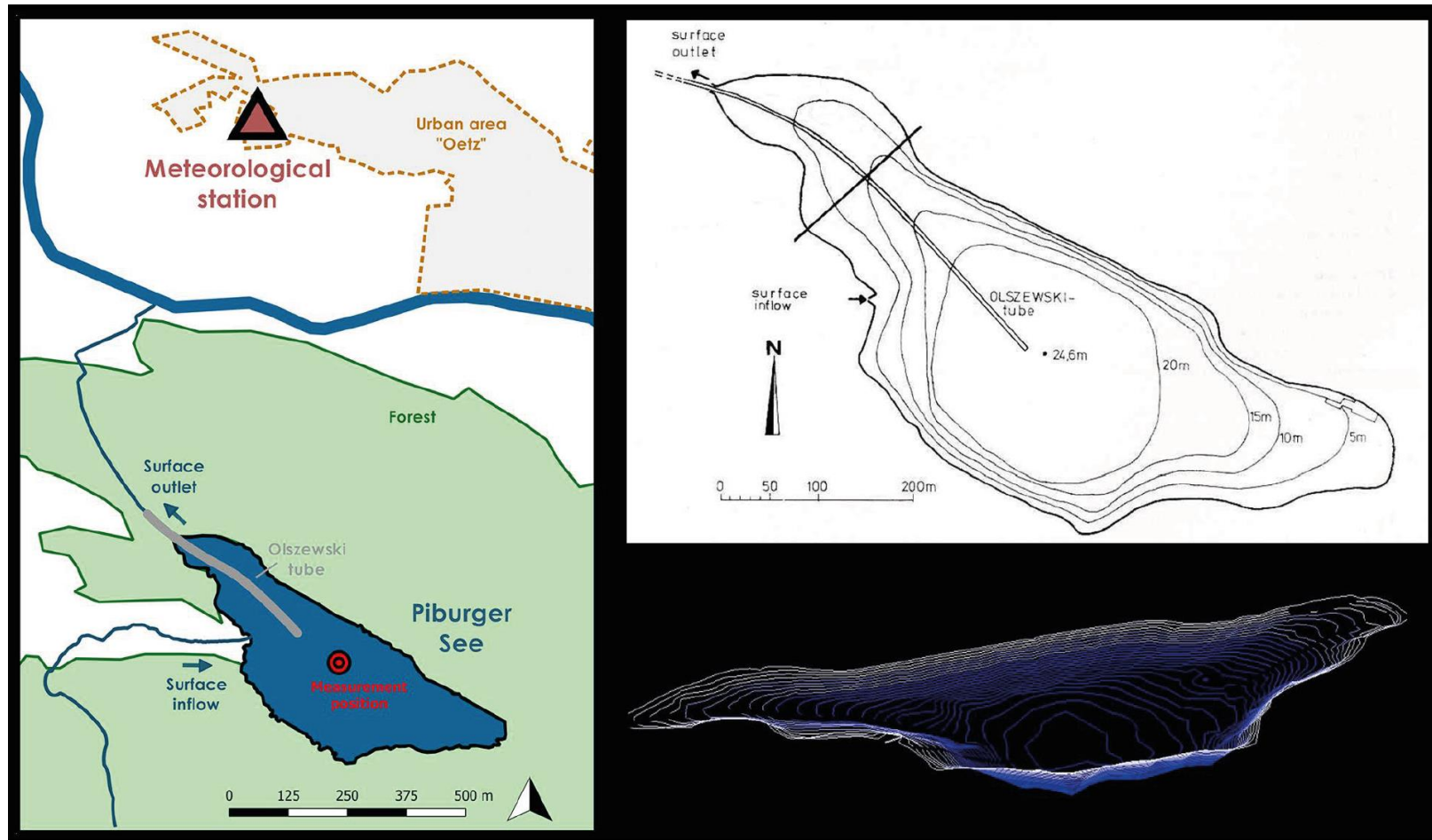


Fig. S1. Map of the study lake Piburger See showing the location of inflow and outlet of the lake, of the Olszewski tube, of the position of measurements and of the meteorological station in Oetz (left), and bathymetric maps of Piburger See (adapted from Claude Hansen) with a low (5m) and a higher (1m) resolution.

Fig. S2

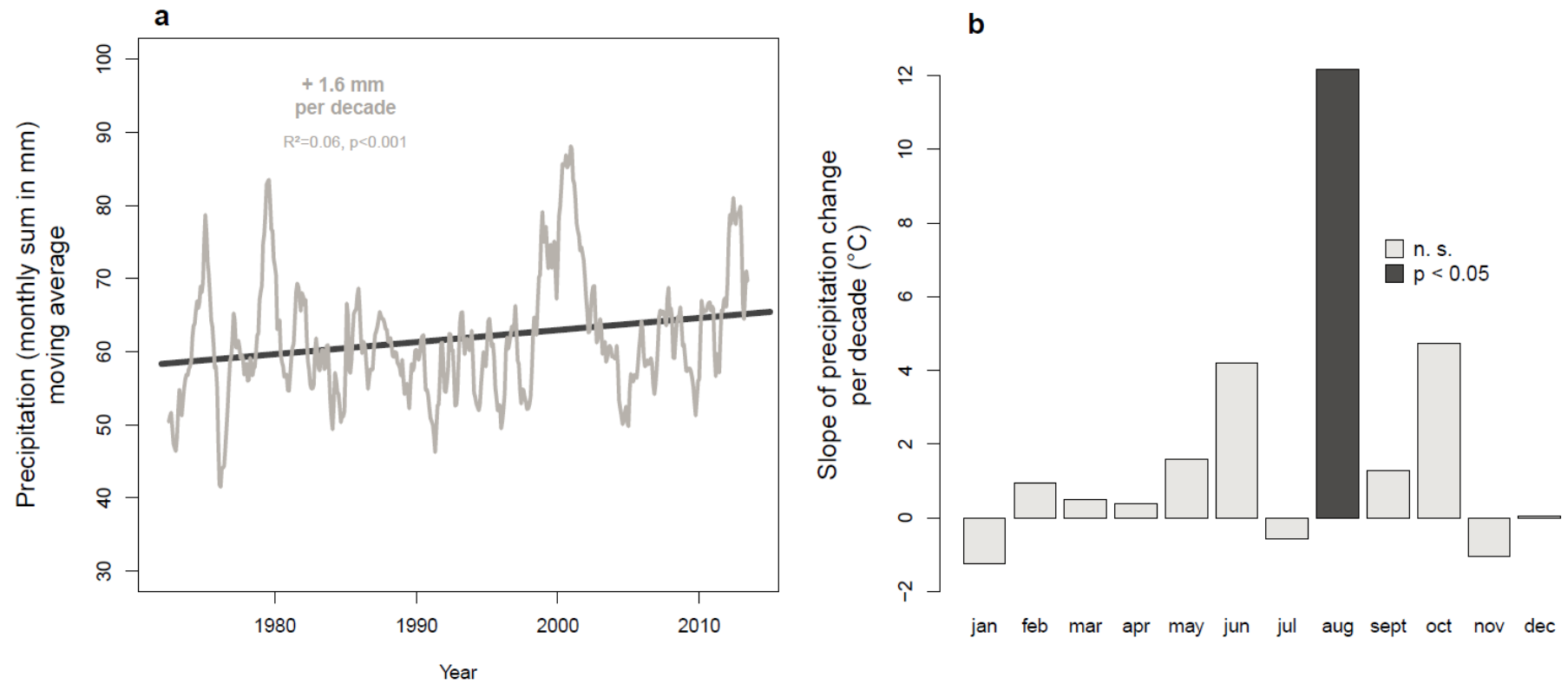


Fig. S2. (a) Moving average of monthly summed precipitation (in mm) with linear regression (black line) and (b) regression slopes of significant (dark grey) and non-significant (light grey) month specific change (in mm decade⁻¹) from 1972 to 2013.

Fig. S3

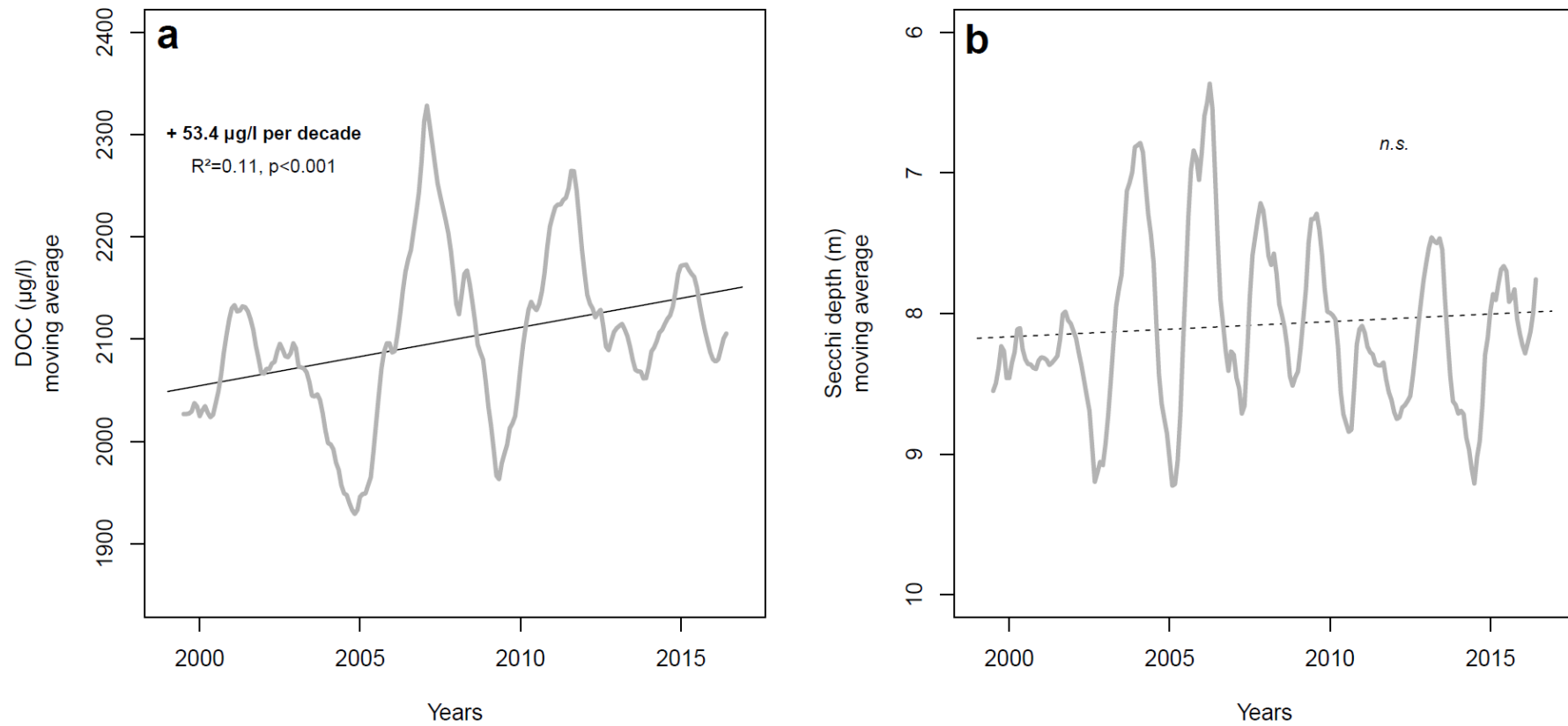


Fig. S3. Moving average of (a) DOC concentration (dissolved organic carbon, in $\mu\text{g/l}$) and (b) Secchi depth in m from 1999 to 2015.

Fig. S4

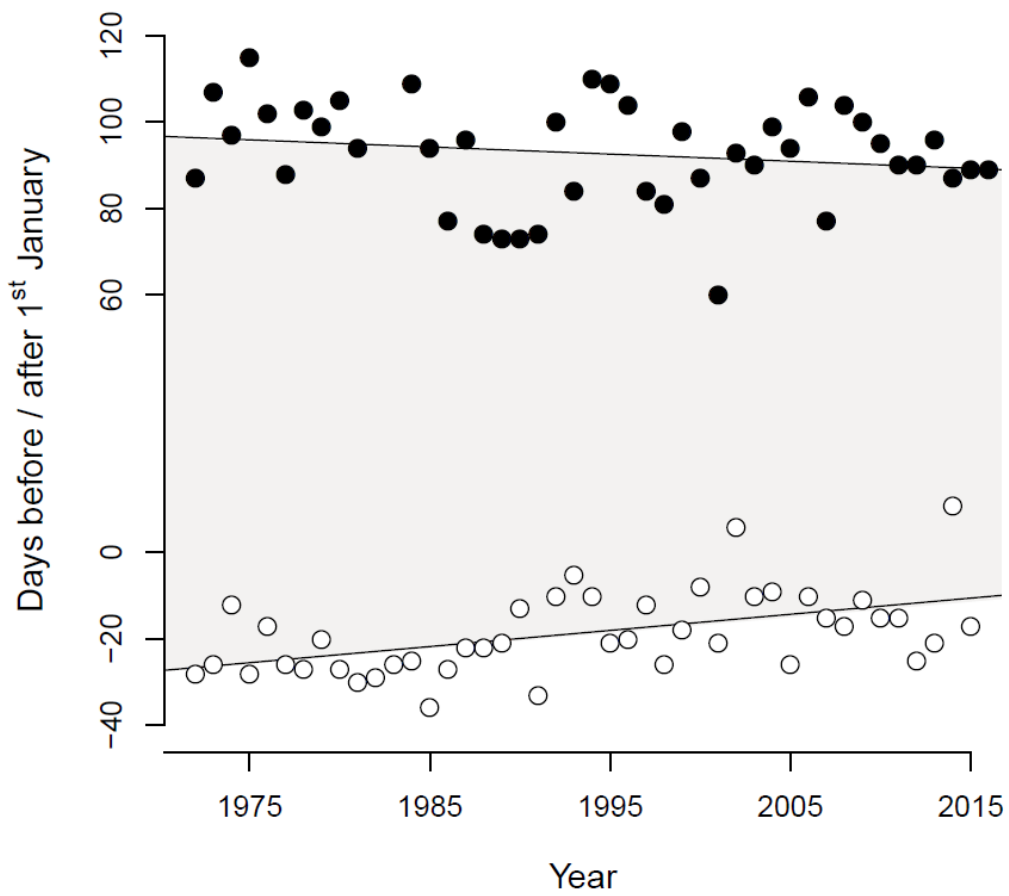


Fig. S4. Dates of ice-on and ice-off for Piburger See (1972-2015), expressed as days before and after 1st January for each year. Linear regressions (straight lines) and the duration of ice cover (grey area) are also shown.

Fig. S5

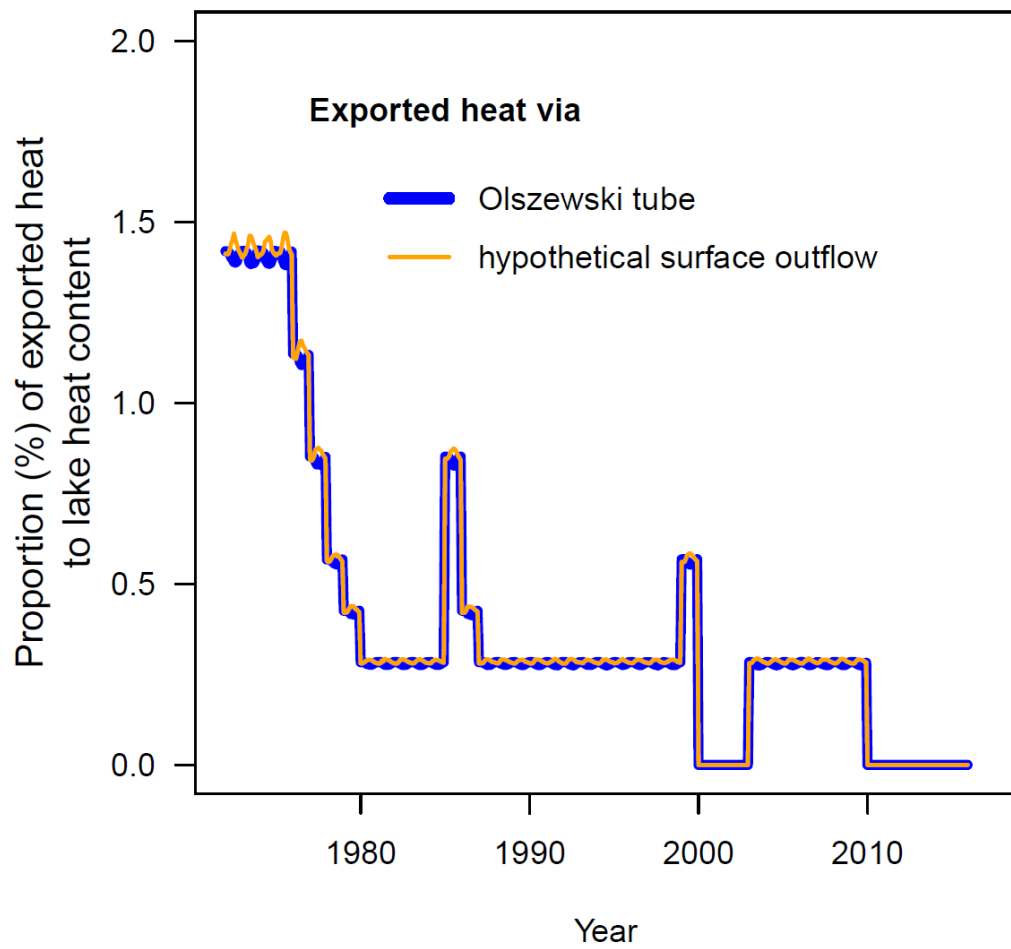


Fig. S5. Time series comparison of the relative heat loss compared to the total heat content of Piburger See through water outflow via Olszewski tube (blue) and a hypothetical surface outflow with same water volumes but different temperatures (orange).