Holocene vegetation change at Grosssee, eastern Swiss Alps: effects of climate and human impact

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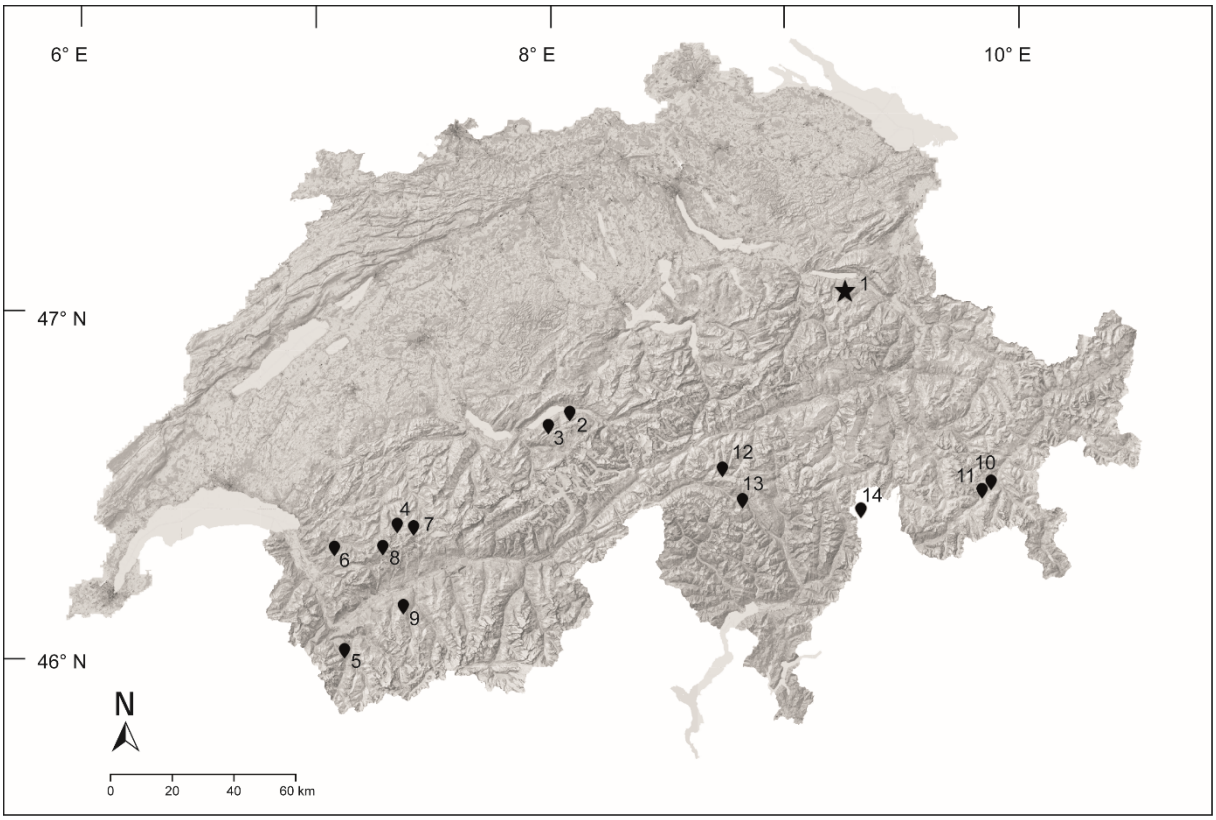
ESM 2



ESM 2 Fig. S1 Map of Switzerland with: 1. the study site Grosssee (1,619 m asl) and Seebenalp as well as important sites of comparative pollen-based vegetation studies including 2. Hinterburgsee (1,515 m asl), 3. Sägistalsee (1,935 m asl), 4. Lauenensee (1,381 m asl), 5. Lac de Champex (1,467 m asl), 6. Lac de Bretaye (1,780 m asl), 7. Iffigsee (2,065 m asl), 8. Emines near Sanetsch Pass (2,288 m asl), 9. Gouillé Rion (2,343 m asl), 10. Lej da San Murezzan (1,768 m asl), 11.Lej da Champfer,(1,791 m asl), 12. Foppe (1,470 m asl), 13. Lago Cadagno (1,921 m asl), and 14. Lago Basso in Italy (2,250 m asl). Map: Bundesamt für Landestopografie swisstopo (©swisstopo), modified.

ESM 2 Table S1 Establishment and expansion of *Alnus viridis* at important sites in the Swiss Alps

Site	Elevation [m]	Empirical limit [cal BP]	Rational limit [cal BP]	Late-Holocene decline [cal BP]	Sources
Grosssee	1,619	9,600	7,200 (abrupt expansion over ca 600 years)	ca 1,010 (rebounds recently)	This work
Hinterburgsee	1,515	5,800	5,000	1,000 (no rebound)	Heiri et al. (2003)
Sägistalsee	1,935	6,000	4,500	1,200 (no rebound)	Wick et al. (2003)
Lauenensee	1,381	5,200	4,200	1,200 (slight rebound recently)	Rey et al. (2013)
Lac de Champex	1,467	5,500	4,500	1,100 (no rebound)	Rey et al. (2021)
Lac de Bretaye	1,780	4,400	3,800	1,800 (rebounds recently)	Thöle et al. (2015)
Iffigsee	2,065	4,800	4,000	1,000 (very slight decline)	Schwörer et al. (2014); Schwörer et al. (2015)
Ermines (2 ponds), Sanetsch Pass	2,288	6,000	5,500	2,000 (slight rebound around 1,000)	Berthel et al. (2012)
Gouillé Rion	2,343	5,800[a]	3,900[a]	No data	Wick and Tinner (1997)
Lej da San Murezzan	1,768	8,200	7,300 (expansion gradual until ca 4,000)	1,000 (rebounds around 500, then declines)	Gobet et al. (2003)
Lej da Champfer	1,791	9,500	6,700	1,300 (strong rebound around 500, then declines)	Gobet et al. (2003)
Foppe (mire)	1,470	12,000	5,000	3,000–1,500 (then rebounds)	Vescovi et al. (2018)
Lago Cadagno	1,921	7,500	6,000	3,800 (rebounds 2200–1800)	Vescovi et al. (2018)
Lago Basso[b]	2,250	11,100[a]	5,800[a]	3000[a]–2800[a] (then rebounds, no data after 1,900[a])	Wick and Tinner (1997)

All dates are approximations based on pollen diagrams rounded to the nearest hundred.
a Dates have been calibrated in Calib 8.2 (Reimer et al. 2020)
b Italian site, close to the Swiss border