

Pollen-climate reconstruction from northern South Island, New Zealand (41°S), reveals varying high- and low-latitude teleconnections over the last 16 000 years

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© 2015 John Wiley & Sons, Ltd. We present a 16 000-year vegetation and climate reconstruction from pollen and plant macrofossil records obtained at a small alpine lake in South Island, New Zealand (41°S). The expansion of lowland forest taxa suggests a lifting of the altitudinal forest limits because of a warming pulse between 13 and 10k cal a BP and between 7 and 6k cal a BP, while their decline relative to upland forest taxa indicates cooling phases between 10 and 7k cal a BP and over the last 3000 years. The modern treeline was first established locally by 9.7k cal a BP. Forest persisted at the site until 3k cal a BP then disappeared from the record. Close correspondence between the temperature trends inferred from the pollen and macrofossil records and proxies from Antarctica and the Southern Ocean suggests a strong teleconnection between New Zealand and the Southern Hemisphere high-latitudes between 15 and 6k cal a BP. We note that the breakdown of this coupling, a cooling trend i