

Temperate rainforest response to climate change and disturbance agents in northwestern Patagonia (41°S) over the last 2600years

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We present detailed pollen and charcoal records from Lago Pichilafquén (~. 41°S) to decipher the effects of climate change and varying disturbance regimes on the composition and structure of the vegetation on the Andean foothills of northwestern Patagonia during the last 2600. yr. Here, temperate rainforests have dominated the landscape since 2600. cal. yr BP with variations ranging from cool-temperate and wet north Patagonian rainforests to relatively warm and summer-drought-resistant Valdivian rainforests. We interpret relatively warm/dry conditions between 1900-2600, 690-750 and 320-430. cal. yr BP, alternating with cold/wet conditions between 1500-1900, 750-1100 and 430-690. cal. yr BP. Rapid deforestation and spread of plants introduced by Europeans occurred at 320 and 140. cal. yr BP. The record includes five tephras with ages of 2130, 1460, 1310, 1210, and 340. cal. yr BP, all of which precede local fire events and increases in trees favored by disturbance by less than 100. yr.