Topography controls Andean treeline forest distribution

Forests at lower elevations grew mostly in topographically protected sites close to rivers, whereas at higher elevations in north-facing, sunnier and well-drained sites.

IMPLICATIONS

on the modelling of suitable sites in the current and future climatic conditions

Fig1. *Forests* 2018, *9*(1), 7; https://doi.org/10.3390/19010007

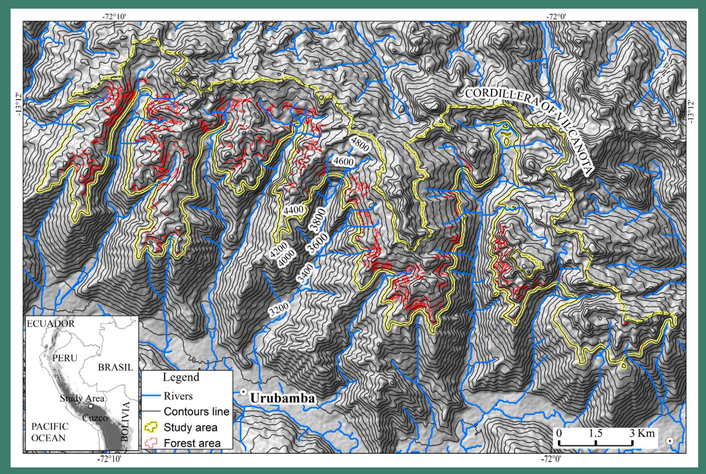

Fig2. Mapped *P. subsericans* treeline forests at 4300-4800 m, in Urubamba, Cusco (Peru).

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METHODS: *Polylepis subsericans* treeline forests were mapped in the Cordillera Urubamba, Cusco (Peru), using high-resolution aerial images. The forest cover was related to topographic variables extracted from a digital terrain model (30-m resolution). The variables used in the analysis, northern exposure (NORTH), eastern exposure (EAST), topographic wetness index (TWI), solar radiation (SRD), overland flow distance (OFD) and morphometric protection index (MPI), were selected based on their expected biological relevance for tree growth at high elevations. Logistic regression models were constructed separately for 100-m elevational belts.

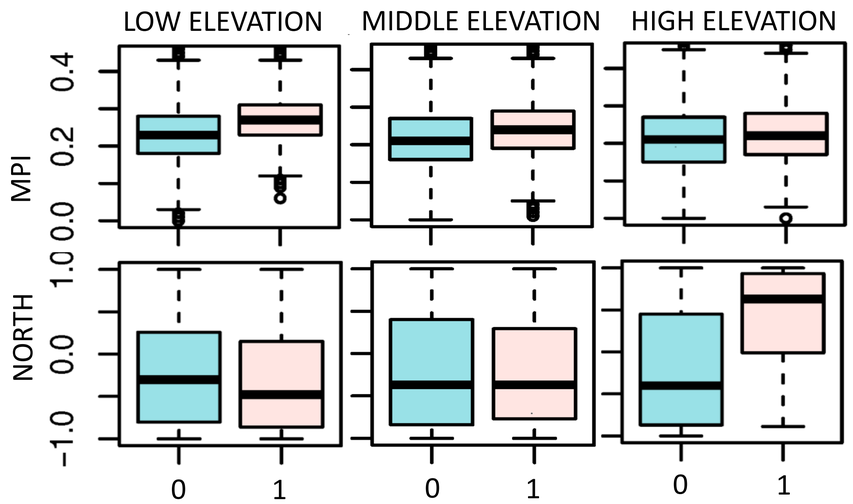

Fig3. Morphometric protection index and northern exposure in low, middle and high elevations (1= FOREST, 0= NO FOREST)