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**Introduction:** Although most of the northern Peruvian Andes are still dominated by diverse montane forests, agricultural patches and degraded forests are increasingly expanding, while natural habitats are suffering from insidious fragmentation (Fig. 1 & 2). Subsequent soil degradation often leads to field abandonment and degraded pastures, and forests are often overused. However, knowledge on the forest restoration potential, e.g. on the dependencies of substrates, soils, and altitude, is scarce.



Fig. 1: View on the Pomacochas Basin with its patchy forest distribution in Pomacochas, North Peru

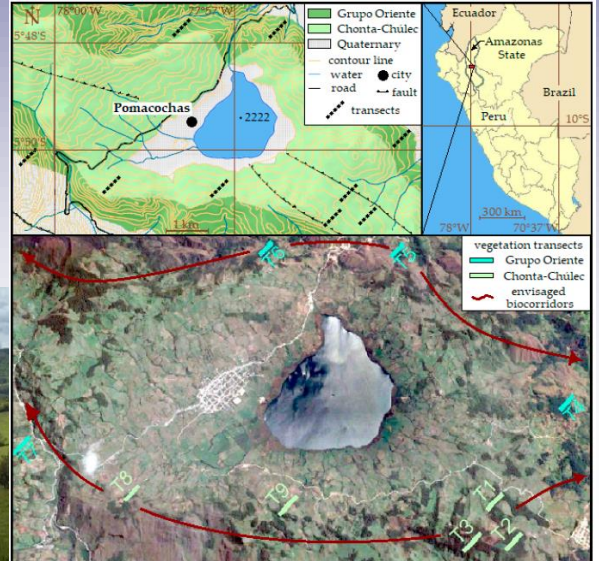


Fig. 3: Study region with 9 transects of vegetation plus soil samples, Amazonas



Fig 2: Pre-Incan hedgerows and degraded pastures

**Methods:** Soil and vegetation were investigated along nine 400 m transects in a total of 24 plots within the upper Pomacochas Basin (Fig. 3): altitudes: 2071-2559 m a.s.l. soil samples: pH,  $P_{ar}$ ,  $K_{ex}$ , texture vegetation: 18 closed+6 semi-open forests 500 m<sup>2</sup> circles, trees, shrubs, herbs



Fig 4: Degraded forests on the Pomacochas Basin's crests

**Results:** Successional stages based on former disturbance duration and intensity, geological substrate (Chonta/Chúlec= limestone; Grupo Oriente= sandstones), and altitude have the most important ecological impacts on vegetation and tree species composition (Fig. 4). Species respond to sandstone versus calcareous substrates, but also to depths of organic soil layers, and light conditions (Fig. 5). The absence of organic layers under pastures contrasted with the accumulation of thick organic layers under forest cover.

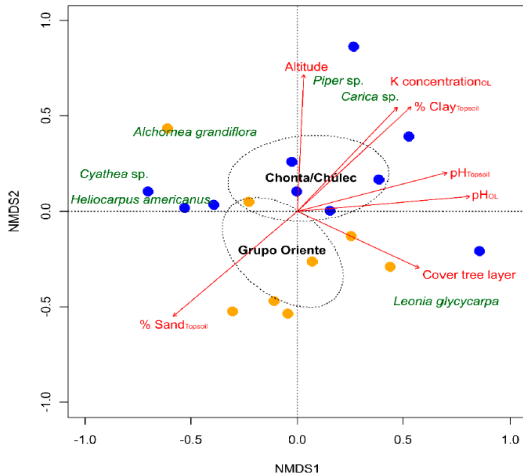


Fig. 5: NMDS of the 24 sites with important tree species and parameters

### Further Reading:

Walentowski et al. (2018): Vegetation Succession on Degraded Sites in the Pomacochas Basin (Amazonas, N Peru)— Ecological Options for Forest Restoration. Sustainability: 10, 609

**Discussion:** Vegetation composition at succession sites represent certain starting points for restoration that will determine the length of regeneration paths. Degraded forest patches may act as habitat stepping stones or living fences for restoring biocorridors for wildlife. Chances for implementing nature conservation objectives and sustainability goals should be taken now, as the local population is asking science for advice for an ecological sound development (ecotourism and agroforestry).

### Acknowledgements:

We are grateful to the DAAD and INDES-CES