

# Assessment of the current state of Basho forest, Northern areas, Pakistan, how it is changing and the effect on the natural regeneration of *Pinus Wallichiana* and *Juniperus Exelsa*.

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## Abstract

A study on previous and current condition of a 500 ha forest area in relation to the poor regeneration of *Pinus wallichiana* and *Juniperus excelsa* var. *polycarpus*. The study area was Basho valley in Skardu district, Northern Areas, Pakistan. Situated in 3,100 to 3,800 m elevation in the rain shadow of the Himalayas the forest receives about 750 mm annual precipitation mostly in the form of snow, temperatures range from 31 °C a mean maximum in August to 0.9°C mean maximum in January, relative humidity is low all year round.

Four individual sites were chosen and transects covering 38,100 m<sup>2</sup> were laid out. Along the transects: seedlings(< 1 m), forest structure, canopy closure, micro sites conditions, grazing and ground cover was registered and the sites revisited one year later for additional measures on seedling growth and grazing. Linear fit was used to obtain results on forest structure and descriptive data, One-way ANOVA and Pearson's correlation were used for statistical analysis. Stump analysis showed a 31 % reduction in basal area, larger gaps excluded and diameter class distribution was evaluated as unhealthy due to lack of management practices. Erosion and grazing were found to have negative effects on the regeneration. Seedlings were classified into density classes and relationship between higher density of seedlings and a reduced amount of canopy closure was established. Amount of seedling was found to decline in-between the years measured manly due to disturbances in the form of landslides and flooding. A significant positive correlation between seedlings and rocks as shelters against the sun providing favourable microclimate on the shady side. 77 % of the seedlings found by rocks were found on the northern side and 5 % on southern side. An assessment of the four sites as individual ecosystems on the data available was compared to the lack of regeneration. Aside from the rock variable litter showed a positive correlation with seedling density all other groundcover variables showed negative correlation.

