3. Methods

- We sampled 16 sites across the Luquillo landscape (two rock types by two forest types with four replicates of each combination). At each site, we collected soils from 3 catenas (ridge, slope, valley). Mineral soils were sampled from 0-20, 20-50, and 50-80cm (Pic 2). The original 432 soil samples were composited by depth and topographic position for any given site (e.g. the three 0-20cm samples from a ridge at a particular site were combined), for a total of 144 soil samples. We report here depth weighted averages of the top 50cm for all data except Sr isotopes, which are reported for the top 20cm.

- Major elemental analysis of air-dried soil was conducted after lithium metal fusion and analysis by x-ray fluorescence spectrometry (XRF) by ALS Chemex ( Reno, NV).

- We measured soil loss or gain of elements relative to parent material by indexing to an initial value. The samples came from, rock type, forest type, and slope position had no statistically significant effect. As yet we have no explanation for this result. The samples came from, rock type, forest type, and slope position had no statistically significant effect. As yet we have no explanation for this.

- We hypothesize that the soil Sr isotope values will reflect differences in mineralogy of the two parent materials, which must reflect mineralogical differences in loss rate, and may reflect a mineralogical difference between the rock types.

4. Major Elemental Concentrations and Open System Mass Loss

Parameters exhibiting statistical difference

- %Si (G > V, p= 0.0002)
- %P (G < V, p= 0.0014)

- %Ca (G = V)

- %P (I > O, p= 0.0048)
- %Si (I > O, p= 0.0004)

- %Ca (I > O, p= 0.0025)

- Tau Sr (I > O, p= 0.001)
- Tau Ca (I > O, p= 0.0001)

- Tau P (R/S > V, p= 0.004)
- Tau Ca (R/S > V, p= 0.002)

5. 87/86 Sr Isotopes to Discern End-Member Inputs

We hypothesize that the soil Sr isotope values will reflect differences in mineralogy of the two parent materials, which must reflect mineralogical differences in loss rate, and may reflect a mineralogical difference between the rock types.

- The loss of P from the different soils proceeds at a similar rate despite differences in mineralogy (Porder et al., 2005). Samples of the two parent materials, which must reflect mineralogical differences in loss rate, and may reflect a mineralogical difference between the rock types.

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- %Ca (G < O, p= 0.00006)

6. Conclusions

- Despite differences in mineralogy of the two parent materials, which must reflect mineralogical differences in loss rate, and may reflect a mineralogical difference between the rock types.

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