

# Supporting Information

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## SI Text

In this work, we have monitored annual per-species abundance of vascular plants on permanent plots by counting shoot number every year in the middle of the growing season. Although this measurement is nondestructive and, therefore, very suitable for long-term monitoring, it, in theory, might not necessarily directly reflect biomass dynamics. This is because a larger number of shoots per area might lead to smaller-sized shoots in case of a resource tradeoff, for instance. To verify whether shoot number is a good predictor of alpine species biomass, we clipped all vascular plants on sixteen  $25 \times 25$  cm plots in each of our four target alpine communities in 2003 and 2004. Before clipping, on each plot, shoot number was counted for each species. Sampled plant

biomass was cleaned from litter, sorted by species, air-dried (10 d), oven dried (70 °C; 48 h), and weighed.

All “abundant” species (abundance higher than 150 shoots per square meter in at least one of the sampled plots) showed a positive relationship between shoot mass and biomass. We performed a regression analysis with mass as a response variable and shoot number as a predictor for each of the abundant species that had been sampled on more than nine plots, the latter condition to meet a necessary assumption of linear regression. All regressions were significant (all  $P < 0.05$ ), and all slopes were positive; the averaged  $R^2$  value was  $0.72 \pm 0.2$  (mean  $\pm$  SD;  $n = 27$ ). Thus, we conclude that shoot number is a good predictor of alpine plant biomass.

## Dataset S1. Data used for the analysis

### [Dataset S1](#)

Plant species list and per-species data for plant abundance, abundance–temperature slope, weighting factors used in regression analysis, and trait values.