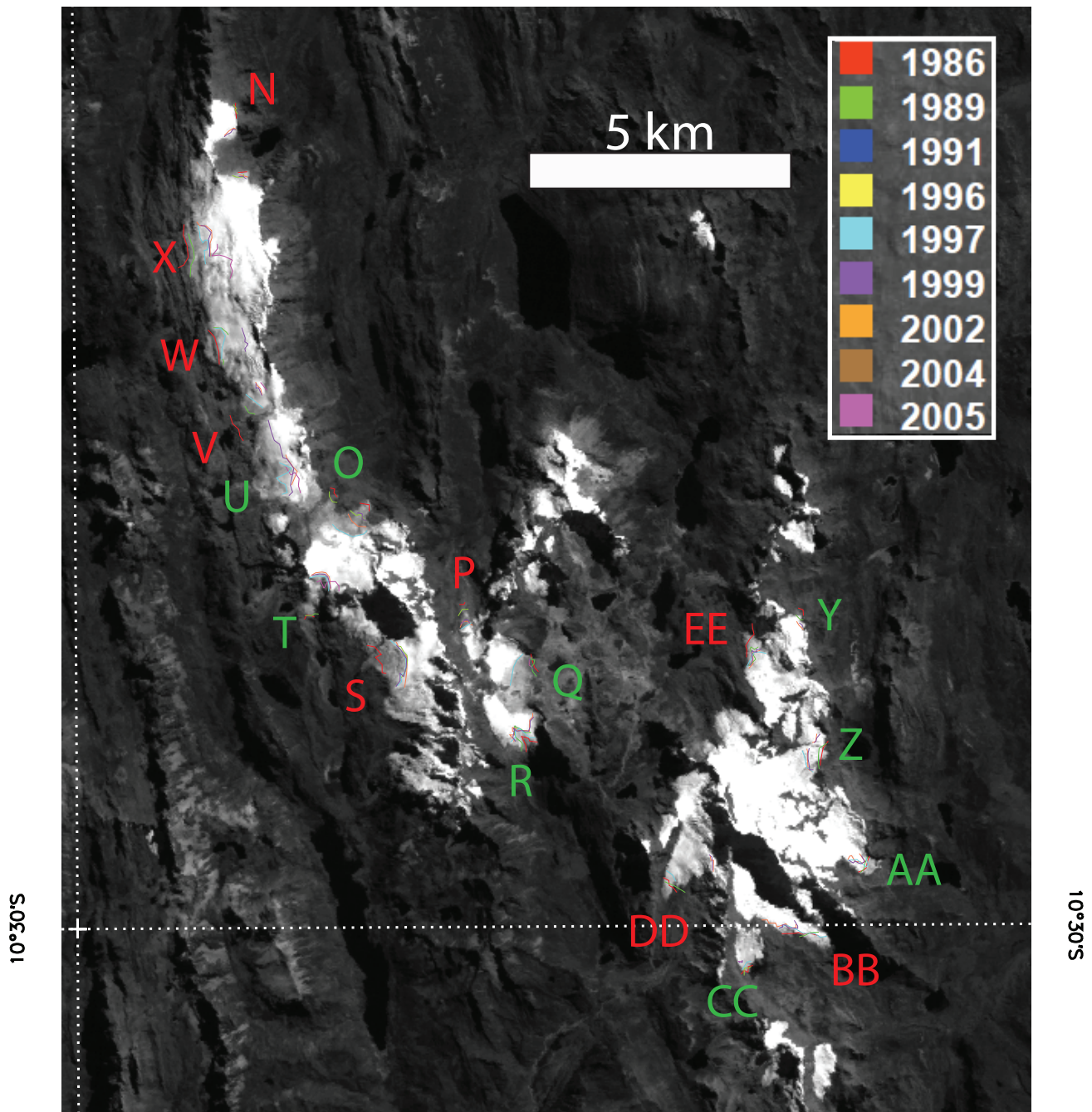


Fig. S1. Annual snowline locations for glaciers in the Cordillera Huayhuash, overlaid on a mosaic of 4-5 August 1997 Landsat TM band-3 (red;  $0.66\mu\text{m}$ ) images. In general, for gray scale Landsat images, snow is white, ice is light gray, rock and vegetation are dark gray, and water is black. The key indicates the color for each year's snowline, which represents the location of the annual SLA. Glaciers are labeled as follows: Jahuacocha (A), Mitococha (B), Chaclan (C), Carhuacocha (D), Gangrajanca (E), Quesillococha (F), Azulcocha (G), Carnicero (H), Barrosacocha (I), Jurau (J), Sarapococha (K), Caramarca (L), Rasac (M). Green (red) labels indicate glaciers with SLAs that are higher (lower) than the mean SLAs for the range.

76°50'W



76°50'W

Fig. S2. Annual snowline locations for glaciers in the Cordillera Raura, overlaid on a mosaic of 4-5 August 1997 Landsat TM band-3 (red; 0.66 $\mu$ m) images. The key indicates the color for each year's snowline, which represents the location of the annual SLA. Glaciers are labeled as follows: Luychos (N), Huascacocha (O), Jaico (P), Niñococha (Q), Putusay (R), Checchi (S), Yuracocha (T), Agopampa (U), Viconga (V), Aguascocha (W), Carcamachay (X), Caballeros (Y), Mancaneota (Z), Pichuycocha (AA), Santa Rosa (BB), Condorsenja (CC), Yanco (DD), Caballococha (EE). Green (red) labels indicate glaciers with SLAs that are higher (lower) than the mean SLAs for the range.