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Introduction

In the main text, Figures 2 and 4 show maps of bedrock lithology, normalized channel steepness, mean annual precipitation, specific stream power, microseismicity, and landslide scars across the entire study region in Far Western Nepal. Here, Figures S1-S6 show maps of these characteristics for the individual study basins, which form the basis for the basin-averaged values in Table 1. Figure S7 shows the extent of modern glaciers, which was used to compute the fractional areal coverage of ice in each basin, f_{ice} (Section 3.2.1). Table S1 reports grain size data for the sediment samples collected for cosmogenic nuclide analysis.
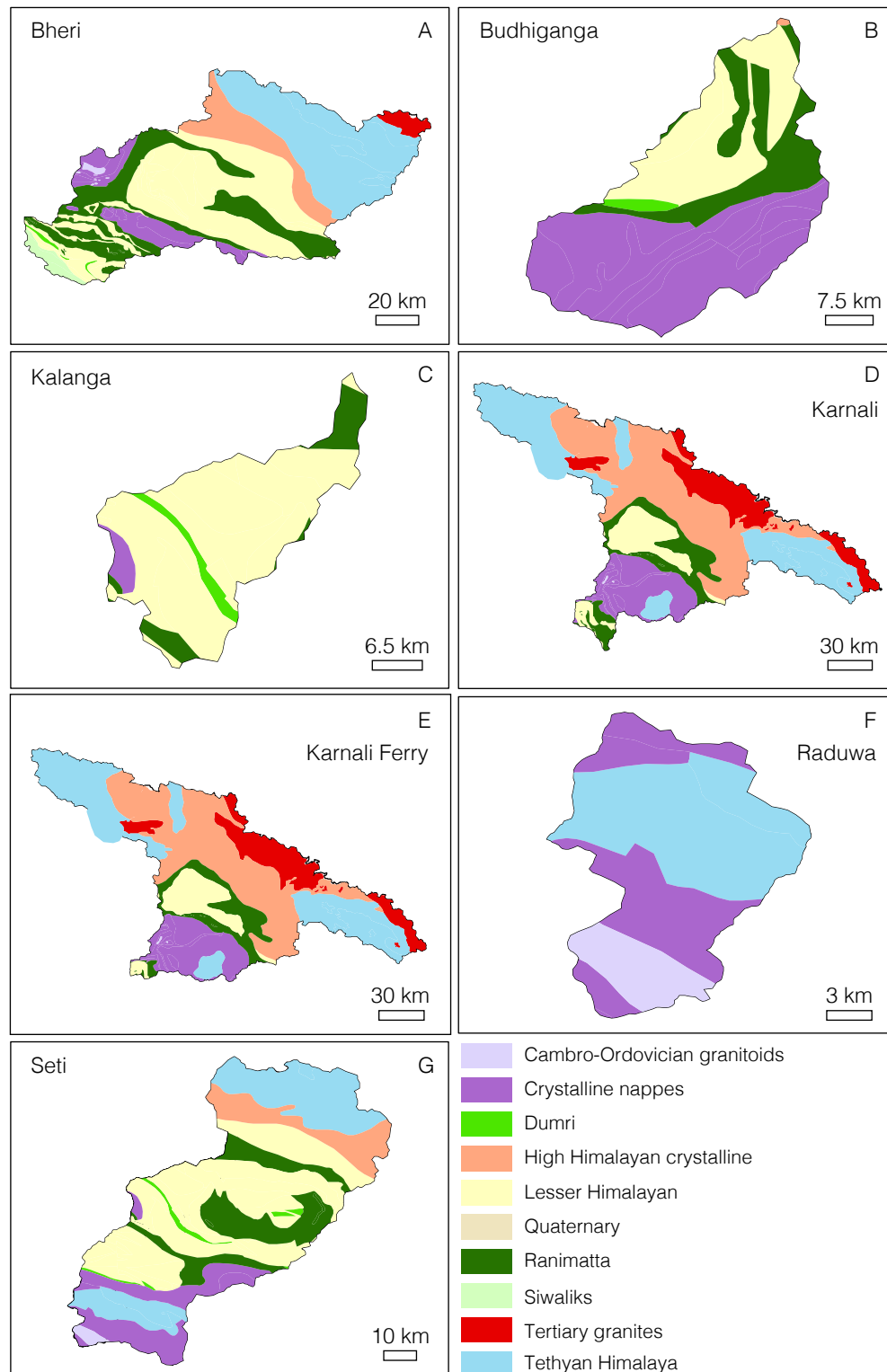
Figure S1. Lithologic maps showing the distribution of tectonostratigraphic units in the study basins (DeCelles et al., 2001; Robinson et al., 2006; Yin, 2006; Ojha et al., 2009).
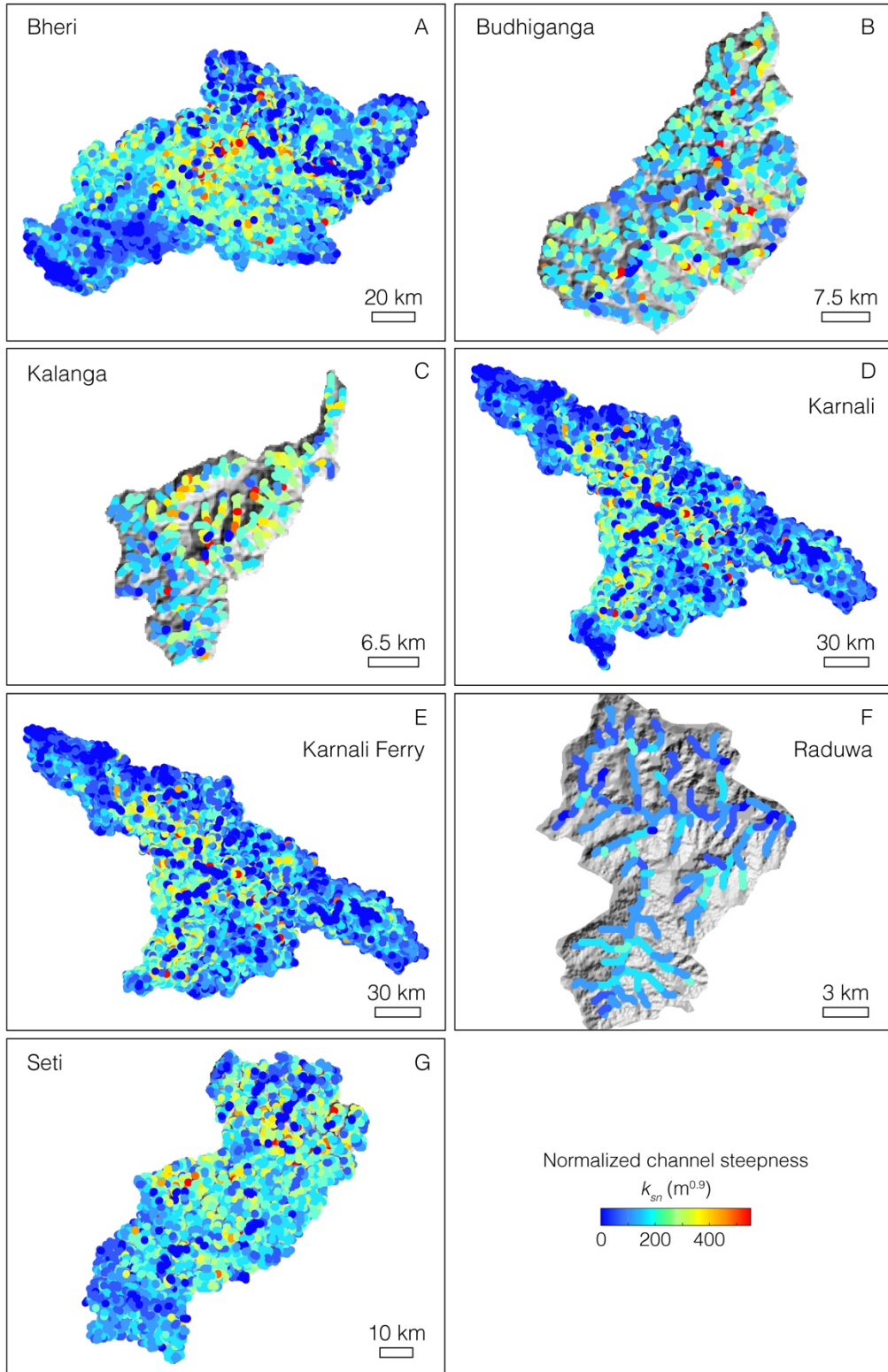
Figure S2. Normalized channel steepness (Equation 1) in the study basins atop grayscale shaded relief.
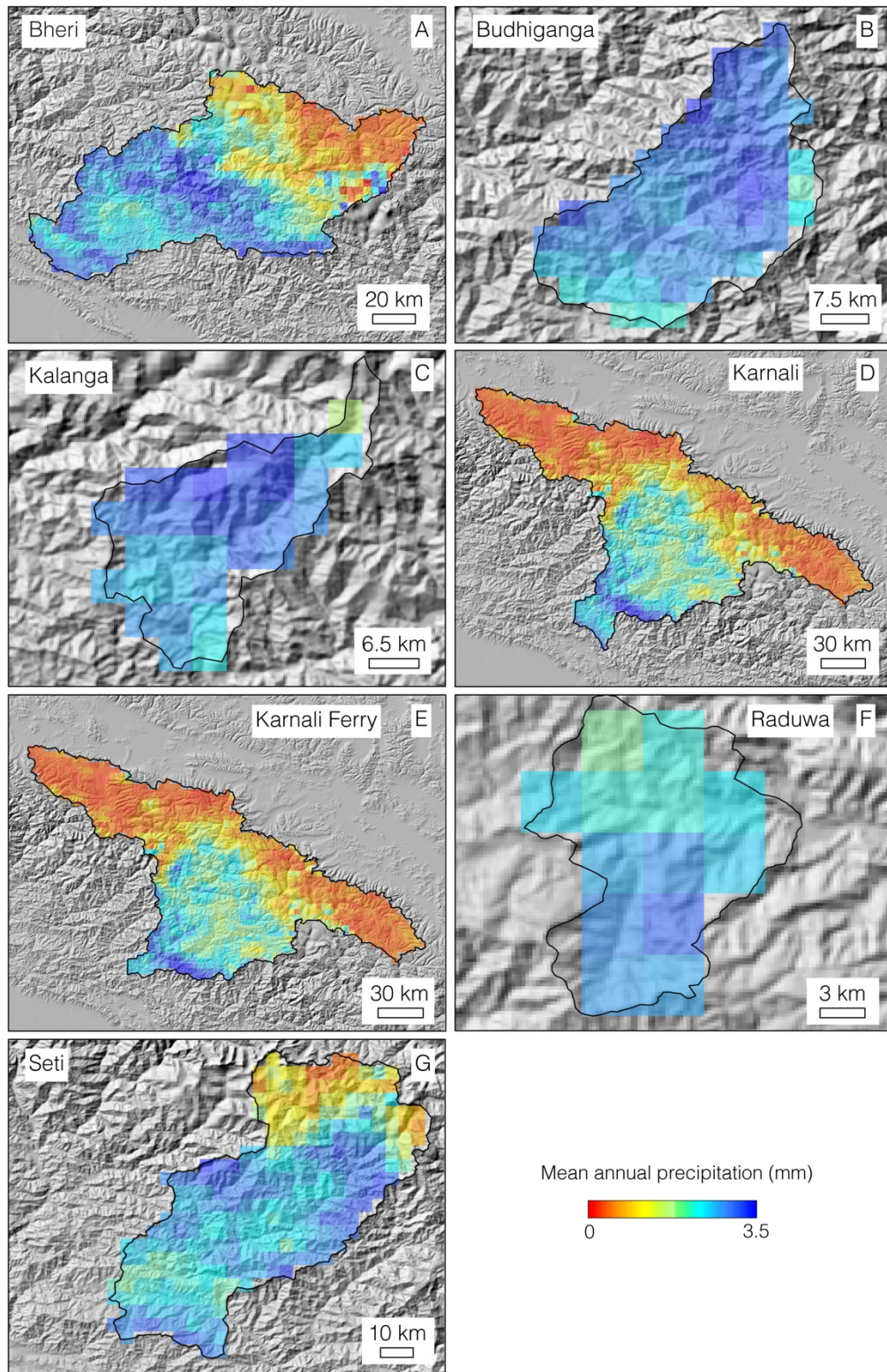
Figure S3. Mean annual precipitation (Bookhagen and Burbank, 2010) atop grayscale shaded relief in the study basins.
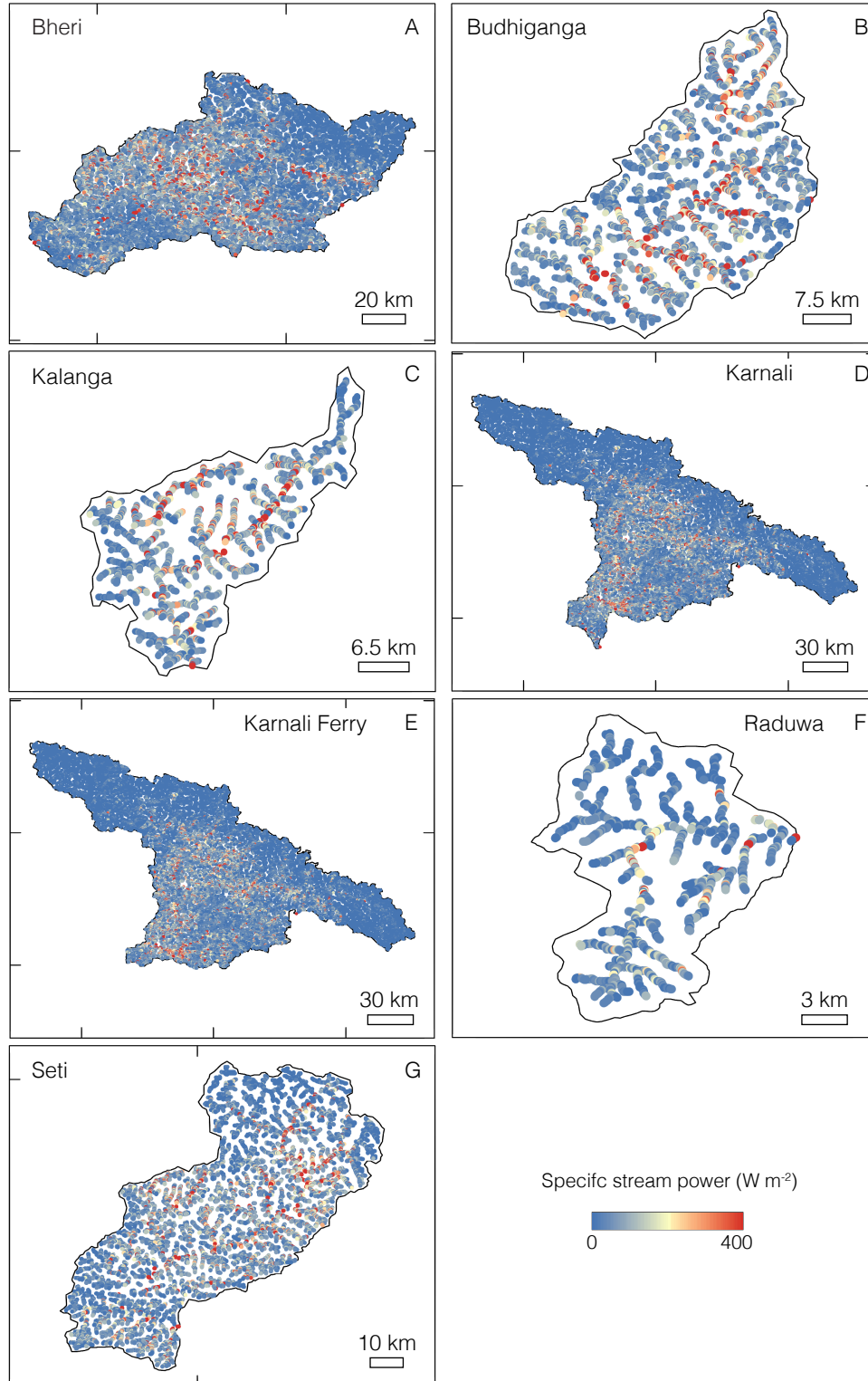
Figure S4. Specific stream power in the study basins above a drainage area threshold of 1 km^2 (Section 3.4).
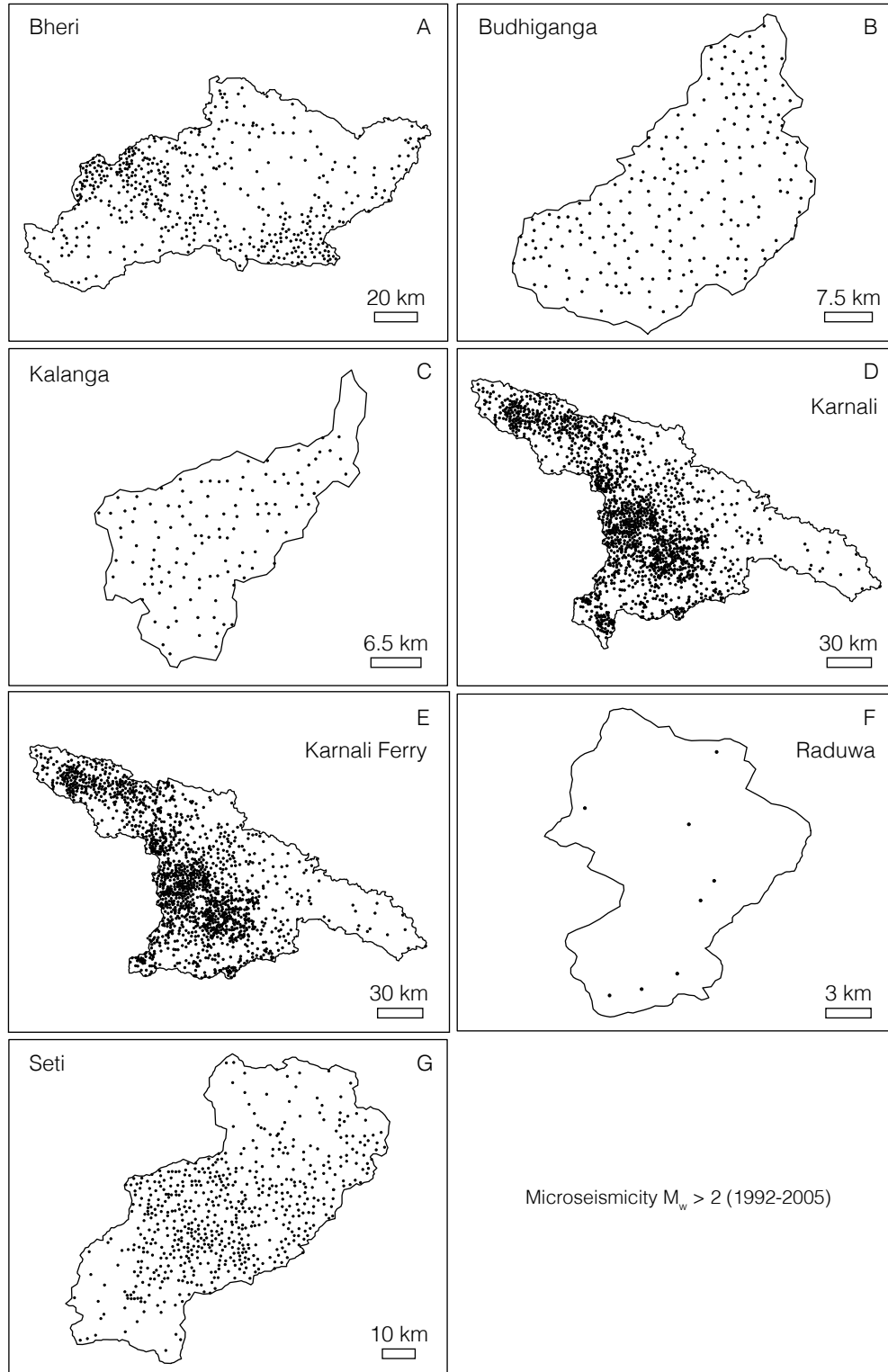
Figure S5. Locations of microseismic events ($M_w > 2$) over 1992-2005 in the study basins compiled from the epicenter map published by the Department of Mines and Geology of Nepal, 1992-2005.
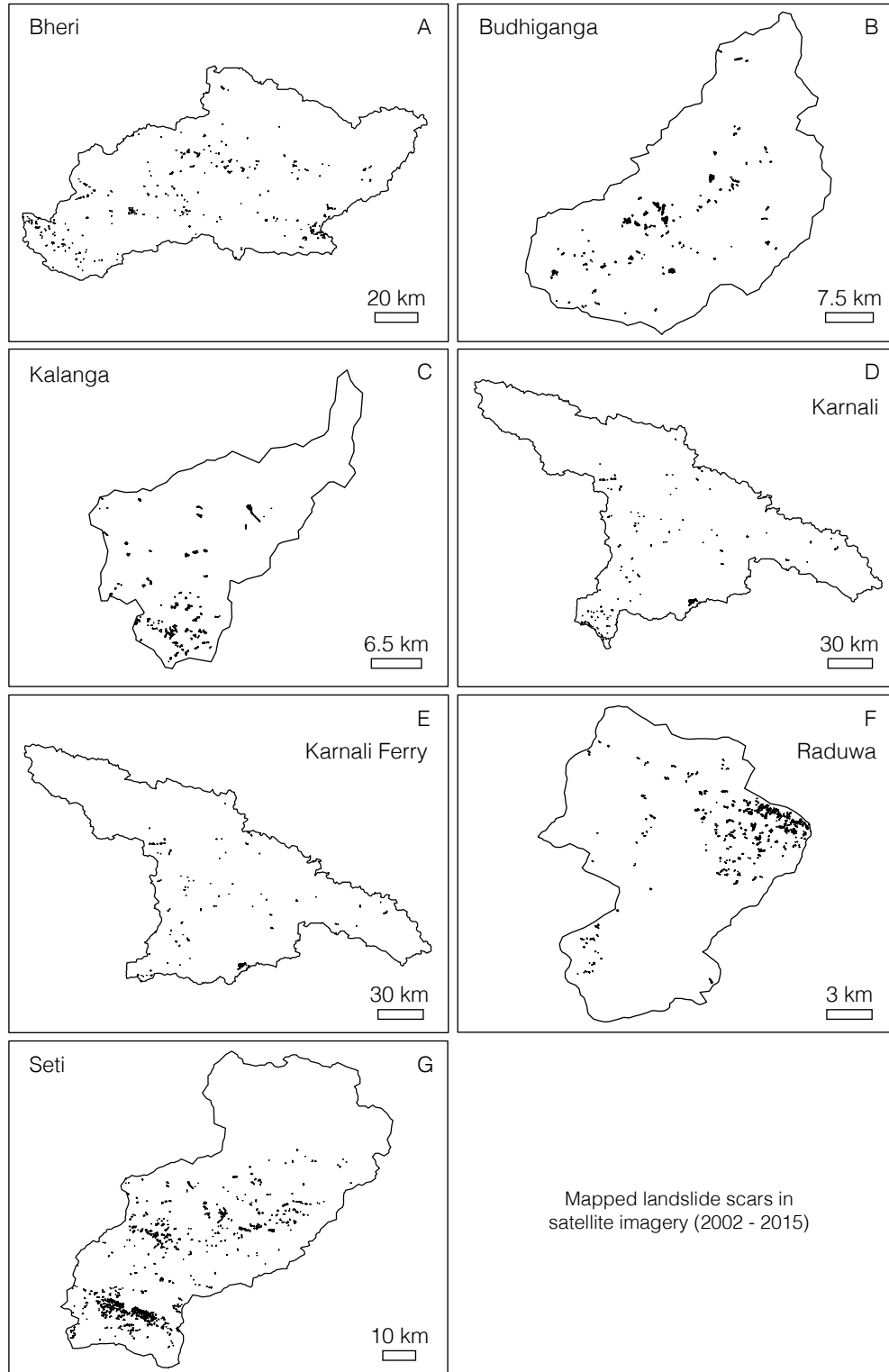
Figure S6. Landslide scars mapped in 2002-2015 satellite imagery in the study basins.
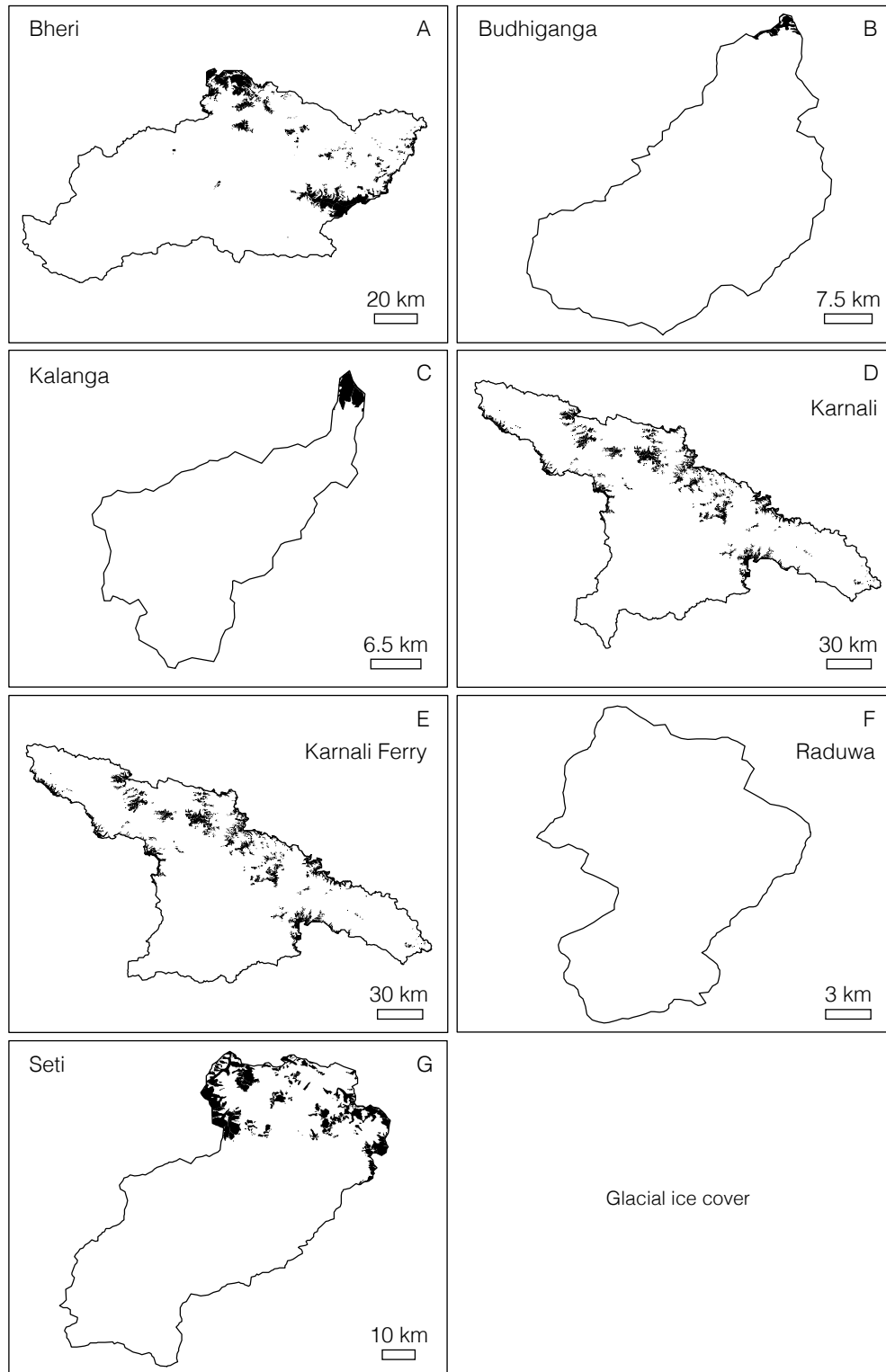
Figure S7. Extent of mountain glaciers (GLIMS and National Snow and Ice Data Center, 2005).
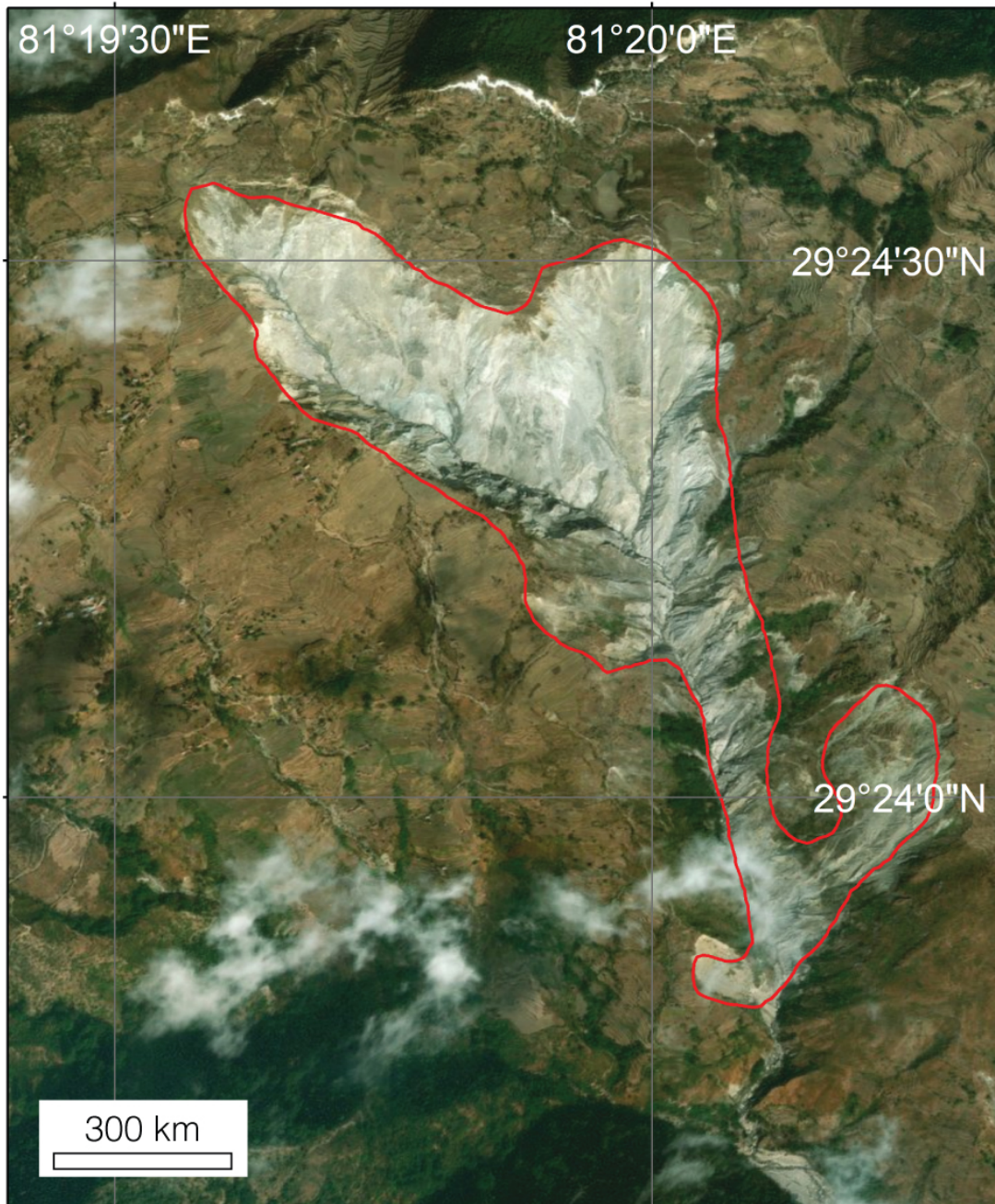
Figure S8. Example of landslide scar mapped from satellite imagery in Google Earth. This was the basis for the landslide scar maps in Figure S6 and the measurement of f_{scar} (Table 1).

Table S1. Grain size measurements in sediment samples collected for cosmogenic nuclide analysis.

Sieve size (mm)	Fraction of total mass (%)						
	Bheri	Budhiganga	Kalanga	Karnali	Karnali Ferry	Raduwa	Seti
>2.0	0.5	0.7	1.2	0.6	0.5	53.1	1.1
1.0 - 2.0	0.4	1.4	6.4	1.2	1.0	32.5	6.9
0.5 - 1.0	2.8	17.8	17.8	16.0	46.4	7.8	22.7
0.25 - 0.5	44.8	57.2	28.4	30.7	44.3	1.1	35.6
<0.25	51.5	23.0	46.2	51.5	7.8	5.6	33.8