Supplemental material for:

Spatiotemporal denudation rates of the Swabian Alb escarpment (Southwest Germany) dominated by base-level lowering and lithology

Mirjam Schaller[1,2], Daniel Peifer[1], Alexander B. Neely[1], Thomas Bernard[1], Christoph Glotzbach[1], Alexander R. Beer[1], Todd A. Ehlers[2]

[1]Department of Geosciences, University of Tuebingen, 72076 Tuebingen, Germany
[2]School of Geographical and Earth Sciences, University of Glasgow, Glasgow, United Kingdom

Correspondence to: Mirjam Schaller (mirjam.schaller@glasgow.ac.uk))

Figures
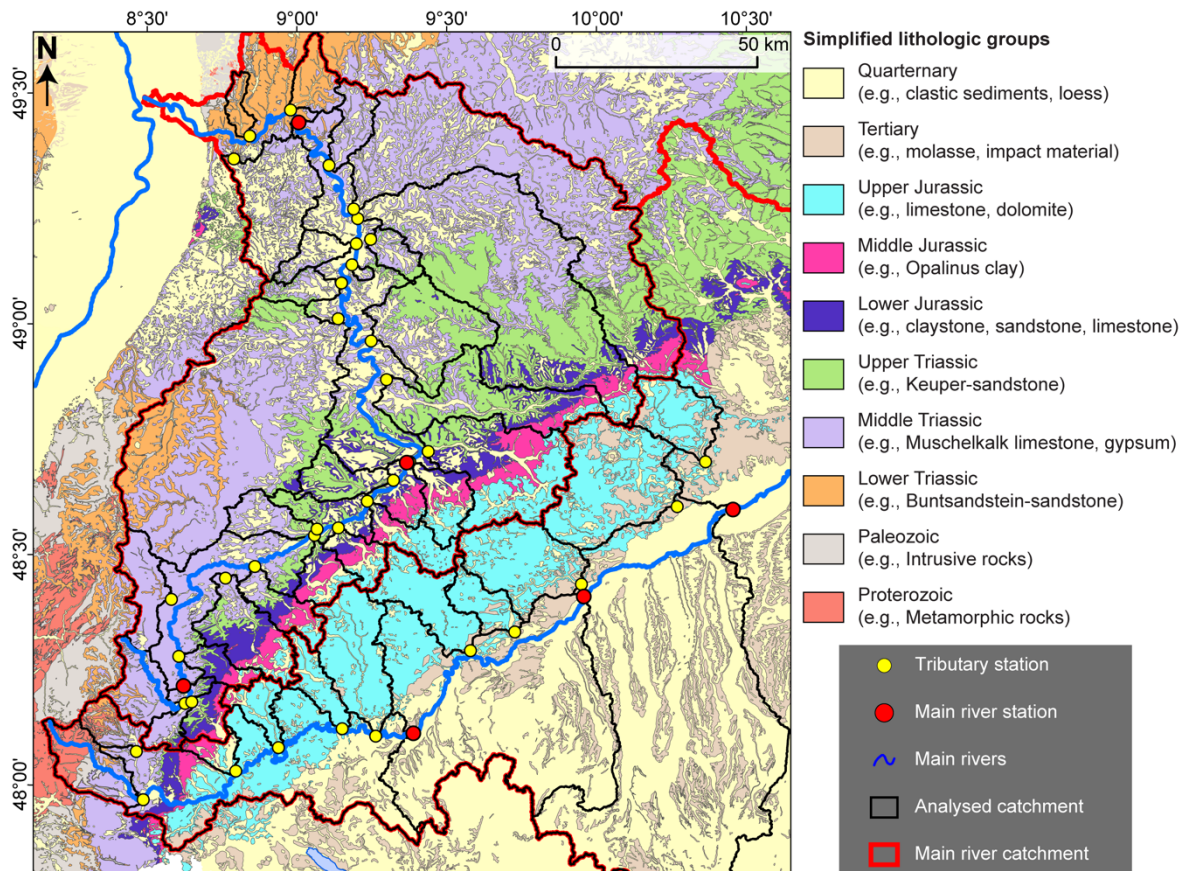
Figure S1 Simplified lithologic map for the investigated catchments around the Swabian Alb escarpment (based on map from Bundesanstalt für Geowissenschaften und Rohstoffe. Geologische Übersichtskarte der Bundesrepublik Deutschland 1:250 000 (GÜK250, WMS), 2019). The points give locations of measurement stations providing data to calculate physical erosion and chemical weathering rates.
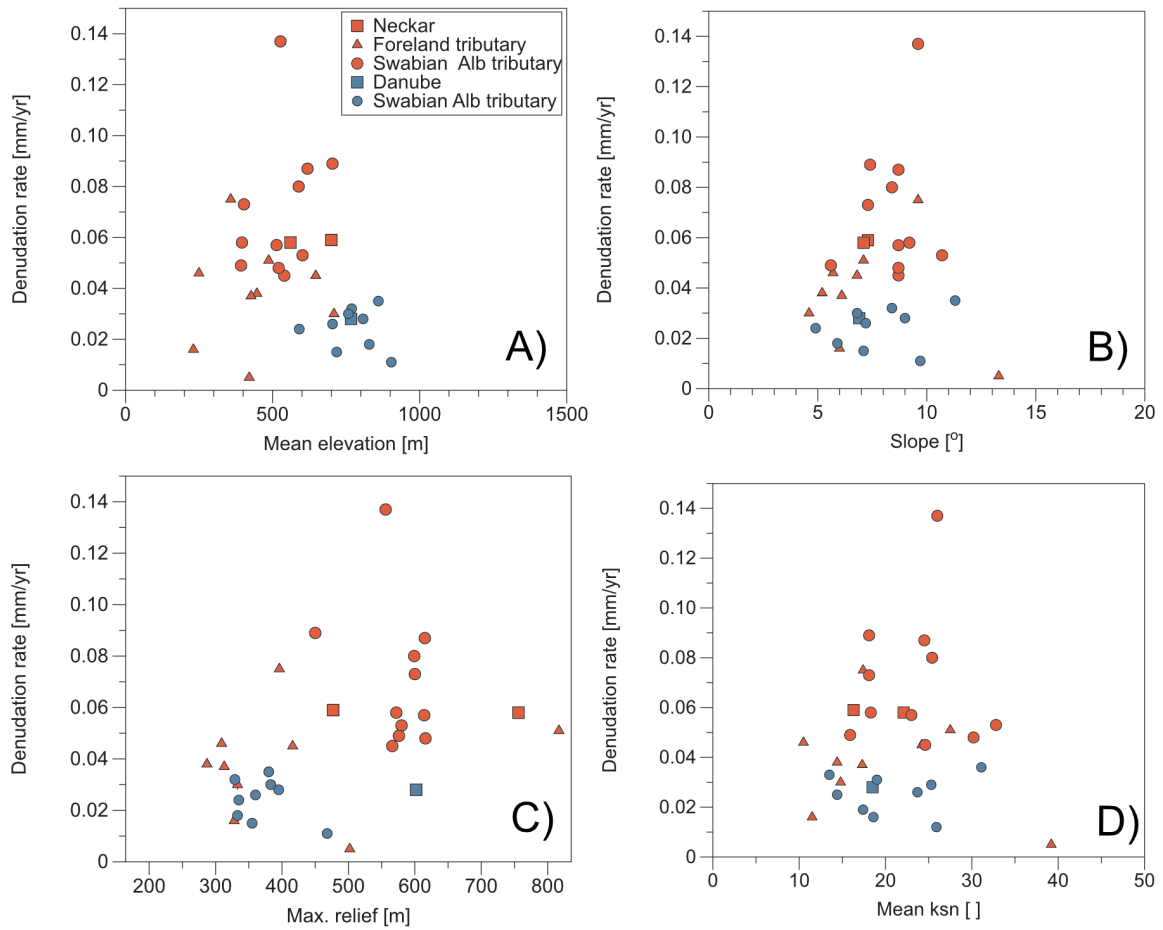
Figure S2: Decadal-scale total denudation rates versus topographic metrics; A) Mean elevation of drainage basin; B) Maximum relief; C) Mean slope; and D) Mean k$_{sn}$.
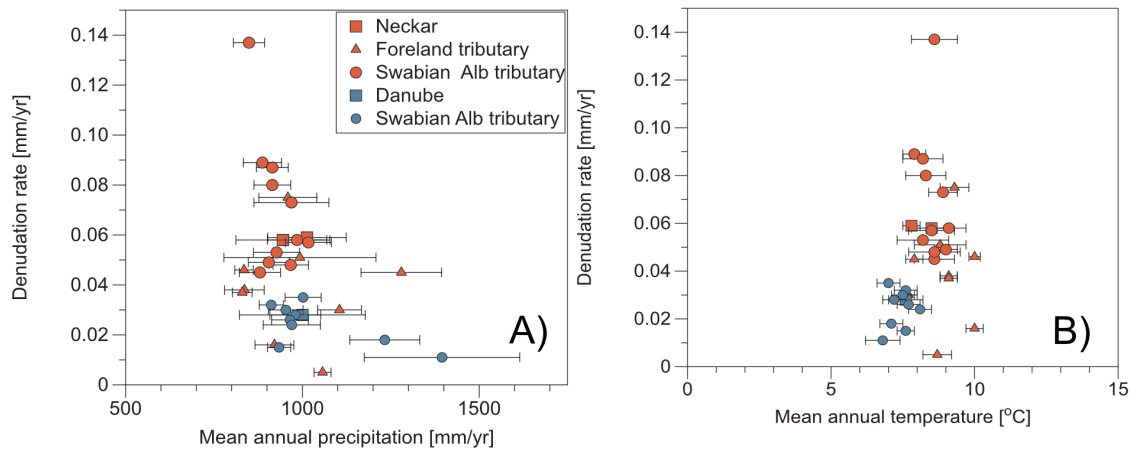
Figure S3: Decadal-scale total denudation rates versus climatic metrics: A) Mean annual precipitation; and B) Mean annual temperature.
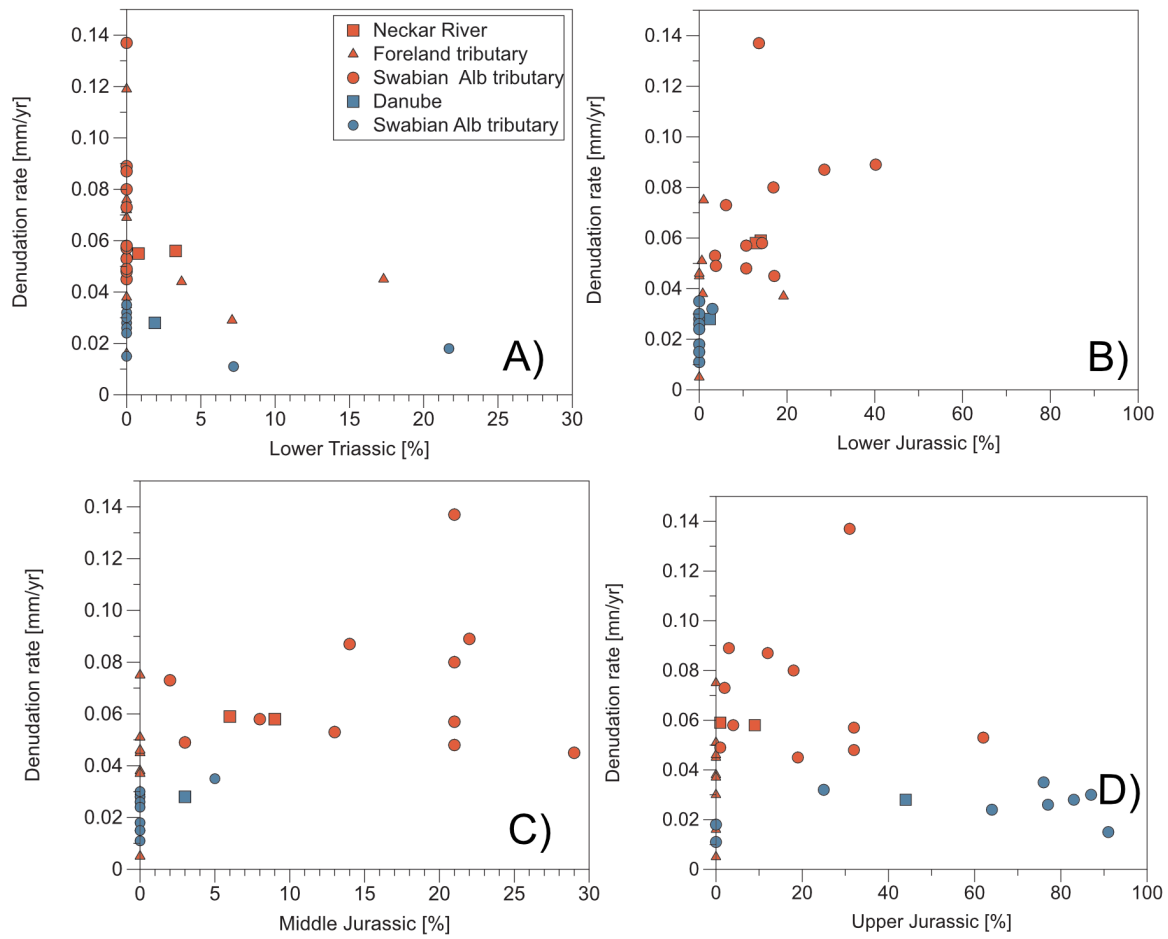
Figure S4: Decadal-scale total denudation rates versus percent exposure of two selected lithologies: A) Lower Trias; B) Lower Jura; C) Middle Jura; and D) Upper Jura.
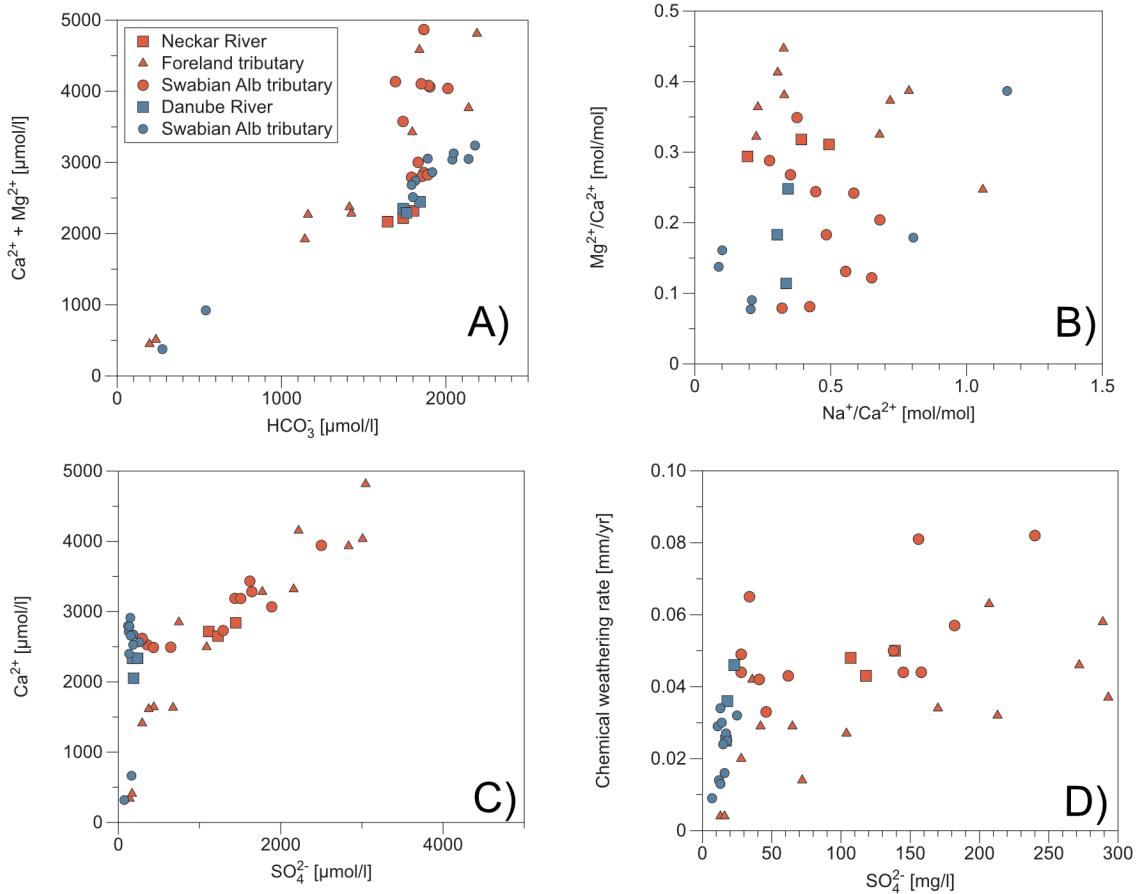
Figure S5: Plots for different chemical parameters: A) Ca^{2+} plus Mg^{2+} versus HCO$_3^-$; B) Mg^{2+}/Ca^{2+} versus Na$^+$/Ca^{2+}; C) Ca^{2+} versus SO$_4^{2-}$; D) Chemical weathering rate over SO$_4^{2-}$.
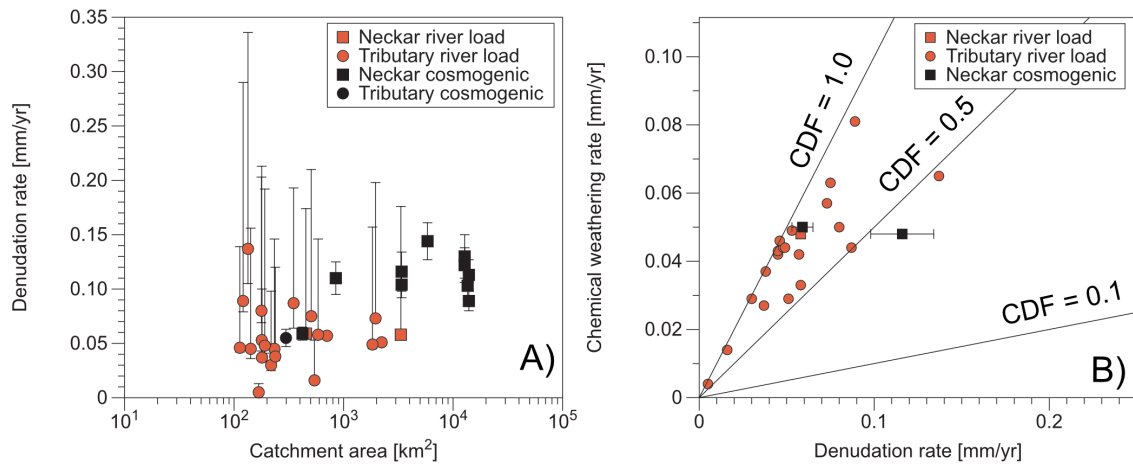
Figure S6: Total denudation rate based on river load (cred circles, this study) compared to cosmogenic nuclide-derived denudation rates from in situ-produced ^{10}Be in quartz (Schaller et al., 2001 and 2002; black squares). A) Denudation rate versus catchment area. B) Chemical weathering rate versus total denudation rates based on river load and the combination of river load and cosmogenic nuclide-derived rates. Lines indicate different chemical depletion fractions, CDF.