

## **Sediment Budget of the Andes-Amazon Sediment Dispersal System**

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**Abstract.** The sediment budget and geomorphological evolution of large rivers are affected by continental-scale crustal dynamics and climate acting over long time scales through their effect on hydrology, hydraulics and sediment transport. Unraveling these effects requires tools and information from a number of geosciences.

The Amazon River system receives 2-3 billion tonnes of sediment per year from the Andes and disperses it into three large depocenters: the foreland basin east of the range; the central Amazon trough; and the Atlantic coastal estuary and continental shelf. The processes of sediment transport and channel-floodplain exchange vary with discharge and along the valley as channel gradient and confinement change in response to recent crustal deformation. We have quantified the processes involved in this dispersal and the resulting floodplain geomorphology along several reaches from the mountain range to the estuary through several periods of the basin's geologic history. There appears to have been a puzzling severalfold increase in sediment supply from the Andes during recent millennia.