

## **Capacity versus supply limited sediment transport in the Colorado Plateau.**

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**Abstract.** One characteristic of major streams such as the Gunnison, Colorado and Green Rivers that transport water across the Colorado Plateau is that much of the sediment transported is from sources within the Plateau. In other words, the sediment loads in the major rivers are not necessarily related to the discharge. The concepts of supply limits and transport capacity limits to sediment transport have proven useful. A supply limited river is one where the sediment in transport is limited by the sediment delivered to the river from the adjacent watershed; in contrast, a capacity limited river is one where the sediment in transport is limited by the hydraulic capacity of the stream to transport the sediment delivered to the river. In this paper it is shown that tributary streams to the Green River can deliver sediment to the river that cause an increase in the wash load without necessarily increasing the bed-material load. In other words, the Green River may be capacity limited for some sizes of sediment but supply limited for other, smaller, sizes. Indices to sediment transport are used to show how the sediment transport capacity changes from year to year and how these changes may have an impact on the quantity and size of sediment considered part of the wash load and quantity and size of sediment considered part of the bed-material load

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