

Sediment Mixing at the Green and Yampa River Confluence

By Andrew L. Nichols

Tributary confluences are often marked by dramatic changes in water coloration following sediment mixing, a phenomenon spectacularly displayed at the confluence between the Green and Yampa Rivers in Echo Park (River Mile 225). A literal line identifies the locality at which the suspended sediment carried by the unregulated Yampa River mixes with that of the regulated Green River. On one side of this line is the greenish-blue water of the Green River, while on the other side is the coffee-colored channel of the Yampa.



Figure 1. Sediment mixing at the confluence between the Green and Yampa Rivers (photograph by Andrew L. Nichols)

This striking difference in water coloration is primarily related to the quantity of suspended sediment carried by each river. Because Flaming Gorge Dam starves the Green River of sediment, channel reaches between the dam and the confluence with the Yampa are largely devoid of suspended sediment, giving the water a clear to green coloration. However, the ability of the unregulated Yampa River to transport sediment supplied by tributaries near its headwaters increases the river's suspended sediment concentration, giving the water a brown coloration. Downstream from the confluence, the Green River takes on a browner hue, reflecting the substantial influx of suspended sediment.