Downstream Integrated Quality of Water Monitoring Project

Water Year 2007 Update on the Suspended-Sediment Flux of the Colorado River Ecosystem below Glen Canyon Dam

Grand Canyon Monitoring and Research Center

Adaptive Management Workgroup Meeting
August 29, 2007

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Sand mass balance in Marble and Grand Canyons: October 1, 2006 to August 1, 2007

- During October 2006, the Paria River supplied about 1.6 $\pm$ 0.2 million metric tons of sand to the Colorado River Ecosystem.
- For reference, 1 million metric tons of sand would bury a football field to a depth of 427 feet, the height of a 40-story building.
- Downstream transport of this new sand in the Colorado River during October 2006 - August 2007 was suppressed because dam releases were relatively low during this period **(i.e., ROD releases for an 8.23 million acre-foot year)**.

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Preliminary Data, Subject to Review and Revision

Paria River Update:

During early August 2007, the Paria River supplied an additional 0.5 ± 0.1 million metric tons of new sand to upper Marble Canyon.

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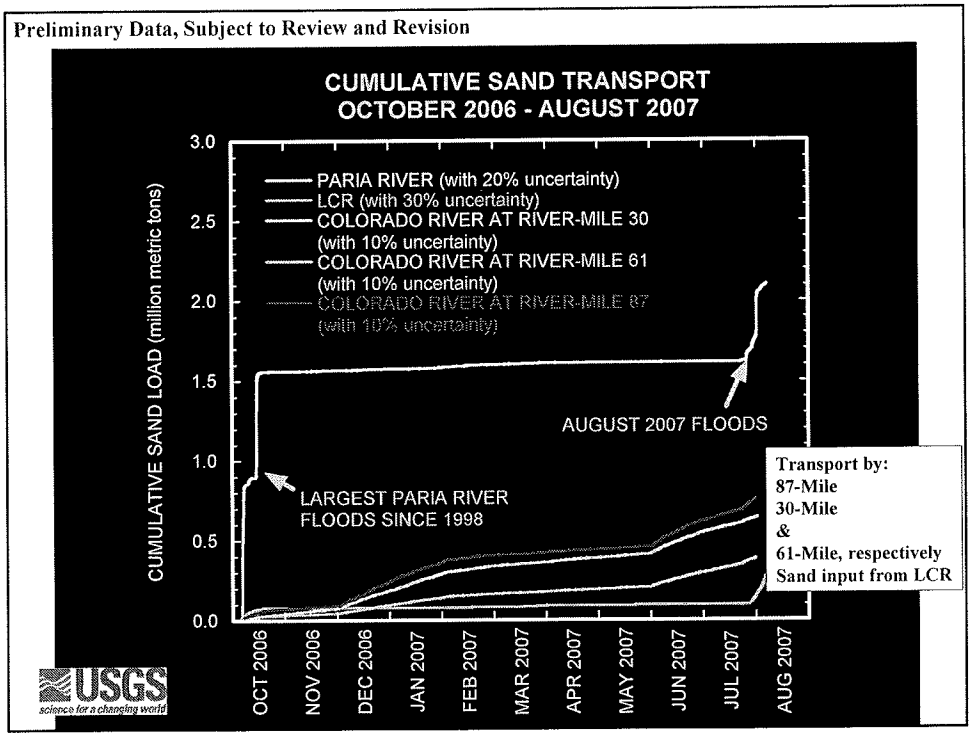
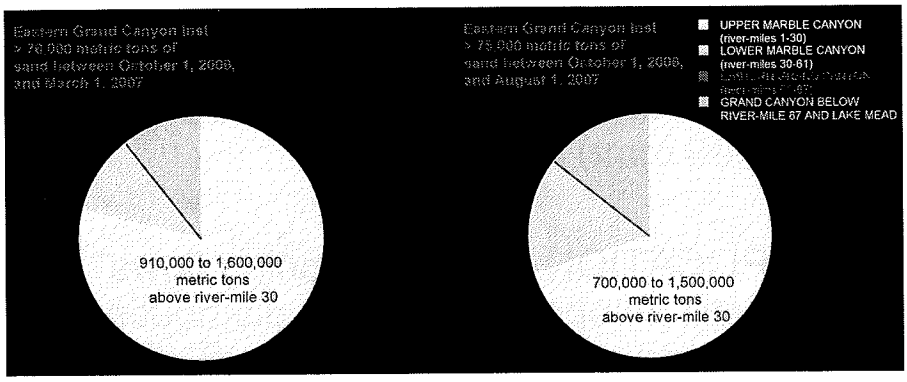


Where was the sand from the October 2006 Paria River floods as of March 1, 2007?

Where was the sand from the October 2006 Paria River floods as of August 1, 2007?



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Summary

- Relative to October 1, 2006, there is most probably 1.5 million metric tons of new sand in upper Marble Canyon (river-miles 1-30)
- Relative to October 1, 2006, there is likely 250,000 metric tons of new sand in lower Marble Canyon (river-miles 30-61)

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Summary

- Since October 2006, about half of the sand exported from upper Marble Canyon bypassed lower Marble Canyon and eastern Grand Canyon (eastern Grand Canyon lost (erosion) a small amount of sand during this period ~ 75,000 mmt)

- IMPLICATION: "preconditioning flows" are still an open question in distributing new sand prior to conducting a BHBF test?

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