Collecting continuous flow data on headwater reaches of the Little Snake River, Colorado

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Abstract. We installed flowmeters at six locations on three streams that form the headwaters of the Little Snake River in northern Colorado. Given the practical challenges in continuous monitoring hydraulic parameters in small gravel bed rivers, these flowmeters provide valuable information useful for assessing channel stability and flow conditions for aquatic biota over the full range of the annual hydrograph. The American Sigma flowmeters continuously log stage and velocity using a single sensor. The sensor utilizes a pressure transducer to measure stage and an acoustic doppler velocity probe to determine velocity. A valuable feature of the flowmeters is that a single flowmeter records the stage at multiple locations within a reach and permits assessment of the water surface profile across a wide range of flow conditions. Insight from nearly two years of field application will be presented, including criteria for site selection and flowmeter installation, routine maintenance, and repairs.

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