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Accelerated Alluviation, Legacy Sediments the Anthropocene

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This paper will present the case that geomorphology must be an integral part of any attempt to define the Anthropocene as a geological period or any particular rank. It is postulated that there is a clear lithostratigraphic boundary which can easily identified in the field and which represents a fundamental change in sediment transfer processes, and rates, caused by human activity and particularly agriculture. Two case studies in England (central & southwest) show how a 6-10 fold increase in floodplain sedimentation resulted from the erosion of arable fields but over very different time periods. This highlights the constrained diachrony of alluviation in Europe as compared to other areas where the conversion of land to large-scale intensive cultivation was more synchronous. There are good reasons to believe that these legacy sediments, and this near-global lithostratigraphic boundary, will persist into the future geological record. Lastly the implications of this for any demarcation of the Anthropocene will be discussed. This paper is a contribution by the British Geomorphological Society Working Group on the Anthropocene.