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Sediment yield scale dependency in the river Eden basin, northwest England

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A preliminary assessment of spatial scale dependency in sediment yield for the Eden basin in northwest England is made on the basis of suspended and bed load yield estimates at scales from 1 to 1370 km^2, spot samples of suspended load concentration and a dual resolution mapping exercise in which a generalized soil erosion risk map for the upper Eden (322 km^2) is complemented by a high resolution (2 m) map of erosion features and sediment transport pathways in a 5.4-ha farm field. Overall, total sediment yield decreases as basin area increases: bed load yield decreases rapidly but suspended load yield may even show a small downstream increase. The spot sampling campaign and the dual resolution mapping exercise suggest that this could reflect the impact of livestock farming in the more lowland areas. The results show the importance of sediment source and transport pathways in explaining scale dependency in sediment yield.