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Lead budget for an upland blanket peat catchment

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High concentrations of atmospherically transported, previously deposited lead are stored in the near-surface layer of peatlands of the Peak District, southern Pennines, UK. A lead inventory for a small eroding blanket peat catchment in the uplands of Peak District was calculated, and annual inputs and outputs of lead from the catchment estimated. Approximately 3 t of lead is stored in the near-surface layer of peats in the catchment. Lead input to the catchment is from atmosphere deposition, and is estimated at 1.14 kg a^{-1}. However, the total lead output from the peatland catchment is 12.58 kg a^{-1} (2.24 kg a^{-1} in dissolved form and 10.34 kg a^{-1} in particulate form). Leaching of lead and peat erosion is releasing lead into the fluvial system of the Peak District, but peat erosion is the dominant mechanism for the release of lead. If the rate of peat erosion continues, the retention time for lead in the peats of the Peak District is $\sim$ 300 years. Despite recent reductions in lead emissions to the atmosphere, erosion and runoff from contaminated blanket peat catchments in the Peak District will continue to affect the quality of sediments and water entering drinking water reservoirs of the region.