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Deriving reference values for the soil carbon pool for different forms of land use

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The dominant forms of land-use change in Austria are grassland to forest and any form of land use to unproductive land. In most cases the affected area is small and occurring at many sites. Substantiating the consequence of land-use change on the soil carbon pool with field data is rarely the chosen strategy. Instead, for reporting purposes regionally valid reference values for specific forms of land use are applied. Obstacles for the derivation of reference values are inconsistencies in the soil databases, because forest soil surveys and surveys of agricultural soils are often conducted with different protocols. Therefore a harmonisation of the data is required. We used a spline function on the depth gradients of bulk density, carbon and rock content in order to estimate soil carbon pools. Significant differences between regions and forms of land use were found. Contrary to the expectations the differences in soil carbon pools of forests and grassland ecosystems were marginal.