



Morphological adjustment monitoring after dam removals: Urumea and Leitzaran Rivers

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Dam removal has been demonstrated as one of the most frequent and effective fluvial restoration actions. The results of the geomorphological monitoring implemented in two dams in Urumea and Leitzaran Rivers (northern Spain) are presented. The first one was removed completely whereas the second one is being removed in 4 different phases. Changes in channel morphology, sediment size and mobility and river bed morphologies were assessed. Geomorphological variables and field measurements were adapted to the local characteristics of the channel and river typology. The monitoring included different techniques: topographical measurements of the channel, terrestrial laser scanner measurements of river bed and sediment bars, sediment size, transport and hardness assessment and geomorphological mapping. Channel morphological adjustment was mainly given just after dam removals and flood events reactivated geomorphological processes and morphological changes.