

[Fluvial Corridor Changes Over Time in Regulated and Non-Regulated Rivers \(Upper Esla River, NW Spain\) \(Martínez-Fernández et al. 2016\) \[1\]](#)

Over the last decades, rivers and fluvial corridors have been noticeably modified from their natural conditions. In general, damming and other in-channel human interventions have been traditionally considered as the main drivers of change. However, recent studies highlight the influence of climate, hillslope and floodplain cover changes over fluvial corridor dynamics. The present study illustrates the channel morphology and riparian vegetation responses observed in three gravel bed rivers located in the Upper Esla River, north-west of Spain.

The entire study catchment was exposed to afforestation changes and farmland abandonment during the last decades, and two of the rivers are regulated by large dams. Analysis of historical orthophotos at different periods between 1956 and 2011 allowed quantifying channel narrowing, reduction of braiding index and vegetation encroachment along the three rivers. Field reconnaissance of landforms and vegetation structure along transects showed significant differences in species composition and age structure between the non-regulated reach, where recruitment of Salicacea pioneer species existed, and the regulated reaches where mature and late-seral species were much more abundant. These responses were consistent with reductions in mean annual discharge in all rivers and with flood disturbance decrease and summer minimum flow increase that were observed in the regulated rivers.

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