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## Geomorphology

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# Principles of engineering geomorphology for managing channel erosion and bedload transport, examples from French rivers

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### Abstract

French rivers have been transformed by centuries of development to satisfy various social demands such as navigation, hydro-electric power production, flood control, or checking erosion. These modifications have led to impacts that are detrimental to ecology, to resources, and to human interests. In recent years, increased public and management awareness of these problems has given way to new conceptions and objectives in the field of river engineering, among which the goal of establishing sustainable long-term management strategies is of the highest importance. Because many of these problems are directly or indirectly related to changes in the geomorphological functioning of fluvial systems, there is a need to integrate a geomorphological approach into river engineering practices. The principles of 'engineering geomorphology' are developed here and are illustrated by examples

taken from rivers that drain the French Alps and their piedmont.



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## Keywords

gravel-bed rivers; fluvial metamorphosis; channel degradation; river rehabilitation; impact mitigation

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