



# Studies on the Effects of Artificial Alteration and Restoration of Flow and Sediment Regimes

## Restoring Flow, Sediment, and Biota to Return a River to a Healthy Ecosystem

**Background**

Flow and sediment regimes are important elements for maintaining river ecosystems. These regimes, however, are often altered by human activities, such as the construction of overcrossings or gravel extraction, which cause adverse effects on the river environment. For example, in the channel downstream of a dam, riverbeds are degraded or become coarse because flows are regulated and the supply of sediment from upstream is reduced; this impacts aquatic species and ecosystems. Yet, our scientific knowledge of these effects is limited. Experiments with flushing flows and sediment augmentation have been carried out in recent years as potential solutions to these problems. However, these experiments have not been sufficiently evaluated for effectiveness and have not resulted in the establishment of new restoration techniques. Our studies are being carried out in response to this situation. We are studying sections of rivers in which flows and sediment quantity are likely to be artificially altered, such as in the channels downstream of dams, and are investigating how to control river flows in order to conserve healthy ecosystems.

**Studying methods to improve riverbed conditions**

