

DAM REMOVALS

Complex decisions

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Credit: Willowpix/Getty

A growing interest in restoring rivers across the United States is driving decisions to remove dams that have significantly aged and are no longer fit for purpose. However, such decisions require a full understanding of the costs and benefits associated with dam removals.

Samuel G. Roy of University of Maine, USA, and co-authors quantified both benefits such as hazard reduction and ecological restoration, and trade-offs including loss of hydroelectricity production and water supply, of strategic dam removal at three spatial scales in New England. The researchers focused on New England for its high number of dams and the significant variety of ecosystem services in the region.

Using a multi-objective approach, they found that coordinated removal decisions across many dams lead to improved efficiency of trade-offs among ecosystem services, river safety and economic costs. However, outcomes at the local scale can be diverse and less equitable. The researchers also consider alternatives to dam removal in the analysis and demonstrate the potential of their model to enable multiple stakeholders' agreements at appropriate scales.

Monica Contestabile

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