

Study finds big savings in removing dams over repairs

May 28 2018



Credit: Portland State University

A new study by Portland State University researchers finds billions of dollars could be saved if the nation's aging dams are removed rather than repaired, but also suggests that better data and analysis is needed on the factors driving dam-removal efforts.

The study, published online in May in the journal *River Research and Applications*, analyzed the best available national data to compare the trends and characteristics of dams that have been removed with those that remain standing.

The researchers expect that if trends continue, by 2050, between 4,000 and 36,000 dams will be removed.

The study found that a high-end cost estimate of removing 36,000 dams

would be roughly \$25.1 billion, a significant savings over the estimated rehabilitation costs.

The American Society of Civil Engineers estimates more than \$45 billion would be needed to repair and upgrade roughly 2,170 high-hazard dams—those that pose the greatest threat to life and property if they fail. The Association of State Dam Safety Officials estimates it would cost \$64 billion to rehabilitate all of the U.S. dams that need to be brought up to safe condition, according to the study.

"I think it's time for a re-invigorated public process around managing the risks dams and aging dam infrastructure pose to public safety throughout the U.S.," said Zbigniew Grabowski, a Ph.D. candidate in PSU College of Liberal Arts and Science's Earth, Environment & Society program and the study's lead author. "It's difficult to assess the actual public safety hazards and the most cost-effective ways of mitigating those hazards because the data on dams and dam removals has not been systematically compiled in a way that allows for robust analysis by government agencies or independent researchers."

The study found that hydroelectric and water-supply dams were the types most disproportionately removed, a finding that suggests more nuanced conversations about what drives the removal of dams is necessary.

Grabowski said the choice between removing or rehabilitating dams is often framed as a cost-benefit tradeoff between the ecological, social and economic impacts of dams.

"Yet we should also be looking at how including the public in dam safety decisions might increase the number of dams that don't make sense to rehabilitate," he said.

Among the study's recommendations:

- More detailed data needs to be made public and data collection on removed and rehabilitated dams needs to be standardized to allow for more robust comparative research and better-informed decisions at the national, state and local levels
- Dam policy officials and researchers need to take an interdisciplinary approach and draw knowledge from dam [safety](#) engineering, ecological restoration, social science and technology as well as the communities affected by dams and their removals

More information: Zbigniew J. Grabowski et al. Fracturing dams, fractured data: Empirical trends and characteristics of existing and removed dams in the United States, *River Research and Applications* (2018). [DOI: 10.1002/rra.3283](https://doi.org/10.1002/rra.3283)

Provided by Portland State University

Citation: Study finds big savings in removing dams over repairs (2018, May 28) retrieved 30 June 2024 from <https://phys.org/news/2018-05-big.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.