

20th century dam building found to have offset sea level rise

August 24 2020, by Bob Yirka



Credit: CC0 Public Domain

An international team of researchers has found that dam building in the 20th century offset some of the factors that would have led to a higher rise in sea levels. In their paper published in the journal *Nature*, the

group describes their study of the factors that have led to a rise in global sea levels and what they learned.

Human beings have been spewing [carbon dioxide](#) into the atmosphere at a high enough rate to raise global temperatures for over a century. And during that time, ocean sea levels have been rising due to an increase in glacial melting and [thermal expansion](#) (as water grows warmer, it occupies more room). But several recent studies have found inconsistencies in the amount of [sea level](#) rise versus how much the oceans should have risen based on climate models and calculations. Most scientists in the field agree that sea levels should have risen more than they did over most of the past century. In this new effort, the researchers have taken another look at the problem and suggest the reason for the discrepancies was water being captured in reservoirs by dams.

The team gathered datasets created by other researchers that described [global warming](#), glacial melt and sea levels going all the way back to 1900. The team then used the data to create new models to show the rise in sea levels based on global warming for the years 1900 to 2018. They calculated that the average estimated rate of sea level rise for the entire period was 1.56 ± 0.33 millimeters per year—and the sum of the sea level change for the same period was 1.52 ± 0.33 millimeters per year—numbers that very nearly matched. They suggest the reason they came so much closer than prior studies was because they factored in the amount of melted glacier water that was captured in reservoirs by dams, preventing it from making its way to the sea. The researchers also noted that the rise in sea levels has been relatively consistent, with two major exceptions: a period during the 1940s, when sea levels rose faster than average for a few years, and a period during the 1970s when sea level rise slowed, due to the large numbers of dams that were built. The researchers also note that sea levels have been rising faster and more consistently (and matching [climate models](#)) since the 1990s as dam building has slowed dramatically.

More information: Thomas Frederikse et al. The causes of sea-level rise since 1900, *Nature* (2020). [DOI: 10.1038/s41586-020-2591-3](https://doi.org/10.1038/s41586-020-2591-3)

© 2020 Science X Network

Citation: 20th century dam building found to have offset sea level rise (2020, August 24)
retrieved 22 June 2024 from <https://phys.org/news/2020-08-20th-century-offset-sea.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.