

Old American Dams Quietly Become a Multibillion-Dollar Threat

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Last week, a Siberian hydroelectric dam failed when an explosion rocked the site's turbine room, killing dozens and taking 6,000 megawatts of electricity offline.

While the tragedy's ultimate causes are unclear, Russian media has been questioning the state of the aging Soviet-made infrastructure. Dams are getting older in the United States, too. The average age of America's 80,000 dams is 51 years. More than 2,000 dams near population centers are in need of repair, according to [statistics released this month](#) by the Association of State Dam Safety Officials.

Last year, 140 dams were fixed, but inspectors discovered 368 more that need help. That's why the American Society of Civil Engineers gave our dams a grade of "D" in its [2009 report on the nation's infrastructure](#). There are just too many aging dams and too few safety inspectors.

"With the huge number of dams getting older every day, it's becoming a bigger and bigger problem," said Larry Roth, deputy executive director of the ASCE. "The policing of maintenance and filing of inspection records is relatively haphazard, not because of lack of focus or knowledge of significance, but they just don't have the monetary resources to do it."

The Association of State Dam Safety Officials estimate that [\\$16 billion would be needed](#) to fix all high-hazard dams. The total for all state dam-safety budgets is less than \$60 million. The current maintenance budget doesn't match the scale of America's long-term modifications of its watersheds.

While dams have been built in this country for a couple hundred years, the first half of the 20th century saw a building boom. Large dams were built for hydroelectric power, smaller dams to provide water for industrial concerns or irrigation. There was little state or Federal

regulation, particularly of the little dams in small watersheds, until the 1970s, [when five major dam failures](#) took hundreds of lives and caused almost \$1.5 billion in damage. The Carter administration began to put safeguards in place, but the inspections continue to be carried out at the state level.

In some places, like California, that works pretty well, Roth said. But other states haven't put much money toward dam safety, and Alabama hasn't allocated any cash at all. State dam inspectors have to look after an average of 160 structures.

Worse still, more people are moving into risky areas. As the American population grows, dams that once could have failed without major repercussions are now upstream of cities and development. That's why the number of high-hazard dams has increased from less than 9,000 in 2001 to more than 10,000 now.

The Bureau of Reclamation, which manages a portfolio of more than 350 dams, has a team of close to 50. That's the big reason the government-managed facilities are less of an issue.

"Most of the dams that are hydroelectric are generally well-inspected and well-maintained," Roth said. "It would be safe to say that most of our hydroelectric dams are safe in the U.S."

The rigorous process that Reclamation requires catches problems. Brian Becker, chief of the Dam Safety Office at the Bureau said they've modified 70 dams to reduce their risk failure.

"If dams are properly operated and maintained, the useful life of a dam can be very long," Becker said. "There are dams that are centuries old."

But not all dams will make that it that long. Many privately owned dams are not receiving the proper attention to keep them from failing.

"They are not being maintained and they are getting older and the conditions around the dams are often changing," Roth said.

In some cases, the owner of the dam isn't known. The businesses that built most 75- or 90-year-old dams are long gone. Without an owner of record, it's hard to find someone to pay for necessary repairs. Even if an owner can be found, they sometimes don't have — or claim they don't have — the money to fix the old earthenwork or concrete dams.

State officials are forced into a tough spot. They can't afford to rebuild dams themselves, but they also can't afford to get rid of them either. Removing a dam that's been around for 50 years isn't easy, and it could actually negatively impact the flora and fauna that have adapted to the reservoir.

"Not only do you have to be very careful taking it down, but you could cause some serious environmental reversal," Roth said. "It's a man-created environment but it becomes an environmental issue to alter it."

So, we're stuck with thousands of dams needing repairs and no money to make those repairs or get rid of them. It's probably only a matter of time before another disaster like the [Kaloko dam failure in Hawaii in 2006](#).

"That was just the worst-case scenario: An owner who didn't understand his responsibility and didn't listen to the state regulators, and a state regulation system that was lacking in funds to enforce the code," said Lori Spragens, executive director of the Association of State Dam Safety Officials. "Then that dam failed and killed seven people."

Not even the federal stimulus package directed any money to this particular set of shovel-ready projects. By her organization's count, Spragens said very little cash from the [Recovery Act](#) was going to repair the nation's dams.

Combined with the [deplorable state of the nation's bridges](#), it goes to show that the Russians don't have a monopoly on dysfunctional political systems that let a nation's infrastructure crumble.

<http://www.wired.com/wiredscience/2009/08/agingdams/>