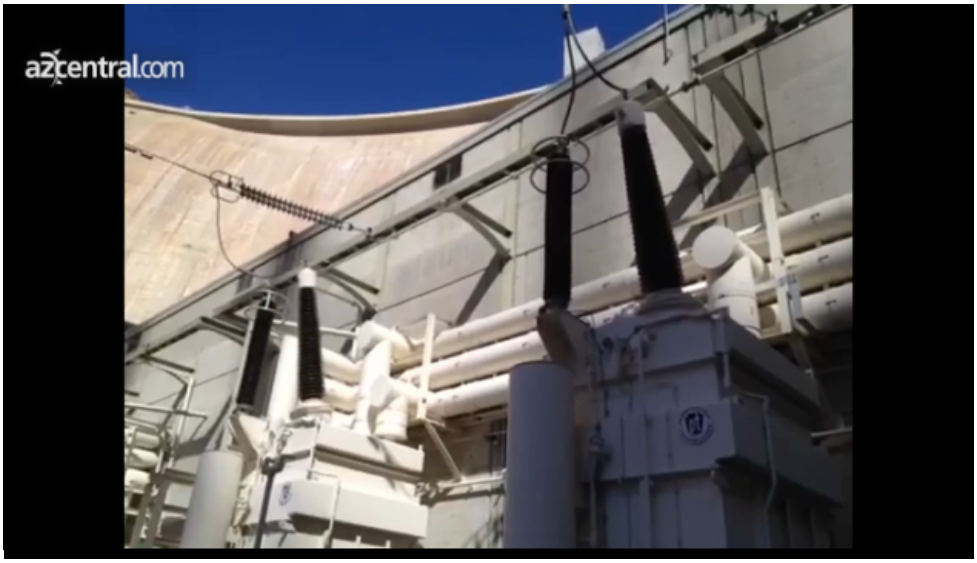
What will the future hold for Glen Canyon Dam?

Activists are still hoping to see dam demolished, lake drained in hopes of restoring majestic canyon



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Glen Canyon Dam full of use, conflict after 50 years

Environmentalists lament failing

By Brandon Loomis
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MOAB, Utah — Two men sat beside the Colorado River at Lees Ferry slugging Coors and stoking a “probably illegal” fire into the morning, cooking up a dream that would infuse both their lives’ quixotic work.

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The new friends shared a brainstorm for a bold plan, which a sly smile from one of them 4-1/2 decades later indicates was only half-bluster:

Let's get rid of Glen Canyon Dam.

It was a radical idea that got them proudly labeled as "kooky." Today, for everyone from government water managers to university professors to wakeboarders, the concept is at least as wild now that the thirsty Southwest has grown up. But some people still sit around dreaming of draining Lake Powell, and a few think science is on their side.

The way Ken Sleight, now 84, tells it from his Quonset-hut ranch office near Moab, Utah, the insult of Lake Powell — "Lake Foul" as he calls it — demanded desperate measures, or at least fanciful schemes, that night back in 1969 or so.

Glen Canyon Dam had drowned the country he was making a life in as a river runner and backcountry outfitter. It forced Sleight to haul his raft hundreds of miles around what one might call the desecrator of his temple — "They destroyed Cathedral in the Desert!" — to put in at Lees Ferry and float to the Grand Canyon.

So, he and his buddy slurped beers under the stars and imagined getting their hands on surplus World War II dam-buster bombs, the kind British pilots dropped on German reservoirs.

"Good thing there was no surveillance back then," Sleight said, grinning.

If this sounds like the plot of a suspense novel, it kind of is. Sleight's campfire companion was Edward Abbey, who had by then written his "Desert Solitaire" memoir but not "The Monkey Wrench Gang." That 1975 novel envisioned a handful of saboteurs battling the West's creeping industrialism and working for Glen Canyon Dam's demise. Abbey died in 1989.

The men had corresponded over Sleight's admiration for Abbey's chronicling of his time at Arches National Park but never met until Sleight and his girlfriend showed up to launch a trip below Glen Canyon Dam and found Abbey working as a ranger there.

Sleight became the inspiration for the book's big-eared, Jack Mormon river runner, "Seldom Seen Smith," and to this day, he remains committed to the cause. He has filed lawsuits and staged rallies, and he still believes. Maybe, he said, the current drought will persuade water managers to drain Powell so they can fill Lake Mead, the critical trough for big population centers downstream of the Grand Canyon.

"I'm on the threshold of going," he said of his mortality. "But I always wanted to see that water flowing freely."

Holding less water

For technical expertise, Sleight defers to John Weisheit, a fellow Moab environmentalist with the Living Rivers group. Weisheit notes that Powell is less than half-full, its water level is dropping, and it is projected to have larger swings in water level as climate change takes hold. The government could restore the river's — and the Grand Canyon's — ecological health by draining Powell and still could fill Lake Mead, he said.

"It can't be considered a reliable source of water anymore," Weisheit said of Lake Powell. "Send (the water) down to the place it's been going for 6 million years, which is the Gulf of California," he said of excess water that Mead could not hold.

Under current law, it is hard to imagine the U.S. Bureau of Reclamation draining Lake Powell.

The Upper Colorado River Basin states — Colorado, New Mexico, Utah and Wyoming — are bound to supply on average 7.5million acre-feet of water per year to Arizona, Nevada and California, with some left over for Mexico. (An acre-foot supplies roughly enough water for two Southwestern households for a year.) That's more than flows down the Colorado River in some drought years, and the upper states theoretically are entitled to an equal take. Lake Powell's 24million-acre-foot capacity is the engineering linchpin to this water distribution.

A Bureau of Reclamation study completed last winter concluded that as the region's population grows past the 40million who currently rely on the Colorado River for water, the river supply is likely to come up 3.2million acre-feet short by 2060.

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Somehow, the region will have to import, shift, save or reuse enough water for about 1.6 million households by then.

That study built on a 2011 Interior Department report predicting a 9 percent decline in average runoff in the watershed by midcentury. As of today, the region has endured its driest 14-year stretch in recorded history.

“We’re seeing the effects of climate change right now,” said Anne Castle, assistant U.S. Interior secretary for water and science. “You have to give serious credence to the idea that this is the new normal — or at least that prudent water managers have to plan for it.”

Meeting future needs will require the existing reservoir system, she said, and smarter use of what it provides.

“Lake Powell is a significant part of our water storage, and it’s also really important to our electrical grid,” Castle said.

The Sierra Club, whose early officials vehemently fought and defeated dams at Dinosaur National Monument in Colorado but acquiesced on Glen Canyon, still regret the results.

“Two of the biggest environmental disasters, as far as dams were concerned, are Hetch Hetchy (in Yosemite National Park) and Glen Canyon,” Sierra Club Deputy Executive Director Bruce Hamilton said. “No one would dream of building those today.”

His organization advocates removing both.

“We actually have the opportunity to remove the damage,” Hamilton said. “I don’t know what the timetable will be, but it is a good thing to do and the right thing to do. And there are other ways to get the water and power.”

Conservation, water reuse and the region’s growing solar industry can compensate, he said.

Not going anywhere

To some grappling with the Southwest’s water future, dam removal is inconceivable.

“It’s a non-starter,” said Dave White, co-director of Arizona State University’s Decision Center for a Desert City, which studies water-sustainability options to deal with climate change. “(There is) zero probability of removing either Glen Canyon or Hoover.”

The reason is that those dams, after a wet-weather cycle, can capture and store four years of river flows to dole out during drought.

“(Dam removal) would be fairly catastrophic,” White said. “We have too much demand on an annual basis to be met by the natural in-flow of the river.”

Even without accounting for climate change, he said, the Bureau of Reclamation’s water-supply study found that population growth in coming decades would suck Lake Mead to below 1,000feet in elevation in 7percent of the years. That elevation is low enough to trigger a water shortage and rationing among the states — something that has never happened. The lake’s current elevation is about 1,107feet. Farm fields across the Sonoran Desert, which currently use the majority of Arizona’s Colorado River water, could go fallow.

“It requires us to think differently about how we grow,” White said.

The study further explored the paleontological record and found droughts lasting 30years or more — about twice the length of the present drought. It predicted that Lake Mead could drop to crisis levels in up to 16percent of years. Factor in climate-change models, the bureau found, and there is potential for shortages and rationing in 44percent of coming years.

Those estimates count on Lake Powell’s continued augmentation of Lake Mead, meaning shortages would happen even more frequently without Glen Canyon Dam.

White describes the dam’s future in economic terms, comparing it to banks that were bailed out because their insolvency would ripple across the nation.

“Too big to fail,” he said.

But, as the financial meltdown showed, past performance does not guarantee future results.

Some geologists fear that, regardless of what drought or climate change may have in store, Glen Canyon Dam’s biggest threat is from floods. The dam’s engineers designed it to withstand floods far bigger than any in the historical record, which dates to the early 20th century. They didn’t look back far enough to see how mighty the Colorado River can be.

The bureau built Glen Canyon Dam’s spillway capacity to handle about 10,800 cubic meters of water per second during a peak snowmelt runoff lasting up to 122 days.

According to a 1994 U.S. Geological Survey report published in the Journal of Geology, layers of river deposits indicate that a flood greater than 14,000 cubic meters per second had swept past Lees Ferry, just downstream of Glen Canyon Dam, sometime in the past 1,200 to 1,600 years.

University of Arizona hydrologist Victor Baker participated in that research and is completing a new paper

that will chronicle larger flows than scientists had imagined upstream of Lake Powell, near Moab.

Sedimentation layers there — before the Green River, the Colorado's largest tributary, joins it — indicate that five floods exceeded 8,000 cubic meters per second and that two of them exceeded 9,500 cubic meters per second.

If the Green were similarly enlarged during a heavy spring runoff, the two rivers could overwhelm the dam.

The upshot: Floods that could destroy Glen Canyon Dam have occurred more commonly than was assumed 50 years ago.

"Nature will decide when this is a problem and how much of a problem it is, but there are data that were not available when Glen Canyon was designed," Baker said. "Dams are things that last for 100 years, but they don't last forever."

Behind the dam

These days, Lake Powell's status as a silt trap is obvious. At Hite, on the reservoir's upper end, the boat ramp once used as a raft takeout is dry. Guides press on to Dirty Devil or Bullfrog, paddling or motoring past vast mud flats for hours.

Some crews have shifted to smaller boats so they can avoid the long trip to Bullfrog by winching the rafts up a steep ramp at Dirty Devil.

"It was eight hours, motoring (to Bullfrog)," 22-year-old Utah river guide Mickell McKinnon said. "It was just loud and long," and she didn't get back to Moab until midnight.

Some consider the growing mud flats a sign that dam builders were shortsighted.

"This is what you get when you dam sediment-loaded rivers," 28-year-old guide Colin Evans said after hopping off a raft at Dirty Devil. "This is just a fraction of the mess that's under the crystal-clear waters of Powell."

A 1986 Bureau of Reclamation study estimated that Lake Powell was gathering sediment at a rate of about 37,000 acre-feet per year, and the agency still cites it as evidence that the reservoir would take at least 700 years to clog fully. Water capacity would diminish slowly in the meantime.

John Williams, owner of a Moab rafting company, said the creeping siltation is reason to consider "opening up the spillways and just letting the river reclaim itself."

Williams said he's no radical — "a conservationist, but maybe not an environmentalist." Still, he considers the gunk at Powell's upper end a sign of the futility in fighting nature.

"Go down there and hang out for a while and you go, 'God, what have we done here? What have we achieved? Not much.'

"Of course, I'm a river runner."

Down reservoir, the sediment issues are imperceptible to visitors. At Antelope Point Marina near Page, people wakeboard under a mechanized pulley and lounge on houseboats. The marina hums with power boats.

About 135,000 people entered Glen Canyon National Recreation Area through the marina last year, Antelope Point Marketing Director Karlyn Bunting said. But, he said, the Southwest's growing thirst and clout — not recreation — will keep the dam standing come drought or high water.

"The more people you have here, the more political and economic influence you're going to have," Bunting said. "You'll find solutions."

That's a prediction that ASU's White shares, for Glen Canyon and Hoover dams.

"I can't imagine a situation in which any major obstacle would prohibit the repair, redesign or whatever of those two dams," he said.

Others can't imagine what Glen Canyon restoration advocates are hoping to restore. Remove the dam and there will be a silted-in canyon minus the American Indian structures and artifacts that people lament.

"It might not smell too damn good," Page Mayor Bill Diak said. "You wouldn't gain back what was covered up. That stuff's not going to be what you remembered."

But activist Sleight said much of the area can be as beautiful as he remembers. Some of the side canyons already have responded to the lower water level. He remembered a trip to Davis Gulch in the 1990s, the last time the water neared this low point. New cottonwoods were growing.

"The main canyon is going to take years and years — 100years — to come back," Sleight said. "Maybe it'll never come back. But the side canyons, they will come back. They're flushed out by floods."

Paul Ostapuk, a reservoir booster with the group Friends of Lake Powell, hopes it never comes to that. He imagines dredging, sediment bypasses and other fixes keeping the dam functional for 1,500 years. Even then, he said, the mud piling up behind the dam may have built up to become prime soil for a farming boom.

“I see Lake Powell never really going away,” Ostapuk said.

One way or another, Glen Canyon Dam’s imprint will endure.