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The Future of the Glen Canyon Dam

Completed in 1963, Glen Canyon Dam was designed to operate with a full reservoir behind it. But climate change and rising demand for water across the thirsty West are shrinking Lake Powell. It's time to consider modifying the dam's aging infrastructure to ensure it can operate at low water levels while protecting environmental, cultural, and recreational interests in the Grand Canyon.

The problem

- Snapshot: 2022
- Lake Powell 1/4 full

The U.S. Bureau of Reclamation, which operates Glen Canyon Dam, warned that if water levels in Lake Powell continue to fall, the dam will not be able to function normally. That means less water delivered to communities and crops downstream, less or no hydropower, and lower flows through the Grand Canyon.



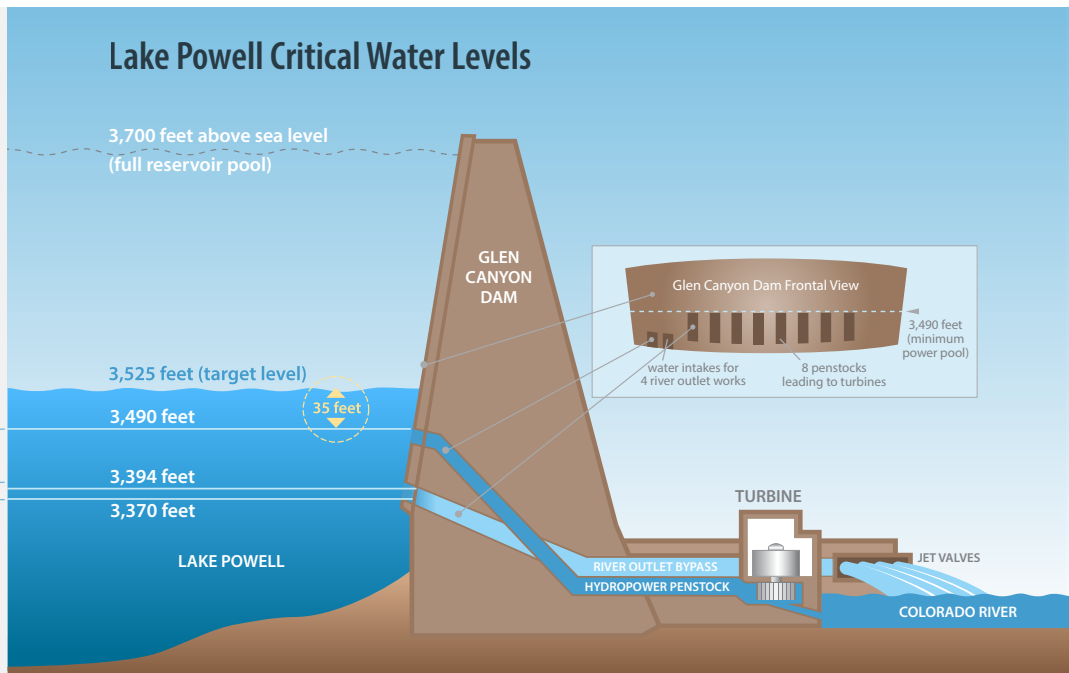
30% of the Colorado River could dry up by 2050
55% of the Colorado River could dry up by 2100

We need to address the dam's design flaws.

MINIMUM POWER POOL
 Below this level, the dam can no longer produce power

MINIMUM DISCHARGE ELEVATION
 Lowest elevation to safely pass water through the dam

DEAD POOL
 Below this level, water can no longer pass through the dam



Why it matters

Glen Canyon Dam serves as the gateway to the Grand Canyon. 92% of the water in the Colorado River passes through the dam to:

- Deliver water to Arizona, Nevada, California, and Mexico
- Produce hydroelectric power and revenue
- Keep promises to tribal nations
- Help maintain ecological, cultural, and recreational resources in the Grand Canyon and beyond

Glen Canyon Dam is not designed to operate at low lake levels. Once it reaches minimum power pool:

- **Water deliveries are limited**
Only lowest outlets available, constant low flows, risk of infrastructure damage
- **No power is generated**
Loss of power to the grid, power costs increase, no revenue
- **No high-flow experimental floods**
No way to create high flows that move sediment through the Grand Canyon, which is crucial for the protection of fish habitat, vegetation, camping beaches, and archaeological resources

THE GRAND CANYON PROTECTION ACT OF 1992.

This law governs how Glen Canyon Dam operates

The Act requires the dam be operated “to protect, mitigate adverse impacts to, and improve” the environmental, cultural, and recreational resources in Grand Canyon National Park and Glen Canyon National Recreation Area.

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The solution

The U.S. Bureau of Reclamation needs to study options for modifying Glen Canyon Dam to ensure the health of the Colorado River as it flows through the Grand Canyon and delivers water downstream. Such a process must be public and address the broader resources and interests protected under the Grand Canyon Protection Act of 1992.

Possible fixes

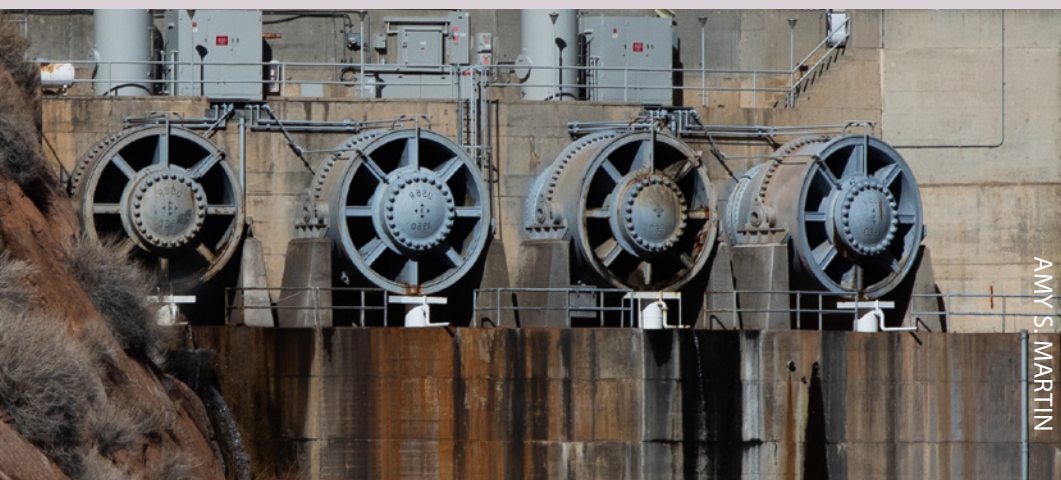
- Build new intakes through the dam at lower elevations
- Connect existing river outlet works to the power plant
- Build bypass tubes at riverbed level
- Find ways to pass sediment through or around the dam
- Construct bypass channel around the dam and connect it to new power plant
- Install barriers to keep nonnative fish in Lake Powell
- Adjust Colorado River Basin operations
- Invest in solar or wind generation

Plumbing problems at Glen Canyon Dam

The dam’s lowest outlet pipes are already damaged and cannot operate at full capacity.

Reduced water flows through these pipes jeopardizes:

- Water deliveries for communities and agriculture
- Hydropower generation and revenue
- Dam infrastructure
- River flows and experimental floods through the Grand Canyon
- Plants, wildlife, and cultural and archaeological resources in the Grand Canyon
- Colorado River recreation economy



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