

Glen Canyon was the place no one knew, and because we didn't know it was there, we didn't know we had lost it until it was too late.
Thesis: ~~Glen Canyon Dam should not have built.~~ *Glen Canyon was buried in 1963 when the loss of Glen Canyon, unique + unsurpassed new W.C. Dam was completed and in its beauty was unnecessary, and not Lake Powell began forming behind it.*
Introduction: ~~worth the material benefits gained.~~

A. Glen Canyon Dam, on the Colorado River just south of the Utah-Arizona state line, is one of the key storage units of the Colorado River Storage Project.

1). Authorized in 1956 by Colorado River Storage Act, completed 1963.

2). Third highest dam in world; reservoir, Lake Powell, will have storage capacity of 28,040,000 acre-feet, 1800-mile shoreline.

~~3). Water rising behind it forming Lake Powell - burying Glen Canyon, unique + unsurpassed in its beauty.~~

B. Primary purpose to provide hydroelectric power.

1). Sale of power intended to pay for storage project and help pay for participating projects which will provide water for municipal and industrial uses and for irrigation.

2). Proposed rate for 900,000 kilowatt plant--6 mills/ kilowatt-hr. for firm energy.

3). ~~Proposed repayment period--100 years.~~

C. Basic function simply to provide dollars from sale of generated power with which to help finance water development program of Southwest.

I. However, alternative and less costly sources of power available.

A. One possible alternative--thermal power plants--generate electric power from fossil fuels.

1). New developments in field of coal-fired steam turbine powerplants have made increased efficiency and lower costs possible.

a). Coal-fired powerplant to be built in southern Utah will draw from Lake Powell only one fifth of amount evaporated from surface each year. But will generate 5 million kilowatts--over five times as much as Glen Canyon with a fraction of the water consumed.

b). Selling price of steam-electric power declined in little more than decade from 7 mills to 4 mills or less, while selling price of hydroelectric power remained same.

B. Another alternative source of power is atomic energy.

1). Technology reaching point where nuclear costs in same league with fossil fuels or even lower.

a). Dr. Glenn Seaborg, chairman of Atomic Energy Commission, predicts withing 35 years all new private power plants will be operating on nuclear energy.

b). The President's Office of Science and Technology estimated that the delivered cost of atomic power would be as low as 3.2 mills in 1970 and as low as 2.1 mills by 1980.

c). Alvin M. Weinberg, Dir. of Oak Ridge National Laboratory, believes large, publicly-owned atomic plants will eventually generate electricity at 1.5 mills per kilowatt-hour.

C. Because of competition from fossil fuels and nuclear energy, Glen Canyon may be unable to pay back construction costs totaling about \$300,000,000 unless rate increased above 6 mill rate; however, market for even 6 mill power will not continue for length of repayment period.

II. Glen Canyon Dam is also not necessary for water conservation.

A. One of purposes of Colorado River Storage Project is irrigation.

1). Report of Bureau of Reclamation shows crops to be grown on land irrigated by projects will be largely grain and forage crops for dairy cows and sheep which will produce butter, ~~milk~~ milk products, wool⁹-already in surplus, under Gov. subsidy, in storage at fantastic cost.

2). Ironically, before Congress at same time was soil-bank proposal--would take 40 millions acres out of production to cut down on surpluses.

B. Storage of water behind dam will also impair quality for downstream users.

1). Salinity of lower Colo. has caused crisis in relations with Mexico.¹⁰

a). Accumulation of salts in water contaminating many thousands of acres in Mexicali Valley, causing loss of \$16 million in crops and putting many farmers out of business.¹²

b). Reservoir evaporation not only cause of river's salinity, but water already too saline only made more so by evaporation from surface of Lake Powell.

C. Colorado R. already has more dams than water to fill them, and when Colo. R. Storage Project completed, water rights in lower basin may be impaired.

1). Calif. has been quarreling with Ariz. over division of water since early 1920's.

2). Report to San Diego County Water Authority states when Upper Colo. Stor. Project completed and in operation, flow in river below Lee's Ferry may not take care of more than about half of full right of Metropolitan Water District.¹³

III. The dam ~~also has certain important defects which make it~~ will waste water ^{actually} in a ~~land that cannot afford to lose any~~.

A. First, the reservoir will lose water through evaporation.

1). For every acre of exposed surface in a reservoir, enough water is lost by evaporation to irrigate as much as two acres.¹⁴

2). Glen Canyon will lose enough water each year to cover half a million¹⁵ acres one foot deep, or enough to supply city of 25,000 for one year.

B. Second, the reservoir will also lose water through seepage into floor and walls.

1). Newspaper last Jan. 1965 quoted Dallas Cole, Chief Engineer of Colorado River Board of California, as saying, "About 25 percent of the water being held back of Glen Canyon Dam in Lake Powell seems to be percolating into the porous Navajo Sandstone Basin."¹⁶

2)X Thus, as reservoir fills, formations could absorb tremendous quantities of water, making it impossible to accomplish storage and regulation of water and production of power contemplated by the project.¹⁷

IV. Recreational values will be impaired

A. Fluctuating water level will create mud-caked, cracked shoreline as it rises and falls. *Already tapestried marks of the ages have been washed off cliffs, leaving uniform bleached effect.*

B. Side canyons will be clogged with debris washed down by storms and held in canyons by current of lake.

V. Another interesting case that of Rainbow Bridge, in Rainbow Bridge National Monument

- A. Rainbow promised protection from encroaching waters of Lake Powell in Colo. River Storage Project Act of 1956, only to be denied it when Congress refused to appropriate funds after Act passed.
- B. This act not only broke promise to conservationists but actually violated law which states no dam or reservoir shall be within any national park or monument.

VI. There are other reasons Glen Canyon Dam should never have been permitted to happen.

- A. By virtue of unique and unsurpassed beauty alone, Glen Canyon should have been preserved for future generations.
 - 1). What was 25 million years in the making human enterprise has destroyed in less than generation.
 - 2). Are and always will be other dams like this one, but a Glen Canyon happens only once.
- B. Loss of canyon, especially defeat of conservationists in battle to save Rainbow Bridge, is threat to sanctity of entire National Park System.
 - 1). Will serve as precedent and may make possible construction of other dams in Grand Canyon, Yosemite, Glacier National Park, and others. Many of these projects already beyond blueprint stage and need only a precedent to set the pattern.
 - 2). Loss of Glen Canyon will surely become one of tragedies of conservation effort in 20th century.
- C. Glen Canyon left untouched would have had greater, longer-lasting value for American public than material benefits obtained from it in present.
 - 1). Its value lies in its spiritual significance for the minds of men.
Quote--Sigurd F. Olson '8
 - 2). Future generations, crowded into cities, may turn out to be unable to live happily without access to wilderness areas.
Quote--Charles Eggert '9
 - 3). Therefore of supreme importance that there be wilderness left by time civilization in this country reaches point when pressures of increasing population truly felt.
 - 4). Must "remember these things lost" (Charles Eggert) and prevent this type of needless destruction from happening again.
- D. In end, comes down to matter of "value judgments."
 - 1). Question of Glen Canyon's value to wilderness lovers versus its value to power users.
 - 2). Can make measurements and surveys, facts and figures, but who is to interpret?
 - a). Are unable to measure for future generations how will be able to stand up under crowded city life.
 - b). Do not know what per cent of population will be unable to live without access to open spaces, for cannot assign figure to needs of one person for piece of wild area.

Conclusion: We have seen that Glen Canyon Dam is not essential for power or for water conservation and wouldn't in fact, waste water through evaporation and seepage. In view of the mounting evidence in the case against the dam, it seems to me we have paid an extremely high price for just one more dam. The fight to save Glen Canyon is over and lost. All we can do now is to turn our energies into the fight to save what little wilderness is left.

Footnotes:

- ¹ The Colorado River Storage Project and Participating Projects, Department of the Interior, Bureau of Reclamation (Washington, 1959). (Not paged).
- ² Colorado River Storage Project, Department of the Interior, Bureau of Reclamation (Washington, 1964). (Not paged).
- ³ U. S. Senate, Financial and Economic Analysis, Colorado River Storage Project and Participating Projects, Senate Document No. 101, 85th Cong., 2d Sess., 1958, p. 3.
- ⁴ Ibid, p. 18.
- ⁵ U. S. House of Representatives, Supplemental Report to accompany H. R. 3383, Authorizing the Secretary of the Interior to Construct, Operate, and Maintain the Colorado River Storage Project and Participating Projects, Minority Views, House Report No. 1087, Part 2, 84th Cong., 2d Sess., 1956, p. 16.
- ⁶ Hugh Nash, "Dams in Grand Canyon--a Necessary Evil?" Sierra Club Bulletin, L (December, 1965), 44.
- ⁷ Ibid, p. 45.
- ⁸ Ibid, p. 46.
- ⁹ Minority Views, H. R. No. 1087, Part 2, 84th Cong., 2d Sess., pp. 16-17.
- ¹⁰ Nash, p. 41.
- ¹¹ "Crop Pollution Laid to U. S. by Mexicans," The New York Times, February 13, 1962, 1962, p. 55.
- ¹² Nash, p. 41.
- ¹³ Minority Views, H. R. No. 1087, Part 2, 84th Cong., 2d Sess., p. 23.
- ¹⁴ W. O. Smith, Comprehensive Survey of Sedimentation in Lake Mead, 1948-1949, Geological Survey Professional Paper 295, Department of the Interior (Washington, 1960), p. 247.
- ¹⁵ "(Lack of) Progress Report on Rainbow Bridge," Sierra Club Bulletin, XLVIII (January, 1963), 8.
- ¹⁶ Nash, p. 40.
- ¹⁷ Minority Views, H. R. No. 1087, Part 2, 84th Cong., 2d Sess., p. 21.
- ¹⁸ U. S. Senate, Committee on Interior and Insular Affairs, Hearings Before the Subcommittee on Irrigation and Reclamation on S.500, 84th Cong., 1st Sess., 1955. p. 680.
- ¹⁹ Ibid, p. 696.