

Committee on Resources

Witness Testimony

Testimony for the Subcommittee on National Parks & Public Lands
and the Subcommittee on Water & Power
on the proposal to drain Lake Powell.
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The Facts about Lake Powell

Lake Powell and its surrounding area is one of the most beautiful places on earth. Lake Powell rests in the northern part of Arizona and the southern part of Utah. Approximately 90% of the lake is in Utah. Its surface lays at approximately 3700 feet above sea level, yet is well below the surrounding mountain formations. This difference in elevation is one of the major reasons for its extreme beauty. The sparkling blue waters contrast against the soaring red sandstone cliffs. Once on the lake, you feel as though you have been swallowed by the surrounding grandeur, the towering buttes in the distance, yet you can reach out and touch the canyon walls. You can nose up to one of the thousands of sandy beaches and explore the nearby mountains, plants and animals. There is truly nothing else like it anywhere on the planet.

Lake Powell was created following the construction of Glen Canyon Dam, a decade long project that began in 1956. Lake Powell is named for Major John Wesley Powell, a civil-war veteran and explorer. Lake Powell is now surrounded and protected by Glen Canyon National Recreational Area. GCNRA, operating under the National Park Service, was set aside by congress in 1972. GCNRA covers an area of 1,236,800 acres. This is equal to the size of the state of Delaware, more than 30 times the size of the District of Columbia. These canyons, buttes and desert sands allow one to discover a place that tells stories of nearly 650 million years of the earth's history. The primary mission of GCNRA is to: preserve the scenic, scientific and historical features of Lake Powell and the surrounding area.

Lake Powell is the result of a single dam with a concrete crest that extends nearly one-third of a mile across Glen Canyon itself.

The lake's blue water, more than 500 feet deep in places, is the product of a score of rivers draining from the upper regions of Colorado, Wyoming, Utah and New Mexico. It is roughly 186 miles long, has approximately 1,960 miles of shoreline, more distance than the entire West Coast shoreline of the United States and covers a surface area of 266 square miles, yet by comparison is only 13% of the total land area of the GCNRA. Ninety-six side canyons twist into the main channel of Lake Powell. Each one is unique with many names such as Forbidding, Wiregrass, Mountain Sheep, Antelope, Navajo, Cathedral and Labyrinth. Although the sheer size of this body of water, the Glen Canyon National Recreation Area and the close proximity to a series of seven national parks, seven national monuments and numerous state parks, historical sites, prehistoric Indian ruins, colorful ghost towns and geologic formations that reach from northern Arizona into southern Utah that draws visitors to its shores, it may well be the rugged landscape and the surprising stillness that keeps the people coming back.

It is at this point in the testimony that we must address the 4 or 5 misleading, twisted and factless areas the proponents of draining Lake Powell have issued to the media and that eventually reached the public without

the benefit of research or scientific inputs.

First, there have been claims made that the evaporation from Lake Powell is as much as 1 million acre feet a year. Official estimates put that figure at something around half of that amount, considering the average annual lakes' total capacity when netted down to include what would be lost to evaporation during the raging flows of a free flowing Colorado. It must first be understood that evaporation is not, let us repeat, not elimination. Evaporation is a natural part of the cycle of clouds and rains or snows. All water evaporates when exposed to temperature increases by either thermal (from below) or solar (from above), but as the waters change from a liquid state to a gaseous state, they nearly rise up in either the form of fog in times of little temperature change or rise further into the lower atmosphere where they are cooled and become clouds. As the prevailing wind patterns are from west to east and flow somewhat northerly or southerly, depending on the position of the Jet Stream, those waters that gently leave Lake Powell in the form of clouds eventually become so heavily laden with moisture that they produce rain and/or snow for fields and farms, most likely in the Colorado, Kansas and Nebraska areas. With the proponents of draining Lake Powell's proposal, our Colorado River water would be allowed to flow down into the Sea of Cortez, where it would evaporate no differently than it does in any other large body of water, only this time Mexico's crops would benefit from the rainfall, while our Heartland states would be shorted that water.

Second, there is talk among those that would drain Lake Powell about what they think is a bad condition called "Bank Storage". Yes, waters seep into the sandstone surrounding Lake Powell as its levels rise, but again, they are not lost as those same waters run back out of that sandstone as the lake levels decrease. Bank Storage, yes, but not Bank Elimination. Simply think of the sandstone banks as a sponge that holds some water, but can also easily let it run back out.

Third, these lake draining proponents talk about "restoring" the canyon walls after the lake has been drained by the use of volunteers. It must be said, however, that they are now changing their tune a little and suggest that the Army Corps of Engineers or Bureau of Reclamation Engineers could do it (at taxpayer expense). Not all the Kings Horses and all the Kings Men can restore the walls of Glen Canyon. Why, because the waters that have entered and left the sandstone, as in the "Bank Storage" example stated above, have taken out the iron oxide particles that made up the colors within the surface of the stone. Any of you that may have seen pictures of Lake Powell when its levels were lower than normal could see a bleached white ring above the waterline. This is commonly referred to as the "Bathtub Ring". This white area extends from the top of the lake to the bottom and completely around the lake. If the lake were to be drained, there would be nothing left but the biggest bleached white hole on Earth. Perhaps in a thousand centuries there will have been enough sun, rain and wind erosion to partially restore some of the canyons' walls.

Fourth, the pro lake draining groups have issued statements claiming the Powerplant and the lake have a very short lifespan remaining, some have said as little as 30 to 100 additional years. You must be informed that recently completed studies conducted by the Bureau of Reclamation of the United States Government have concluded that the life of the Powerplant is as much as an additional 500 years and the lake an additional 700 years. Those estimates even assume a "do nothing" posture during those periods. If there are no new sources of power and energy developed over the next 500 years, then the lifespan of the lake and Powerplant could be extended by dredging the bottom or other such actions.

Last, we want to completely dispel the notions that there are "plugs" that could simple be "pulled" to let the waters run around Glen Canyon Dam. This is simply not true. The original diversion tubes used during early dam construction were completely filled in with concrete from end to end as the dam was filling and a portion of the original outlet areas were redirected to become the spillway outlets. There are no "plugs to pull". Draining the lake and leaving the entire dam in place, as some have advocated, is simply not possible.

The night skies are crystal clear and star gazing is some of the best in the western United States. Lake Powell's shoreline is completely protected from development other than that authorized by the National Park Service and its concessionaires; you will not find hotels, restaurants or other businesses or buildings choking

the shorelines and destroying the views.

Glen Canyon Dam and Powerplant is the kingpin in the Colorado River Storage Project (CRSP). Glen Canyon Dam and Powerplant is the centerpiece of the CRSP, which directs the Secretary of the Interior to operate all the project powerplants up stream .. "so as to produce the greatest practicable amount of power and energy that can be sold at firm power and energy rates..." This magnificent structure is 710 feet in height, rises 638 feet above the Colorado River channel, is 300 feet thick at its base, tapering to 35 feet in thickness at its crest. Glen Canyon Dam is the storage reservoir (Water "Savings Account" as it were), which enables the four upper basin states to meet their water commitments to the three lower basin states on an annual basis. The Glen Canyon Dam and Lake Powell guarantees that the lower basin will have water in years of drought or plenty. Without it, in a drought period, it is highly possible that there could be water shortages in Arizona, California and Nevada.

With the construction of Glen Canyon Dam, the upper basin states were free to utilize other waters in their states for the purposes that best served their states. The Central Utah Project is an example. Other upper basin states have similar projects in process or on the drawing board. Because of increased growth in population and water usage, New Mexico completely utilizes its allotted water. Colorado and Utah are near to total use of their water allocations. Wyoming is the only state that has any water surplus, according to the Compact Agreement. Without Glen Canyon Dam, the upper basin states would not be able to use their own water allocations or would have to contrive to build additional dams somewhere in drainage that would meet storage commitments in the lower basin states, per the Compact. In the case of Mexico, it is important to remember, however, that the water that flows down the Colorado River obviously falls to the ground within the U.S. Any water commitment to Mexico is political and gratuitous. President Nixon gave Mexico water from the Colorado River, by treaty, during his administration. Mexico has no legal call on the water except on a good neighbor basis. It should be noted that it is the goal of the Colorado Compact state Water Management Agencies to not allow water to run downstream to the ocean without being put to beneficial use, unless there is a known surplus.

The Glen Canyon Powerplant can produce 1,288,000 kilowatts of electricity. In laymen terms, that is enough to supply the electrical needs of more than 400,000 households a year, even in times of reduced outflows. The sale of electrical power from this operation helps to pay for the construction, operation, maintenance of Glen Canyon Dam and other CRSP water and power development projects. Since 1964, over 4.5 billion kilowatts of electricity have been generated by the Glen Canyon Dam Powerplant. In fact, of the total power generation from the entire CRSP, 75% of the total is generated by Glen Canyon Powerplant. While the employment level at the Powerplant is not great, less than 100 people, the majority of the work force are Native Americans who travel to their jobs from the nearby reservation.

The Carl Hayden Visitor Center, located on the grounds of Glen Canyon Dam, offers an excellent historical perspective of the area, from the adventures of Major John Wesley Powell to the present. As many as 18,000 people per month visit the Visitors Center and partake of the self-guided tour deep inside the workings of the Dam and Powerplant.

The crisp, clear, clean and sparkling blue waters of Lake Powell, 27,000,000 acre feet at full pool, are used to help meet the water needs in both the Upper and Lower Colorado River basin states and Mexico. These water needs and rights are protected under the terms of the 1922 Compact of the Colorado River.

Lake Powell is host to approximately 3,000,000 visitors a year. Families come from all over the world to bask in the sun, play, recreate and yet enjoy the tranquil atmosphere of the area. Water sports abound, from row boating, kayaking, personal water crafting, power boating, water skiing, fishing, houseboating, tour boating to dining under the stars aboard a paddle wheel steamer. Over 400,000 boaters a year find Lake Powell to be their choice for water activities. Lake Powell's marinas are about 50 miles apart and most offer a full range of services necessary for boaters. Arizona has more registered boats per capita than any state in the union.

Lake Powell is also home to some of the best underwater diving of any inland lake because of its sheer underwater cliffs, deep caverns, crystal clear waters and lack of any turbulence.

Backpackers enjoy the tributary canyons, with the best trails on the Escalante River. One area you must walk is Coyote Natural Bridge, located on a tributary of the Escalante River. Visits to this area are increasing in numbers as experienced hikers find its location. Some of the canyons provide excellent geology lessons and are full of history and evidences of prehistoric Indians.

Lake Powell has made access to Rainbow Bridge National Monument such a peaceful boat ride, now more than 325,000 people a year can reach the spectacular monument and marvel at its' beauty and grandeur. Rainbow Bridge is a stone arch spanning 275 feet and rising more than 290 feet from the ground below. Before Lake Powell made access to this natural wonder less than a 2 day walk or 1 day ride on a pack animal, fewer than 15,000 people had ever seen its recorded history.

Thousands of people each year come to the Glen Canyon National Recreation Area to camp on its sandy beaches, bask in the sun, enjoy the relaxation and peacefulness of the area, and bond with family and friends. Campsites are everywhere and are available in many areas by car, so that those who do not have or want to boat have easy access to this spectacular area as well.

Photography is a very popular pastime around this beautiful lake. The contrast between the water and the colorful sandstone mountains that rise above provide endless opportunities for rare and priceless photo shots. I know each of you have seen dozens of pictures of Lake Powell in magazines, books, television programs and in motion pictures such as Maverick, Superman I, II & III, to name but a few.

To further illustrate that Lake Powell and the Glen Canyon Recreation Area are alive and well and recognized by prominent members of the press for its beauty, vastness and recreational opportunities, the following quotes are included in this testimony:

"For others who have secretly wished for a dynamic white water raft trip, but don't have the time or the nerve, Lake Powell offers a down-scaled smooth water raft excursion...Along the way are steep canyon walls and 200 million-year-old petrified sand dunes...Consider taking this Western, wonderful trip during the spring and fall season."

Millicent K. Brody, Gannett News Service

"Time was running out on our search for silence when Steve steered his twin outboard into Cathedral Canyon...Gradually, we wound our way deeper and deeper in the canyon until we could touch both walls. A thousand feet overhead in that narrow dark, the moon shines at midday...The ripples from the moving boat spent themselves against the canyon walls, and then the water is still...In our dark retreat, the wind is holding its breath-as are we."

Paul Harvey, National radio broadcast and column distributed by the Los Angeles Times Syndicate

"Lake Powell, on the border of Utah and Arizona has some splendid neighbors: the Glen Canyon and the Painted Desert to the south, Zion National Park and Bryce Canyon to the Northwest. But on a four-day houseboating trip last summer, our group of four Washingtonians decided the lake could hold its own against the majesty of the canyons or Bryce's red-rock spires...For us, it offered the chance to touch pink and red canyon walls, wander under precipices of striped sandstone and shale, and explore endlessly changing rock formations, all from the comfortable deck of a rented houseboat."

Sabra Chartrand, New York Times

Jodie Foster says "that by far her favorite location is Lake Powell" (during the filming of the

movie, Maverick). "We live for weekends. We rent boats, go water- skiing, hang out on these weird little islands."

"Lake Powell and its grandeur may be the ultimate expression of Western boating... This lake is so big, and surrounded by scenery so amazing that it's tough to comprehend it. Yet, for all its size, the lure of Powell lies not in the big picture, but in the details - fjords of sandstone, hidden beaches and bays and multi-colored cliffs of sedimentary strata."

Charles Plueddeman and Jim Youngs, Boating Magazine

"The houseboat was our mother ship while we towed three fishing boats behind it... Sure, we could've taken the small boats out on Lake Powell and pitched tents on stretches of deserted shoreline, but getting the gang together to rent a houseboat was the first-class way to go."

Bob Hirsch, North American Fisherman Magazine

"They come to fish and camp and climb America's Southwest in all its glory, to enjoy a sun soaked land with names like Butterfly Arch, Cathedral in the Desert, Padre Bay, Castle Rock, Gunsight Butte, Chuckwalla Springs, Tapestry Wall and Lost Eden."

Margaret and Eric Anderson, Relax Magazine

"What to see and do: Everything but only if you're into nature and hypnotizing beauty. There are more than a million acres of wilderness in what many consider the ultimate houseboat vacation spot in North America. Lake Powell has been called "A Grand Canyon with enough water", which translates to a water skier's paradise."

Robert Stephens, WaterSki Magazine

"Lake Powell, one of the West's most utilized tourist attractions, is a magnet for boaters, hikers, explorers, fisherfolk, archaeologists and those who just enjoy kicking back on a floating home-away-from-home as the sun chases yellow, orange, red, rosy- pink and purple paint-box colors across the lake's startling stone monuments."

Susan Bayer Ward, San Francisco Examiner

"There must be more pleasing adventures than a houseboat trip on Lake Powell, but I don't recall any."

Barry Burkhart, Arizona Republic

"Not only will massive Castle Rock be identified from that film (Greatest Story Ever Told). From the water today, many of the jutting sandstone pinnacles, mesas, bluffs and mountains (like Navajo at more than 10,000 feet) are a deja-vu. They have been on National Geographic covers, in famous photographers' coffee table books, in movies. Even in "Planet of the Apes."

Percy Rowe, Toronto Sunday Sun.

The waters of Lake Powell and the surrounding area have become home to some 275 species of birds, including the endangered Peregrine Falcon, which now breeds in more than 30 aeries (nesting areas) around the lake. The National Park Service has surveyed only about half of the Glen Canyon National Park Area. In that survey, they found as many as 75 occupied territories, meaning the territory contains a breeding pair plus their young. Based on the National Park Service data, it has been estimated that well over 100 breeding pairs exist in the area. A total estimated population of 700 to 800 birds associated with Lake Powell is conceivable.

In point of fact, this bird is about to be removed from the endangered species list because of the population growth provided them by being near the lake. The river from the base of Glen Canyon Dam to Lees Ferry attracts many colorful migrant birds and in winter, water fowl of all types flock to both the lake and the river. The bald eagle is listed as an endangered species. However, its population is recovering

internationally and the bird's status may be downgraded to "threatened". We are proud to say the bald eagle is here because he is a fish eater. The major population of these birds centers, initially, on a side stream in the Grand Canyon. where there is a large population of trout. Even the Sierra Club cites an over winter population of as many as 45 individuals in the Glen Canyon National Recreation Area. Annual January surveys by the National Park Service indicate 18 to 20 individuals in an average year. They would not be here without the lake. There is also a large population of trout in this area because of the cool, clear waters being released by Glen Canyon Dam.

What about the golden eagle? Surveys indicate there is a perennial nesting pair on Cathedral Rock in Lake Powell. Lake Powell is very important to both bald and golden eagles during their migration. As many as 11 birds at one time have been seen "stacked- up", riding air currents in the vicinity of the Great Bend in the San Juan arm of Lake Powell. Populations of water fowl such as grebes, gulls, terns and various shore birds have all increased as a result of the water of Lake Powell. The lake is important to migrating water fowl and shore birds. Below the dam, the clear water, being highly productive in terms of plankton and aquatic insects, has become heavily utilized by various duck species. Mallard ducks are now known to be nesting along the river. There is indication that there may also have been nesting attempts by Gadwall. These animals would not be here without Lake Powell and Glen Canyon Dam. Clear, productive water is key. People from all walks of life and from around the world come to marvel at the bird populations and the variety of species.

The bald eagle finds refuge around Lake Powell during its migration. Again, the clear, clean waters of the lake afford the predator birds the opportunity to seek out their prey and continue the chain of life. The soil and moisture allow for vegetation. There have been more than 750 species of plants identified around Glen Canyon and the lake. The vegetation may be hundreds of years old and depends on its present day habitat to maintain itself. To change the growing conditions by removing the water could totally destroy these delicate growths and decide on the life or death of the local plants and animals within in the area. Within the area there are Bobcats, Fox, Black Bears, Coyotes, Mountain Lions, Sheep, Jackrabbits, Ground Squirrels, Beavers, Wood Rats, Badgers, Kangaroo Rats and even Porcupines. Lizards, Snakes and Bats are also common in the area.

The lake is also accessible during winter months. In January, the coldest month, temperatures on the lake can reach into the high 50's, making for year-round activity. The water is so smooth, it is impossible to tell where the cliffs end and the lake waters begin. The fall can sometimes be the most prime season. The weather during the day barely reaches the high 70's and is cool enough for a campfire and cozy sleeping.

The water may be cool for a dip but is refreshing. Lake Powell's waters warm up around the first part of June and stay warm into October. Fishing in Lake Powell is available year around and dozens of different species abound. Lake Powell is home to various sport fishing tournaments traveling here from coast to coast. Record size fish continue to be taken from Lake Powell each year. The best trout fishing is in the 15 miles of river between the boat launch site at Lees Ferry and the base of Glen Canyon Dam. Some shore-fishing is possible the first mile and a half up from Lees Ferry. Otherwise, boats are necessary.

Lake Powell is the jumping off site for many Mountain Biking trails and virgin biking territories as well. Mountain Biking is becoming ever more popular around the lake and new businesses devoted to this recreational activity are springing up in the towns surrounding the area.

A little known fact is that Lake Powell waters are the life blood of one of the largest land based, steam driven, Electrical Generating Powerplants in the country. The Navajo Generating Station is located near Page, Arizona and the shores of Lake Powell and is a major part of the Salt River Project.

This generating station is owned by a consortium of power companies, individuals and includes 24% ownership by the United States government. Navajo Generating Station has 2,250 megawatts of capacity, nearly twice the size of the Glen Canyon Dam Powerplant and bigger than the entire Hoover Dam

generating system. It supplies the equivalent of electrical power to no less than 500,000 families of four per year. Navajo Generating Station provides a large employment opportunity for the Native American population from the surrounding reservations. In fact, the NGS employment practices operate on the Native American Preference basis, meaning they must hire qualified Native Americans.

In addition to the human, social, wildlife and environmental values of Lake Powell, Glen Canyon Dam, Glen Canyon Powerplant and the Glen Canyon National recreation Area, there are tremendous economics associated with the goods and services provided by the people, businesses and other enterprises surrounding the area. Sales of electricity from the CRSP dams were more than \$130 million in 1996, of which 75% (over \$97 million), came from the Glen Canyon Powerplant last year alone. At the conservative retail of \$.06/Kwh, the Navajo Generating Station results in revenues for its owners of roughly \$1 billion per year. The Navajo Generating Station and their co- owners, Salt River Project, provide up to \$8 million a year to the Coconino County, Arizona school tax base. Lake and Recreation Area tourism dollars approximate \$350 million per year and an additional estimated \$150 million is fed into other areas of the Southwestern United States by these same visitors and vacationers. All of these dollars are subject to State tax, County tax and City taxes, all of which help provide for education, infrastructure, roads, bridges and other tax supported development projects. Ongoing supplies of water supported by the storage capacity of Lake Powell used for agricultural purposes in the states of Arizona, California and Nevada produce crops valued at \$1.5 billion per year. These same agricultural activities provide jobs for tens of thousands of people in the Southwestern United States. The little promoted sport of trout fishing below Glen Canyon Dam brings approximately \$2 million into the local economies.

The communities of Page, Arizona, Big Water and Kanab, Utah and sites such as Bullfrog, Halls Crossing and Hite, Utah are all dependent on the water, recreation and tourism trades that are provided by the presence of Lake Powell and the surrounding area. These cities and towns comprise more than 300 businesses, of which well over 100 are totally dependent on the lake. The lake concessionaire employs over 800 people in peak periods.

Businesses in nearby towns are involved in boat storage, repair, maintenance, boat management, dry storage, transportation companies, dive shops and boat and engine retail outlets to name a few.

In addition, the lakes' presence enhances businesses such as insurance companies, banks, retail food and clothing outlets. Other providers such as hotels, restaurants and service stations rely almost entirely on tourism to support their investments. The people living and working in these areas along with businesses provide the financial support base for human services such as Page, Arizona's hospital, schools, libraries and other essential services, like emergency medical airlift and ground ambulance providers. Without the financial support provided by the commerce in this area, the nearest medical services would be more than 135 miles away. Cities such as Page, Arizona are experiencing growth rates of up to 6.8% per year.

It should be noted that nearly 23,000 Native Americans live on the Navajo reservation that borders the entire southeastern shore of Lake Powell from Lees Ferry to the Goosenecks on the San Juan River. The Navajo Nation forms the largest segment of population in the Glen Canyon region. These Native Americans can use the present essential services provided because of the financial commerce of the area. Public school enrollments are 63% Native American and they are provided transportation from afar to assure they receive the educational opportunities to which they are entitled.

The future of the city of Page, Arizona is further enhanced by a guarantee with the United States government that provides water supplies from Lake Powell, thus providing for future growth and development without fear of water shortages in a desert environment. The city is the owner of the local electrical distribution system which generates additional revenues payments from the Glen Canyon Powerplant.

While it goes without saying, it should be known to all that the people involved in daily family life,

commerce and the free enterprise system provided by this great country of ours will oppose until their deaths any person or persons that would attempt to disrupt their personal rights, freedoms and opportunities for continued existence in the Lake Powell and Glen Canyon National Recreational Area and surrounding communities. According to the intent of the articles of our Constitution, no one person or group has either the right or the power to impose their beliefs on others, in this, the great United States of America. We the millions of "Friends of Lake Powell" as citizens and voters intend to see that these rights are upheld regardless of time or cost.

Thank you.

Larry E. Tarp, Chairman
Friends of Lake Powell

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