Rainbow Bridge
Hassell, Hank

Published by Utah State University Press

Hassell, Hank.
Rainbow Bridge.

For additional information about this book
https://muse.jhu.edu/book/9329

For content related to this chapter
https://muse.jhu.edu/related_content?type=book&id=202313
The Sierra Club Goes to War

With the enactment of the Colorado River Storage Project Act in 1956 the long battle over the nature and parameters of water development in the Upper Basin came to an end, and the leaders of the newly empowered American preservationist movement prepared to strike their tents and head home. These men must have left Washington, D.C., filled with pride and satisfaction over what, against all odds, they had been able to accomplish. True, the Bureau of Reclamation had been able to persuade Congress to authorize a series of major dams and storage reservoirs, and all too many remarkable places would soon disappear forever under tons of silt-laden greyish waters, but the government had been stopped cold at the boundaries of the National Park system both at Dinosaur and Rainbow Bridge. The point had been made that these jewels of the American landscape were off limits to massive commercial development and out of bounds where the intrusion of man-made reservoirs was concerned. Dave Brower and his associates had made sure of that by insisting on the inclusion of strong, binding language which could not be misconstrued and which would now be most difficult to repeal. The American people had spoken with one voice, and everyone was sure that western congressmen and their reclamation allies had gotten the clear message—keep your damn dams and grubby reservoirs out of our parks.

However, the legislative provisions which protected Dinosaur and Rainbow Bridge were at opposite poles in their effect. At Dinosaur the government was prohibited from building a dam; at Rainbow Bridge, by implication, the bureau would need to construct one. The same act which prohibited any reservoir water from entering Rainbow Bridge National Monument also authorized the construction of Glen Canyon Dam, and the structure the bureau had already begun to build was designed to fill the canyon to an elevation of 3,700 feet. The lowest point in the national monument, a quarter-mile downstream from the bridge, was at elevation 3,606.1 feet, and the canyon bottom directly under the Great Rock-Arch was at 3,654 feet. If left to back up unimpeded, the reservoir, later to be named Lake Powell, would push stagnant water through the very heart of the monument and beyond, leaving Rainbow Bridge spanning a pool forty-six feet deep. It seemed obvious to everyone from conservationist to reclamationist alike that the only way to meet all the parameters of the act was to build a barrier dam in either Bridge Creek or Forbidding Canyon somewhere downstream from the monument. It was clear that the bureau had already given some thought to the matter, because in hearings before the House Interior Committee during the CRSP debate the government had stated,

We can build the necessary works to protect the bridge in the manner suitable to the National Park Service and others that are interested, within the amounts of money that we have estimated in our overall estimate for the Glen Canyon Dam and reservoir, and we have no question about the economic, engineering, or practical feasibility of taking care of that monument.

(The fact that bureau engineers had already figured the cost of protecting Rainbow Bridge into the cost of the Glen Canyon project is significant because later this same agency would claim that the required protective works were simply too expensive.)
With the necessity of building a barrier dam written into law, the Department of the Interior, now under the very able leadership of Frederick Seaton, was not slow to act. Almost simultaneous with the site preparation work in Glen Canyon, engineers were doing detailed mapping and sampling in the canyons below Rainbow Bridge in an effort to solve the engineering and technical problems associated with the new project. For Floyd Dominy, associate commissioner of reclamation and soon-to-be commissioner in his own right, this was the ultimate irony. The same people who had fought his agency’s dams for over a decade now actually wanted him to build them one. His sense of the contradictory was further heightened by the fact that, unlike most of his preservationist nemeses, he had actually been to the bridge. He had ridden a mule down the hot, dusty trail from Navajo Mountain in midsummer, an experience he later claimed had nearly killed the mule. Well, he mused, if the conservationists really wanted him to build them a dam, then he would build them the best one he could. He put bureau engineer Lloyd Calder in charge of the project, and by August, 1959, a preliminary report was ready for consideration.1

The bureau identified four sites in Bridge Creek and Forbidding Canyon which could serve as locations for a barrier dam. Obviously, a structure at any one of these locations would have to have the same crest elevation (3,715 feet) as Glen Canyon Dam in order to keep lake water from overtopping it, so the further upstream one could place the barrier dam the smaller, and cheaper, such a structure would be. Conversely, however, once the barrier dam and Lake Powell were both in place, water from upstream would begin to pool against the back of the barrier dam. This problem could be partially solved by pumping this unwanted pool over the dam into Lake Powell or by locating a second barrier dam upstream from Rainbow Bridge and disposing of the water currently in Bridge Creek by shunting it into another drainage. In either case, however, sufficient storage would need to be provided on the upstream side of the barrier to provide for floods and seepage. Otherwise water would back from the barrier dam into the monument, thereby creating the very problem the whole project was seeking to avoid.

Site A was located only 1,500 feet downstream from the monument boundary. It would require a dam 148 feet high with a crest length of 375 feet, but its upstream storage capacity of 33 acre-feet was deemed much too small to keep floodwater and seepage out of the monument. A second major problem with site A was that floods coming down Bridge Creek would deposit rocks and debris sufficient to fill this tiny upstream storage capacity in less than forty years, after which all water coming down Bridge Creek would pool inside the monument. Clearly, then, if site A were selected a second barrier dam on Bridge Creek above Rainbow Bridge National Monument would be needed to keep almost all water from the vicinity of the bridge.

Site B was located 3,200 feet below the monument boundary just above a major side canyon of Bridge Creek. This dam would have to be 183 feet high with a crest length of 500 feet. It would provide an upstream storage capacity of 313 acre-feet which, in comparison to site A, dramatically reduce the pumping necessary to keep the backside pool out of the monument. However, without a second barrier dam upstream from the bridge debris would fill even this much larger basin in only forty-one years.2 Hence, selection of this site, as at site A, would require a second barrier dam and would result in the total dewatering of Bridge Creek within the monument.

The Narrows site was located just above the junction of Bridge and Aztec Creeks. It would require a dam 250 feet high but only 50 feet wide, which made it economically very attractive. However, the canyon walls here overhung the stream on both sides, which presented construction problems, and there were also structural flaws in the adjacent sandstone which the engineers found problematic. Hence, the Narrows site was never considered seriously as a workable alternative.

Site C was located on Aztec Creek a mile and a half above the Colorado River. A dam here would have been a large one—365 feet high with a crest length of 800 feet. In fact, an earthen dam at this site would have required 5 million cubic yards of material, very nearly the volume of Glen Canyon Dam itself. However, the bureau was careful to note that this site was suitable for a concrete arch dam if sufficient aggregate to mix with the concrete could be found nearby.3 Of the three sites actually considered technically suitable, this was the only one which would not require an upstream diversion dam. The basin between the monument boundary and site C held twelve thousand acre-feet of storage capacity, which the bureau estimated would last 213 years. The bureau also believed that by using minimal pumping
Figure 50: Map of Rainbow Bridge country showing the approximate location of the four sites proposed by the Bureau of Reclamation as suitable for construction of the barrier dam necessary to protect the bridge from the waters of Lake Powell.
together with normal evaporation, a stable reservoir with surface elevation at 3,570 feet could be maintained upstream of the dam in Aztec Creek. This would mean that when Lake Powell was full the site C dam would have a reservoir 350 feet deep on the downstream side and one 220 feet deep on the upstream side.

The bureau never liked site C for three reasons. First, the engineers weren’t sure about the physics and hydraulics of a dam with a large pool on both sides. They felt that models would have to be built and tested, a necessity requiring both time and money. Second, the outlet tubes on Glen Canyon Dam, the only devices which could be used to regulate the height of Lake Powell, were set in the design at an elevation of 3,490 feet, a full 140 feet above the site C stream bed. Hence, once the gates on the diversion tunnels at Glen Canyon were closed the reservoir would inundate site C, and since this was scheduled to happen well before construction here could be completed, selection of this location would mean pushing back the filling schedule for Lake Powell. This was something the bureau was not even willing to consider. Third, the bureau believed that the material for so large a structure was not available on location, necessitating long and expensive hauling from remote sites.

Of course, dam building involves labor-intensive heavy construction, and in this magnificently dissected and tortuous country, getting men and material to any of the three sites would be a major project all by itself. Access to sites A and B might be had by following the old Richardson road north from Tonalea, Arizona, into Utah and then swinging...
around the east end of Navajo Mountain using the approximate route of the old Wetherill Trail into the drainage of Bridge and Aztec Creeks. This would be a long and expensive route necessitating blasting through solid rock, the bridging of several deep canyons, and the installation of numerous culverts to handle runoff through the many small ravines draining the high country. However, from an engineering standpoint it would be straightforward roadwork with few unusual problems.

Access to site C was possible via either of two possible routes. One was simply an extension of the Hole-in-the-Rock road, which ran southeast from Escalante, Utah, to the old Mormon crossing of the Colorado River. From Fifty-Mile Point the new route would turn south around the Kaiparowits Plateau and then descend into Glen Canyon opposite the mouth of Aztec Creek. Here it would be necessary to bridge the Colorado and then continue up Forbidding Canyon to the dam site. A second route in would angle north from the newly constructed highway, U.S. 89, between Kanab and Glen Canyon. The route would traverse the narrow flats under Smokey Mountain and Sit-Down Bench, again reaching Glen Canyon near Aztec Creek. While presenting no significant design or construction problems, these routes would be expensive. In fact, it was estimated at the time that the cost of road construction might well equal the cost of the barrier dam itself.

After considering all the advantages and problems associated with each site, the bureau came down in favor of site B, augmented with a second dam located on Bridge Creek a half-mile above the monument boundary. The purpose of this additional dam would be to divert all the water flowing down Bridge Creek west into the drainage of Aztec Creek, accomplishing this by means of a tunnel nearly a mile long and twenty-one feet in diameter. The tunnel would slope downhill between the canyons, so no pumping would be required. The diversion dam would be 40 feet high with a crest 275 feet long requiring 47,000 cubic yards of earth and rock, all of which could be obtained locally. The material for the dam at site B would come from the top of a high mesa adjacent to Rainbow Bridge. Excavation equipment could, according to the bureau, be lifted onto the mesa via large transport helicopters, and the fill material carried off the north end of the plateau via a conveyor system. Government engineers had clearly done their homework; the plan was neat, practical, and clearly within the parameters set forth in the Colorado River Storage Project Act to “prevent impairment of Rainbow Bridge National Monument.” Under this plan, the monument would be touched by neither the reservoir nor any construction.

Just to be on the safe side and to deflect any criticism that the government was simply pushing its own preferred solution, the bureau hired a consultant, eminent geologist Wallace R. Hansen, to look over the preferred site and to issue an opinion. Dr. Hansen was in the monument area from September 23 to 25, 1959, in the company of J. Niel Murdock, regional geologist with the Bureau of Reclamation, and James Eden of the National Park Service. The group visited the site of the barrier dam in Bridge Creek, the site of the diversion dam upstream from the monument, and the outlet portal site in Aztec Creek, ignoring completely the site C location about four miles away. In his report to the bureau Dr. Hansen stated, “Site B was examined rather closely, and its adequacy, insofar as geologic factors are concerned, appears to be beyond question.” He was less certain concerning the bureau’s figures on seepage, which would inevitably occur both through the dam and around it, recommending that plans be made for a higher level of pumping than was being considered. On the necessity of building the upstream diversion works, Dr. Hansen was adamant:

Unless diverted out of Bridge Canyon via the proposed diversion dam and tunnel to Aztec Creek, sediment consisting of boulders, cobbles, gravel, sand, silt and driftwood, therefore, would accumulate ultimately throughout the length of Bridge Creek in the monument up to the high-water level of the reservoir at an altitude of 3,700 feet and in fact to greater heights as the deposits would gradually aggrade headward. Aside from the detrimental effect such sediments would have on the natural appeal of the monument, they would in time reduce the effective height of Rainbow Bridge by approximately 50 feet.

The solution proposed by the bureau had no loose ends—it would accomplish what the law required and seemed to present no insolvable technical difficulties. From an environmental viewpoint, however, the plan was far from benign. The national monument would remain unscarred, but it consisted simply of a square, a half-mile on a side, with Rainbow Bridge at its center. Surveyed by William B.
Figure 52: Map of the vicinity of Glen Canyon showing the three proposed routes into the possible dam sites.
Figure 53: Diagram of Bridge and Aztec Creeks showing the approximate location of the site B barrier dam, the diversion dam, and the tunnel linking Bridge Creek with Forbidding Canyon.
Douglas in 1909–1910 to shield the immediate vicinity of the bridge from appropriation under the Mining Law of 1872, its boundaries bore no relationship to the surrounding topography whatsoever, and under the bureau’s plan the essentially pristine character of this magnificent land would be indelibly altered. Aside from the intrusion of two dams and a tunnel, the project would necessitate a large construction camp to house men and machinery, a heliport for the transport choppers, high-standard roads, and at least one electric line to bring power to the pumps at the barrier dam. All of this would leave its mark for generations after the work was finished, essentially framing Rainbow Bridge as an island of wilderness within a sea of development.

Of course, all parties planning for whatever structures might be built knew that nothing would be accomplished without the acquiescence and cooperation of the Navajo Tribe. Aside from the 160 acres within the boundaries of the national monument, all this land was Indian country, part of the Navajo Reservation since 1933, so all dams, power lines, roads, and tunnels would need approval of the Navajo Tribal Council before construction could actually begin. Hence, in 1958 the Department of the Interior formally applied to the tribe for easements and rights of way to accomplish the protection of Rainbow Bridge. At the same time the Park Service requested a land exchange with the tribe for the purpose of adding approximately one hundred acres to the monument. The proposed addition would have extended the monument to the east another half-mile so as to include the spring and alcove at Echo Camp, which the Park Service was eyeing as an official campground. The Tribal Council responded via a resolution which said, in part,

The Department of the Interior is hereby granted rights-of-way and easements for construction and maintenance of barrier dams and diversion tunnels to protect Rainbow Bridge from inundation . . . The addition of 100 acres to the Rainbow Bridge National Monument, as requested by the Park Service, is not in the best interests of the Navajo Tribe at this time.

(The Park Service was to continue trying to accomplish this boundary adjustment for the next dozen years. Each attempt was rebuffed by a succession of tribal administrations.)

The conservation community, which had worked so hard to see to it that development of the CRSP did not impinge on the National Park system, were skeptical of the bureau’s plan. For them the clear choice was site C, which, from an environmental viewpoint, had some obvious advantages. First, it was miles away from Rainbow Bridge, so all activities relative to construction would not be nearby. Second, access to the site could be had from the north and west via Kanab or Escalante, Utah, leaving the Navajo Mountain region and the old trail system roadless and intact. Third, site C required no Bridge Creek diversion dam or tunnel—Bridge Creek would continue to flow through the monument, thereby preserving the creative force which made the bridge and which would thereby continue to shape its future.

For the Bureau of Reclamation, a dam at site C was never under serious consideration, and the reason was very simple—time. Government engineers felt that by the time they were ready to actually begin construction at site C the reservoir behind Glen Canyon Dam would have already flooded the locale. The bureau, which was anxious to begin producing power (and revenue) from Glen Canyon’s turbines, was not about to revise the fill schedule for Lake Powell for anything short of a presidential directive. In public the bureau’s arguments against site C focused on peculiar difficulties inherent in the location, the large size of the site C dam compared with the preferred structure at site B, and the attendant greater cost. However, beneath the public façade was the real issue—Lake Powell would almost certainly not reach site B until early 1970, if then, so the reservoir could fill as construction at the site B location proceeded. The site C dam would have to be in place before the gates at Glen Canyon Dam were closed.

This would be a fight in which Congress was not likely to intervene. Congressmen generally had no engineering expertise, so they usually accepted what they were told by the Department of the Interior and the Bureau of Reclamation in budget requests for particular projects and in oral testimony delivered at hearings. The call on this one, then, would probably be made by the secretary of the interior, who had both the Bureau of Reclamation and the National Park Service within his jurisdiction. It was known within conservation circles that the Park Service was privately lobbying Secretary Seaton to recommend site C, and so it was felt that a little positive publicity in that direction might tip the balance.
Accordingly, Arthur B. Johnson, a registered professional engineer and a fellow of the American Society of Civil Engineers, was prevailed upon to analyze, and hopefully counter, the bureau’s arguments against site C. The analysis he produced was rigorous, detailed, and countered every one of the bureau’s arguments against the site. Johnson found that by changing the dam’s location just slightly the crest length could be reduced from 800 feet to 420 feet, thereby reducing the volume of the dam by nearly half. He concluded, therefore, that an earthen dam at this location could be constructed easily and economically, and, interestingly enough, within the time frame the bureau had established for the filling of Lake Powell. A sizable alluvial deposit located just downstream from the site could be expected to provide two to four hundred thousand cubic yards of material for the dam’s impervious core, and several quarries located below the 3,700-feet elevation line could provide the necessary rock fill. The bureau had argued that the materials available on site did not contain sufficient clay and were too fine to make a good core for the dam, but Johnson countered that argument by stating,

The . . . alluvial deposits repose at quite steep angles. For the deposits to have resisted the cloudbursts the area is subject to and retained those slopes indicate the existence of substantial binder material. Numerous animal trails also attest to its strength . . . Mother Nature’s answer is that the deposits are of adequate quality.\(^1\)

For access Johnson proposed upgrading Hole-in-the-Rock road from Escalante, Utah, thereby limiting new construction to the final twenty miles necessary to reach site C. He estimated that upgrading fifty-seven miles of existing road to haul standards, constructing twenty miles of new road, and bridging the Colorado at river level could be done for about $2 million, far less than what it would cost to get a road into site B. Johnson also proposed using diesel pumps to keep the upstream pool in Aztec Creek as low as possible, this in contrast to the bureau’s proposal to maintain a fairly substantial lake on the upstream side. By his estimate, the installation of four 3,000-gallons-per-minute pumps could send a year’s expected flow from behind the dam into Lake Powell in two to three months. Periodic dredging of the rocks and silt left by flash floods could keep the upstream storage area virtually free of debris and would extend the effective life of the barrier dam by centuries. He even went so far as to suggest a topographically logical route along the canyon rims for the construction of a new trail to Rainbow Bridge. Best of all, Johnson’s estimate of the maximum cost of the project, including access roads, fuel, and all construction expenses, came out to just over $17 million. Since the bureau’s estimate for construction at site B was $20–$25 million, the argument that site C was simply too expensive was effectively demolished.

The proposal Arthur Johnson submitted had enough detail that it could have been used to prepare the final construction plans, but the Bureau of Reclamation remained unimpressed. For one thing, Johnson was arguing that building and testing of models was a waste of time, that needed analysis could be done in the lab. Bureau engineers felt, perhaps rightly, that in a project this unusual, with water pooling on both sides of the dam, a speculative analysis would simply not do. Then there was the matter of time. Even Johnson admitted that completion of the site C project within the bureau’s time frame for filling Lake Powell was tight. Since major construction projects rarely went according to plan, the bureau was virtually certain that Johnson’s schedule would not be met. Hence, Floyd Dominy, who had become commissioner of Reclamation in May, 1959, continued to insist that site B was the only one under consideration. Since Secretary Seaton was maintaining a discrete silence on the issue it was assumed that he was taking Reclamation’s advice.

Strangely enough, it seems that while site C was far and away the preferred option for the leaders of the major conservation organization, there was no outright rejection of Reclamation’s site B proposal and, aside from Arthur Johnson’s very thorough analysis, no large-scale lobbying effort in Congress or at the Bureau of Reclamation to try to defeat that site. The attitude appeared to be that while site C was better in almost every respect, site B was within acceptable parameters and would, therefore, not be actively opposed. Conservation leaders seemed to be of the opinion that preservation of the principle as set forth in the Colorado River Storage Project Act was more important than the details concerning how that principle would be maintained. If protecting Rainbow Bridge National Monument from intrusion
by Lake Powell meant the sacrifice of the surrounding wilderness, then so be it.

Not all individuals were quite so intent on preserving that principle, however, and one of them was Dr. Angus M. Woodbury, professor emeritus of biology at the University of Utah and a member of the Glen Canyon Salvage Project. In an article published in the journal Science, Dr. Woodbury argued that doing nothing was actually preferable to scarring the surrounding landscape by massive construction at site B. He noted that the geologists at the Bureau of Reclamation had already stated that water from the reservoir posed no threat to the structural integrity of the bridge. Therefore, the only permanent damage to occur as a consequence of filling the inner gorge of the monument would be the eventual filling-in of the area under the bridge by rock and sand. Dr. Woodbury noted that while this process of sedimentation was ongoing there would be significant visual degradation of the monument, but, "... these would be covered as the inner gorge filled. When that happy time arrived there would be nothing about the appearance of the little brook meandering through the streamside vegetation to remind the visitor of the former presence of the reservoir in the monument." He then contrasts this idyllic vision with the consequences of construction at site B: "... to build the protective works would entail permanently marring the remarkable landscape, not only with dams and tunnels but also with the construction and equipment accessory to the main work . . .".

Dr. Woodbury's article prompted a number of rejoinders, the most prominent by geologist William R. Halliday of the Western Speleological Survey in Seattle, Washington. Dr. Halliday rejects Woodbury's basic tenet that the reservoir would have no long-term effect on the monument by writing, "... there is considerable evidence that flooding and aggravation of sediments, sand, and silt in or near Rainbow Bridge National Monument would be highly detrimental to that monument and the adjoining area and that the proximity of the reservoir would seriously threaten the stability of Rainbow Bridge itself."

The battle over the best way to protect Rainbow Bridge and its environs had clearly been joined, and men with impeccable academic credentials were lining up on both sides of the issue and drawing vastly different conclusions. It seemed at the time, however, that the debate was merely academic. The law on the subject was quite clear, stating that the waters of Lake Powell would not intrude into the monument and assigning responsibility for its protection to the secretary of the interior.

However, not everyone involved in the debate had the same measure of respect for the legal language. The ink was barely dry on the agreed provisions in the CRSP guaranteeing the inviolability of Rainbow Bridge National Monument before the very legislative leaders and Reclamation officials who had solemnly given their word to Howard Zahniser and David Brower now began trying to subvert the agreement. On a swing west in 1959, members of the House Interior and Insular Affairs Committee were interviewed in Flagstaff, Arizona, about the Glen Canyon project and its effects on Rainbow Bridge. Committee chairman Wayne Aspinal of Colorado explained, "One reason for the committee's current tour was to determine whether or not the saving of Rainbow Bridge was in the best interest of the nation as a whole." Floyd Dominy boldly stated that in his opinion diversion dams near the bridge "would not enhance the view" and that any steps to prevent waters from Glen Canyon Dam from reaching Rainbow Bridge would probably be better left untaken. Said Dominy, who was accompanying the committee in its visits to various western water projects, "In my opinion water up under the Bridge would make it a more beautiful sight." Hence, while supposedly studying in great detail the best way to protect the monument from impairment under the law, the commissioner of reclamation was openly telling everyone who would listen that he considered the whole process a waste of time.

However, the Eisenhower administration and its interior secretary, Fred Seaton, understood their obligations, and, therefore, in the budget submitted to Congress in 1960, requested $3.5 million of the projected $25 million final price tag for the structures necessary to protect Rainbow Bridge. However, on March 11, 1960, just as President Eisenhower's last budget reached Capitol Hill, Senator Frank E. Moss introduced a bill (S.3180) to strip the provisions protecting Rainbow Bridge from the Colorado River Storage Project Act. In remarks made to the Senate accompanying his bill, Utah's junior senator stated,

I contend that the $25 million requested for this purpose by the President in the 1961 fiscal budget
It apparently did not occur to Senator Moss, Congressman Aspinal, or Commissioner Dominy that saving Rainbow Bridge was a key element in an honorable bargain struck between conservationists and legislators barely four years previous, a bargain by which the fledgling environmental community had allowed the CRSP to pass unmolested into law. But, no matter—Senator Moss's bill was going nowhere.*

However, for construction on the protective works to actually begin, Congress needed to appropriate the money. The Constitution requires that all appropriations bills originate in the House of Representatives, so the House Appropriations Committee was to consider the measure first. Heavy behind-the-scenes lobbying by Senator Moss, Wayne Aspinal, and Floyd Dominy (perhaps the only time in history that a federal agency actually lobbied against a budget item recommended for that agency by the president) preceded the vote. In May, 1960, the committee deleted that line from the budget, stating flatly that it saw "no purpose in undertaking an additional $20 million in order to complete the complicated structures."9

The members of the Appropriations Committee must have known what a furor their action would arouse within the conservation community, and one might be permitted to wonder why they didn't simply accede to the president's request, appropriate the money, and build the structures. After all, compared with the cost of Glen Canyon Dam (over $300 million), the money requested to protect Rainbow Bridge was mere congressional pocket change. The attitude of the Bureau of Reclamation was also puzzling. An agency which seemed willing to drop a dam and reservoir into virtually any canyon in the West was now loudly proclaiming that it did not want to build one in Bridge Creek. With the benefit of hindsight it now seems clear that the motive of both Congress and the bureau was simple one-upmanship. Western states congressmen had been stung and stung badly by Dave Brower's success in stopping Echo Park Dam. The bureau, too, felt that it had been publicly humiliated on its own turf, and now both bodies saw a way to strike back. It was one thing to prevent Interior from building a dam—it was quite another to force Congress to approve one. If the conservationists wanted to preserve Rainbow Bridge National Monument, they would have to do it without congressional cooperation.

There were two possible ways that the secretary of the interior could have done an end run around such legislative intransigence. One would have been to use discretionary funds within the department to funnel money into Rainbow Bridge or to temporarily "borrow" funds from other projects to be made up in supplemental appropriations later on. Another tactic might have been to use monies appropriated for Glen Canyon Dam on the pretext that the CRSP made protecting Rainbow Bridge part of the Glen Canyon project. The Appropriations Committee made such a face-saving move impossible, however, by inserting special language into the appropriations bill for Interior. It said, "... no part of the fund herein appropriated shall be available for construction or operation of facilities to prevent waters of Lake Powell from entering any national monument."20 All avenues of escape had been cut off. Congress had declared that it was reneging on the pledge it had made in the CRSP and was now virtually challenging the environmentalists to do something about it.

Not all western congressmen felt that the direction the Appropriations Committee had taken was an honorable way to proceed. One such was a young representative from Arizona's Second District, Stewart L. Udall. Born in 1920 to a farming and ranching family in St. Johns, Arizona, Stewart had earned a law degree (with distinction) from the University of Arizona in 1949 and after practicing law for a time made a successful run for Congress in 1954. Now serving his third term, he had supported the Colorado River Storage Project Act back in 1955 and was an enthusiastic proponent of water resource development in his home state. However, this approach of passing a law and then ignoring it purely out of spite seemed to him not only disingenuous but also dishonest. Before saying anything, however,

---

* Senator Moss was nothing, however, if not persistent. He introduced almost identical bills in 1963 and 1973, none of which even got so much as a hearing.
he decided to go and see what all the fuss was about. Accordingly, in early August 1960, he, his sons Tommy and Scott, and Representative John Saylor of Pennsylvania climbed aboard a raft at Hite, Utah, and began a float trip through Glen Canyon.

On the morning of August 9 the party hiked up Bridge Creek to Rainbow Bridge and what Udall experienced there confirmed his worst fears. Both he and Saylor believed the bureau’s site B dam would be a disaster. He surmised that while the proposed dam would protect the box-shaped monument from being flooded it would despoil the surrounding country and thus degrade the bridge’s setting. Representative Saylor agreed with Udall’s analysis but suggested that an upstream dam would still be necessary to keep flood debris from settling beneath the bridge, the inevitable result of allowing the reservoir in. There was still the matter of the law, however, which simply demanded that Lake Powell be kept out. There clearly were no easy answers, and the congressmen debated, ruminated, and meditated on the problem for the remainder of the trip. By the time they had returned to civilization, Udall thought he had discovered a way to preserve the setting at Rainbow Bridge while at the same time soothing his troubled conscience.

In a letter to Congressman Aspinal dated August 27, he made two basic proposals. First, he challenged the Congress to settle once and for all the issue of the protective structures for Rainbow Bridge, not by the deceitful practice of refusing an appropriation but by passing a resolution spelling out exactly
why the barrier dams should not be constructed. Only in this way could Congress retain some shred of integrity on the issue. His second proposal was much more far-reaching and visionary. He wrote,

I favor a broad extension of boundaries so that Rainbow Bridge National Monument will include its natural backdrop—the sandstone canyon area between the high water mark of Lake Powell and Navajo Mountain. Such action would safeguard this remarkable natural wonder and ensure its preservation for all time as a primitive park area."

Congressman Udall must have known that his proposal faced tough sledding on two fronts. First, there was no way that either the Appropriations or Interior Committees was going to let a Rainbow Bridge appropriation bill or resolution reach the House floor. This was not a battle that reclamation-minded representatives ever wanted to revisit. Second, the land Udall was proposing for his new park was all Navajo Reservation. The tribe had consistently resisted trading for even the miniscule hundred or so acres in the Park Service expansion proposal, so there was little chance anyone was going to persuade them to trade the thousands of acres envisioned in this new scheme. It was an idea that Udall's brain simply would not let die, however, and it would reappear the next year under a far different set of circumstances.

The election that fall proved to be pivotal in the young congressman's career. It swept into office, by the barest of margins, a new Democratic administration headed by the junior senator from Massachusetts, John F. Kennedy, who now had the responsibility of choosing a cabinet from among the party leadership and his own supporters. Stewart Udall had been out front early in supporting Kennedy and had been instrumental in delivering all seventeen of Arizona's convention delegates to the young senator. Still, it came as a major surprise when Kennedy picked him to head the Department of the Interior. Wayne Aspinal of Colorado, the venerable chair of the House Interior Committee, figured that he should have been the logical choice for that position, and he wondered aloud whether his young protégé had the necessary administrative experience to run this large and contentious department. However, he was gracious in being passed over and offered the new appointee hearty congratulations and a promise of cooperation. Even conservationists, David Brower in particular, considered it a good choice.

Being titular head of the National Park Service and the Bureau of Reclamation simultaneously was certainly prestigious, but it put the new secretary squarely in the line of fire over the whole Glen Canyon-Rainbow Bridge controversy. The National Parks and Conservation Association greeted him in his first month in office by editorializing, "The protection of Rainbow Bridge National Monument is now squarely up to the Secretary of the Interior . . . The power to act . . . to save both Rainbow Bridge and the established national policy of protection is in the Secretary's hands. We urge him to exercise the power forthrightly and courageously."

Secretary Udall was determined to do both. In March the Interior Department submitted its budget for fiscal 1961-1962 (actually prepared by the outgoing Eisenhower administration) to Congress containing the same request for funds to protect Rainbow Bridge which the previous Congress had refused, but he didn't just sit around and wait for this budget item to suffer the same fate as its predecessor. He sincerely believed that the idea he and Representative Saylor had hatched during that river trip the previous year represented a better approach to preserving Rainbow Bridge, and he was determined to use the full power of his new office to move the proposal along. He thought the best way to launch his idea was to stage a full-blown media spectacle at the bridge itself, an event involving congressmen, government officials, tribal elders, conservationists, and journalists. Accordingly, in the spring of 1961 he assembled a group of about sixty at Page, Arizona, and prepared to transport them all by air up the Colorado River to Rainbow Bridge.

The first part of the trip would carry his party to the spectacular summit of Cummings Mesa via large helicopters borrowed from the U.S. Air Force. Here attendees could drink in the magnificence of the secretary's proposed park while awaiting a fleet of smaller choppers to carry them into Bridge Canyon and to deposit them within sight of the Great Rock-Arch itself. Udall managed the whole affair with consummate logistic skill, and by noon on April 29 everyone who was anyone was assembled at the bridge. Even the weather was cooperating. John O'Reilly, one of the reporters invited along, set the scene:

Here, indeed, was a uniquely beautiful and compelling place. The red canyon walls towered above, sometimes as straight as though hewn with a cleaver,
Figure 56: Map showing the approximate boundaries of the proposed Navajo Rainbow National Park. The full proposal encompassed all of the areas marked 1, 2, and 3. The first fallback position eliminated area 1; the final proposal left only area 3.

sometimes curved band twisted. A small stream slid over smooth rocks into clear pools. Bright desert flowers bloomed along the stream, and lizards scurried about, lifting their heads to show palpitating throats as they scanned the strangers. 

By this time the secretary's somewhat vague and amorphous park proposal first broached the previous August had evolved into something very detailed and specific. The preserve he envisioned spanned 775 square miles south and east of Glen Canyon, from Navajo Canyon on the south to Piute Creek on the east. It would indeed have been a spectacular park, encompassing Navajo Mountain and the whole of the Rainbow Plateau. Sensing that the Navajo Tribe might be resistant to giving up such a large chunk of their reservation, Udall proposed two fallback positions. The first pulled the eastern boundary back so as to exclude Navajo Mountain, thereby reducing the proposal to 425 square miles; the second pulled the southern boundary north to West Canyon Creek, resulting in a park of only 219 square miles. To compensate the tribe, Udall was prepared to offer comparable acreage, most with oil and gas potential, in western New Mexico.

Navajo Rainbow National Park, as Udall chose to name his proposal, would have supplanted and absorbed Rainbow Bridge National Monument. It solved the flooding problem rather neatly, if disingenuously, by establishing as its northern and western boundary the high-water line of Lake Powell, thereby guaranteeing that the reservoir would not intrude into the park even if it flooded the base of the bridge. Conservationists and reporters were escorted down-canyon to the site B location, where Floyd Dominy explained the protective works necessary to keep Lake Powell away from the bridge and where once again he reiterated that as far as the Bureau of Reclamation was concerned site C was a dead issue. Formal activities ended as Udall, the young interior secretary, and Brower, the accomplished alpinist, raced each other to the top of the bridge using the old Anasazi-Wetherill Trail and were then plucked off the bridge by an Air Force helicopter for the return flight to Page.

At first it seemed that the day was a success. The arrangements had all gone smoothly, journalists had responded with a flood of publicity, most of it favorable, and no one had actually panned his idea, at least not to his face. However, in the months following the bridge extravaganza it became obvious that his plan had fallen flat with the two constituencies, environmentalists and the Indians, whose backing he absolutely had to have if there were to be any chance of success. For David Brower, Sigurd Olson, Frank Masland, and the other conservationists who were present at the Bridge Creek rendezvous there was one dark and unmistakable fact which stared out from beneath the hype and the glory surrounding the interior secretary's proposed new park—at the end of
was a payoff—a bribe to get the conservationists to drop their insistence on barrier dams in exchange for a vast new wilderness park, a park whose boundaries were conveniently placed above Lake Powell's high-water line. To these men the proposal smacked a little of reducing the crime rate by eliminating various sections of the criminal code, and they weren't buying. Brower and his associates were perfectly willing to support Navajo Rainbow National Park, but not at the cost of sacrificing Rainbow Bridge. As the National Parks Association wrote, "...the enlargement of the Monument, unless integrated with effective plans to protect it as required by law against the reservoir which will form behind Glen Canyon Dam, might have the incidental though undesired effect of defeating protection."25

For Paul Jones, World War II veteran, ex-college professor, and now chairman of the Navajo Tribe, the secretary's proposal was interesting but flawed. The fact that the secretary had introduced the proposed trade to the public without first consulting with tribal authorities was irritating to say the least. Where their reservation was concerned, the Navajos were particularly sensitive, and while land trades and boundary adjustments were not out of the question, they felt that such matters were best settled in private outside the glare of publicity. Another irritant concerned the land that Udall was offering to exchange. Some sections, particularly in the Church Rock-Two Wells area, were already the subject of an entirely separate land exchange negotiation, so Jones was left with the impression that either Interior was incompetent or was trying to deal the same goods twice. In the end, the chairman wrote to Udall that he did not feel "justified in recommending cession of such a substantial portion of the Navajo Reservation for park purposes."26

In all practical respects, the secretary's park proposal was dead, at least insofar as it could serve as a solution to the Rainbow Bridge problem. Still another hard jolt back to reality was provided later that year when the Congress once again deleted the item for protective works from the Interior Department appropriation bill and added the same restrictive language as it had the previous year. Apparently, this time a subcommittee for Public Works had recommended approval of the appropriation but the full committee had rejected the recommendation by a two-vote margin. Since a tie vote would have approved the subcommittee's action, this meant that Rainbow Bridge had lost by a single vote. This tragedy was magnified by the fact that had the protective works appropriation reached the House floor it would have been supported by an overwhelming bipartisan coalition.

The anger within the conservation community was almost palpable. Writing in the *Sierra Club Bulletin*, David Brower stated,

> We now know that the life expectancy of one of America's greatest scenic resources, including the pristine approach to Rainbow Bridge, is reduced to fourteen months. The exact time is not important here. What needs to be chronicled as a flagrant betrayal, unequalled in the conservation history that sixty-eight years of *Sierra Club Bulletins* have recorded.27

The National Parks Association reported, "In the closing hours of the fight for Rainbow it began to seem clear that the deals had been made and Brower was not in the bargain. That the margin was so close speaks well for the fight conservationists made. Bitter as this reversal may seem, and late as the hour is, the fight to protect Rainbow is not yet over."28 The prophecy uttered in this paragraph was truer than even the editors of *National Parks Magazine* could have known. The battle for Rainbow Bridge was indeed not over—in many ways it was just beginning.

Meanwhile, a few dozen miles downstream at the Glen Canyon Dam site events were rapidly reaching a critical phase. When work began at the site back in 1956 the first order of business had been the drilling of two diversion tunnels, one on each side of the river, to carry the Colorado around the construction zone and then back into the river channel well downstream. Work on them began in earnest during October when Mountain States Construction began blasting the entrance to what would be the 2,778-foot west tunnel near river level. For a while surveyors, construction engineers, and river runners coexisted in a somewhat cautious and uneasy relationship, but the day was fast approaching when the construction site would become too dangerous for unauthorized personnel to be allowed access. That day finally arrived in the brilliant early summer of
1957. On June 4, by prearrangement with the Bureau of Reclamation, Joan Nevills Stavely, eldest daughter of pioneer river runner Norm Nevills and owner of a little rafting outfit called Canyoneers, piloted the last boat allowed past the dam site and down the Colorado toward Lees Ferry. From that date all river traffic was forced to exit the canyon twenty-two miles upriver at Kane Creek Landing, the little site Art Greene had constructed as a launch point for his upriver Rainbow Bridge tours.

Once the diversion tunnels were well underway, construction began on the cofferdam, an earth and rock structure that would force the river into the tunnels and dry out of the actual construction zone. Begun in November, 1958, the cofferdam finally blocked the river off on February 11, 1959, and crews could at last begin excavating the real dam site down to bedrock. The foundations of the dam were placed 72 feet below river level, and once that platform was in place the structure began to rise swiftly toward its eventual crest 710 feet above. Under the watchful eye of Lem Wylie of the Bureau of Reclamation, the workers of Merritt-Chapman & Scott worked in three shifts around the clock six days a week pouring concrete into "the Hole," and the solid white face of the dam quickly began to exhibit its graceful curved shape between the vertical sandstone walls. By the time Stewart Udall was making his presentation to the assembled dignitaries in Bridge Creek the dam was nearly five hundred feet above river level and rising fast. If all went according to plan the bureau was scheduled to close off the river and begin filling Lake Powell early in 1963.

Stewart Udall was now literally between the proverbial rock and hard place. His plan to create a new national park around Rainbow Bridge was a dead issue, Congress was intransigent over the issue of barrier dams to protect the tiny national monument, and Glen Canyon Dam was nearing completion. The law gave him the responsibility to protect Rainbow Bridge, but it seemed that all avenues and options were shut tight. The Interior Department's budget request had gone to Congress in March, 1962, and continued the standard request for monies to build protective structures, but Udall knew it would suffer the usual fate. There was but one option open and that was to order the gates at Glen Canyon to remain open pending the resolution of this quandary. Having been rebuffed by Congress at every turn, this was exactly the course of action the conservation community was now urging, in fact demanding, on the embattled secretary. David Brower, rising to new rhetorical heights, wrote,

Preclude impairment, the law says. It doesn't say to plead excessive cost. Or to hustle through some "geological whitewash." Or to arrange a series of show-me trips to lead editors and Congressmen into believing that protection is just too much load on the taxpayers and would tear up the country with roads and scars . . . And when the law says "preclude impairment" it spells it out in unmistakable words: "no dam or reservoir . . . shall be within any national park or monument." Not maybe. Not yes, but. Just NO . . . We think you want to have a good place in conservation history—not for the personal glow it gives you but for the places in America that are kept beautiful for our sons and theirs . . . We think you can have that place in conservation history. But not by letting those Glen Canyon tunnels be closed until you have done your duty, and the protective works are absolutely assured . . . If Rainbow is not protected, it is not your subordinates who will be held responsible. It is you. You, Secretary Stewart L. Udall . . . Don't let yourself down. Nor us."

These were hard words—and the truth. Udall replied that Interior was well aware of its responsibility under the law and that the request for funds to build protective works would be vigorously prosecuted. However, he also realized that the solution Brower was urging was virtually unthinkable. Even if he could withstand the rage such a course of action would provoke from his own Bureau of Reclamation, the political flak from the Upper Basin states and from Congress would be unimaginable. Hence, Secretary Udall did nothing and the conservationists went to court.

In August, 1962, the National Parks Association, the Sierra Club, and a number of other conservation organizations filed suit in the U.S. District Court in Washington, D.C., for an injunction preventing the secretary of the interior from closing the gates at Glen Canyon until protective works for Rainbow Bridge were assured. The decision came down on December 27, and the news was not good. Judge Alexander Holtzoff dismissed the suit, ruling that the organizations which brought the action had no standing in law on this issue. The concept of "standing" is a basic legal principal firmly rooted in the Anglo-American judicial system, and it basically says that in a civil dispute only those parties which are
threatened with actual harm by any action have the right to sue over that action. Down through the years the standard of harm that was most often applied related to some monetary loss which resulted, or might result, from a particular circumstance. Not only could the Sierra Club not demonstrate any harm to its organization which might result from the flooding of Rainbow Bridge National Monument, but it could not even show any regular organized visitation by its membership to the bridge. (In fact, before Secretary Udall flew them there, most of the leadership of America's major conservation organizations had not even seen Rainbow Bridge.)

However, while the court decision was a disaster for efforts of the environmental movement to save the national monument, it also deepened the quandary of Secretary Udall. In a misguided effort to make the secretary's burden a bit lighter, bureau lawyers tried to pressure the judge to rule on the merits of the case, perhaps with the certainty that his opinion would be in their favor. While in no position to give an official ruling on a case he had just dismissed, the judge was perfectly willing to share his opinion with the Bureau of Reclamation, and that opinion was totally diametric to what the Interior Department wished to hear. Bureau attorneys argued that Congress’s refusal to grant an appropriation had effectively negated the provisions of the CRSP relative to protecting Rainbow Bridge, and, therefore, the secretary of the interior was no longer bound by these provisions. Judge Holtzoff shot back that the relief sought by the plaintiffs, namely leaving open the gates at Glen Canyon Dam, required no money whatsoever, and then he went one step further by declaring, "I am not going to construe the act of Congress as being modified by these limits on appropriations. It has been held time and time again that limits on appropriations do not modify permanent statutes . . . The provisions of the Colorado River Storage Project Act remain in force . . . "

The effort by his department's lawyers had backfired and Udall's problems were more serious than ever. He now had an opinion by none other than a respected judge of a Federal District Court spelling out his responsibility to obey the letter of the law, but exactly how he was to do it remained problematic. Unable to reach a satisfactory and honorable conclusion on his own, he turned for advice to the solicitor general, Frank J. Barry, the chief legal counsel for the Department of the Interior. On January 18, 1963, he received the following reply:

As you have requested I have thoroughly reviewed the Appropriation Act provisions which for the last three years have prohibited the availability of funds for construction or operation of facilities to prevent waters of Lake Powell from entering Rainbow Bridge National Monument. As a result of this review I have no hesitancy in advising you that the provisions originally included in the Colorado River Storage Project Act calling for protective measures at Rainbow Bridge National Monument have been suspended by the Congress and are no longer operative. Under the present state of the law applicable to Glen Canyon, it is the intention of the Congress that construction and filling of the reservoir should proceed on schedule without awaiting the construction of barrier dams at Rainbow Bridge. In these circumstances your refusal to initiate controlled storage behind Glen Canyon Dam would be at complete variance with the law applicable to the project. Consequently, such a course is not within the realm of responsible choice open to the Secretary of the Interior."

The solicitor’s opinion was explicit and to the point—leaving the gates at Glen Canyon open would be a violation of the law; closing them would not. Consistent with the opinion of his highest legal counsel, the secretary passed the word quietly to Commissioner Dominy at Reclamation that the gates at Glen Canyon Dam were to be closed on schedule.

The conservation community could scarcely believe what was happening. The beautifully explicit language inserted with so much care into the statute authorizing the CRSP was being deliberately ignored, first by Congress and now by the secretary of the interior. Their only opportunity for relief lay in the chance that a personal appeal directly to the secretary might dissuade him from a step which at that point seemed inevitable. Accordingly on the morning of January 21, 1963, David Brower walked into Stewart Udall's office hoping against hope for a few moments of the secretary's time for a final attempt to avert catastrophe. Brower never got his meeting with Udall. That day the secretary was not thinking

---

* This, of course, was years before the Supreme Court, in *Sierra Club v. Morton* (1972) (405 US 727), considerably expanded the concept of standing as it related to public interest groups, such as the Sierra Club. It was also long before the panoply of new environmental laws gave wider access to the courts for both individuals and organizations.
much about Rainbow Bridge but instead had moved on to bigger and better projects guaranteed to infuriate environmentalists. That afternoon Dave placed himself at the back of the Interior Department auditorium and stood with open-mouthed amazement as Stewart Udall, Floyd Dominy at his side, announced plans for a series of hydroelectric dams in the Grand Canyon. It was obvious to Dave that these people had learned nothing from the battle for Echo Park, and that this new proposal would once again pit old antagonists in a bitter political struggle.

That, however, was far in the future. The reality of the present was that as Brower sat in Udall’s office waiting for an opportunity that never came, workers at Glen Canyon were descending into the Hole and approaching the west tunnel. It was this outlet that had for the past six years directed the wild Colorado around the construction zone and on down toward Lees Ferry. However, the dam now stood six hundred feet above the canyon floor and the time had come to begin shutting the river off. The first order of business was to chip away at the layers of ice that now coated the steel gates wherever metal met water. Then a team of ironworkers began the slow, meticulous process of screwing the three slide gates down until at last the tunnel was blocked and the river, for the first time in millennia, no longer flowed free. The entire process required two full days, and when the tunnel had drained a temporary plug was installed, to be supplemented later by four hundred feet of solid concrete. 33

As the river found the path to the sea closed, its rage was furious and dramatic. Great swift eddies formed where the current once ran, and the blockaded stream tore at the huge earthen cofferdam in a vain effort to find a new channel down-canyon. It was not long, however, before this fury was replaced by quiet acceptance, and a large still pool formed where the untamed river once flowed. This new lake did not have long to rise, however. The east diversion tunnel’s three gates were shut tight; the third was lowered until exactly one thousand cubic feet per second were flowing through the tiny opening, just enough to maintain an adequate reservoir in Lake Mead to insure efficient electric power generation. 34 It would remain in this position until the reservoir level reached the giant tubes feeding down to the hydroelectric generators waiting below. From then on, under normal circumstances, the only water leaving Lake Powell would first turn these giant turbines before being allowed to flow on toward the Grand Canyon. The river was now totally subject to the rule of man, flowing only according to the demand for electric power in places like Phoenix, Arizona, and Bountiful, Utah. The heart of a great wilderness had been stilled.

Despite the fact that 1963 runoff into the Colorado River Basin was distinctly below average, the reservoir behind Glen Canyon Dam began to rise swiftly inside the narrow inner gorge, and every foot of new water in the pool stilled another half-mile of current in the ancient river. By April 1 the lake had reached a surface elevation of 3,234 feet and was now just below the mouth of Forbidding Canyon. The “pretty little rapid,” first run by John Wesley Powell in 1869, went under first; next to be swallowed was the large sandbar, which had sheltered Anasazi farmers, American gold prospectors, and, later, countless river runners and hikers. Finally, the grey-green pool began to invade the canyon of Aztec Creek itself, moving inch by inch up the little stream, drowning the wildflowers, cottonwoods, and willows and lapping ominously against the canyon walls themselves. Site C, the conservationists’ preferred location for the protective barrier dam, was flooded on June 8.* A year later, on June 23, 1964, the reservoir reached the junction of Bridge and Aztec Creeks, drowning the Narrows site and inching up Bridge Canyon toward the monument, now barely a mile away. At this point,

---

* The dates given here were interpolated from the bureau’s monthly fill statistics for Lake Powell and should be regarded only as approximate.
however, the advance of the lake slowed dramatically. Back downstream the water had already filled the vertical-walled inner gorge of Glen Canyon and was now beginning to spread into the wider, broader benchlands. From now on it would take much more water to raise the surface elevation of Lake Powell than had been the case heretofore. Also, in contrast to Glen Canyon’s gentle, barely discernible gradient, Bridge Creek fell about 140 feet per mile from Rainbow Bridge down to Aztec Creek, so the lake would now face a steep uphill climb. Finally, at the dam itself the water was 388 feet deep and the first of Glen Canyon’s giant turbines was about to go on-line. Once this happened the water releases from the dam would increase far above the minimal level that had prevailed during the previous year. These factors would protect Rainbow Bridge from the reservoir for several more years and would give the conservationists time for one more try at saving it.

A year earlier the federal government had thrown in the towel with regard to the construction of protective works for the monument. In his address to Congress accompanying the budget for 1963–1964, President Kennedy had written,

Funds are not included in the 1963 budget for the construction of protective works at Rainbow Bridge, Glen Canyon Unit. Requests for appropriations for such works were included in the budget for 1961 and 1962 but denied by Congress. It was indicated last year that construction must be initiated in 1962 unless plans to fill the reservoir were to be modified. The decision on the provision of facilities to protect Rainbow Bridge, therefore, rests with the Congress.

Congress responded by inserting the same restrictive language into the budget for the Interior Department that had first appeared back in 1960. In fact, while Interior never again asked for funds to build the protective works, Congress continued to place language prohibiting such construction in every appropriations measure up through 1971. Conservationists, too, no longer thundered over the issue. They bided their time, waiting for just the right moment to play their last card.

It wasn’t as if the environmental community had nothing to do in the meantime. The plans announced back in January, 1963, for dams at the Bridge and Marble Canyon sites within the Grand Canyon reached Congress in the summer of 1965, and the public was treated to a virtual replay of the Echo Park controversy from the decade before. In some cases even the faces were the same. There was David Brower confronting Floyd Dominy and leading the Sierra Club into battle once more, conjuring up friends in the scientific community to challenge the bureau’s own calculations, publishing a book filled with magnificent photographs (this one entitled Time and the River Flowing), and soliciting from a concerned public a torrent of mail directed at wavering congressmen. Incredibly, the tactics which had saved Dinosaur worked yet again, and by early in 1967, Stewart Udall was passing the word that Interior was withdrawing from the fight. The Sierra Club had taken on the Bureau of Reclamation a second time and had scored an impressive victory.

In many ways this triumph, like Echo Park before it, was David Brower’s own. It was he who planned the tactics, organized the battle, and directed his troops, and only he had the unique ability to persuade and attract others by the sheer force of his own commitment. In addition, he had been able to grow the club from a California hiking association with barely four thousand members to a national conservation organization now seventy-seven thousand strong and equipped with enormous political clout. Yet, the battle to save Grand Canyon was to be his undoing. To win he had found it necessary to go over the heads of the elected club leadership and, in some cases, to spend money the club did not have. These actions precipitated an internal battle that David Brower could not win, and in April, 1969, the board of directors fired him, averring that by his tactics he had “seriously damaged the Club’s reputation as well as its future effectiveness.”

Dave was not one to sit back and retire on his laurels, however. Within a few months he had founded a new conservation organization, called Friends of the Earth (FOE), with himself as executive director and president. Using this new platform he was able to position himself to take up once more the fight over Rainbow Bridge.

With Congress intransigent and the administration playing like Pontius Pilate, the only strategy possible was to go back to court. Of course, conservationists had been there before and had been turned away for lack of standing. Hence, this time the strategy would have to be different. FOE was willing to be the lead organization in the planned lawsuit, would hire the attorneys, and would pay the cost of litigation, but plaintiffs would have to be found whom the court could not easily dismiss. While there was no
shortage of volunteers, Brower selected two that seemed to meet all the criteria. First in line was the Wasatch Mountain Club, a hiking and wilderness advocacy organization based in Salt Lake City which could show regular, consistent use of Rainbow Bridge. Second was the venerable Ken Sleight, the veteran river rat and outfitter, who could show a personal financial loss should Lake Powell cut off his access to the trail leading to the top of the bridge. It was not a perfect lineup, but it was probably enough to get the suit into court. Now all that remained was to select the venue and the timing.

At the end of December 1965 Lake Powell had reached a surface elevation of 3,534.4 feet, and had thereby covered the bureau’s preferred barrier dam location at site B to a depth of about two feet. Early in 1970 the reservoir reached 3,570 feet, covering site A as well and placing the lip of the pool just one-third of a mile from the monument’s northern boundary. By November 1, Lake Powell reached 3,600 feet, just six feet in elevation below and a quarter-mile downstream from that critical line which the law said could not be crossed. Brower figured that now was the time to act. In November, 1970, Friends of the Earth, the Wasatch Mountain Club, and Ken Sleight filed suit in the Federal District Court for the District of Columbia asking that the Bureau of Reclamation and the secretary of the interior be permanently enjoined from allowing Lake Powell to rise above elevation 3,606.1 feet. The coalition’s complaint, filed by James W. Moorman (who was at the same time lead attorney for the Sierra Club Legal Defense Fund) and Victor H. Kramer, read, in part,

Defendants have violated, are now violating, and, unless the relief hereinafter is granted, will continue to violate the Colorado River Storage Project Act in that they have failed to take adequate protective measures to preclude impairment of Rainbow Bridge National Monument in violation of Section 3 of said Act. Unless the relief hereinafter requested is granted, defendants will also be in violation of Section 3 of said Act in the very near future by allowing Glen Canyon Reservoir to be within Rainbow Bridge National Monument.16

Brower’s strategy was brilliant. It required no congressional appropriation to implement so there was no separation-of-powers problem, and it would not require the secretary of the interior to empty Lake Powell, only limit its height. By waiting until all barrier dam sites had been inundated, Dave made sure that there were no practical alternatives; the decision would have to be up or down, yes or no. It was a possible solution that also offered certain advantages. Not only would a successful conclusion to the suit protect Rainbow Bridge, it would leave a substantial portion of the country surrounding Glen Canyon, including large sections of many important side canyons, above water. The plaintiffs approached the court with confidence; they were certain the law was on their side. The issue was simply whether Congress could pass a law and then ignore it. To Dave Brower and his allies, if respect for the law meant anything, the inaction by Congress and the Executive Branch could not, would not be allowed to stand.

At least in the early scenes of this judicial drama, things did not go well for the conservationists. The court was asked to enjoin the Bureau of Reclamation from allowing the lake to enter the monument pending the outcome of the suit, and this the court refused to do. Lake Powell would continue filling on schedule while the litigation was in process. They also lost on the matter of venue. Brower had chosen to file this suit in Washington, D.C., rather than in Salt Lake City because the former was known to be at least somewhat friendly to environmental causes and because he figured he could get better environmental lawyers in D.C. than might be available in Utah. (FOE could not afford to hire a legal team and then pay travel and per diem expenses to jet them all over the country.) The government, on the other hand, was anxious to have the suit heard in Salt Lake City, where the sitting judge would likely be available in Utah. (Of course, the government’s legal team would live and travel at public expense.) Accordingly, the Justice Department moved for a change of venue to Salt Lake City, and their motion was granted by District Judge William B. Jones on May 19, 1971. The Justice Department had stressed that the move was necessary because western water rights were involved and because witnesses would be more likely to be available in Salt Lake City than in the District of Columbia. Judge Jones agreed and also noted the heavy case load in his court compared to the one out west.17

This action threw the whole Rainbow Bridge controversy squarely into the lap of Federal Judge
William Willis Ritter. Had the government lawyers been more industrious in doing their homework they might have been somewhat less anxious to get their case into his court. Judge Ritter had been born on January 24, 1899, in Salt Lake City and had law degrees from both the University of Chicago and Harvard. He had been on the federal bench since 1949 (a Truman appointee), was a Mormon, and owned a farm called Thousand Springs near Wendell, Idaho, so on paper he looked to be a learned man and the Justice Department's ideal anti-environmentalist judge. The reality was somewhat different. Judge Ritter was widely known as a true maverick who loved tweaking the government's nose at every opportunity. He had adjudicated environmental matters in his court before, most notably with regard to the proposed Escalante Wilderness, and Utah environmentalists were generally pleased with both their treatment and his decisions. Hence, although he didn't know it at the time, David Brower's cause had not been harmed by the move to Utah.

In the meantime, Lake Powell continued filling. During the winter of 1970–1971 the water level held close to 3,600 feet, but as the spring runoff began arriving from the high country upstream, the lake again began its inexorable rise toward Rainbow Bridge. On May 21, the National Park Service superintendent at Glen Canyon sent the following memorandum, stark in its brevity but chilling in its implication, to his supervisor in Albuquerque:

Memorandum
To: Director, Southwest
From: Superintendent, Glen Canyon

This is to inform you that as of midnight, May 19, 1971, the elevation of Lake Powell reached 3,606.32 feet above sea level. The impoundment has entered into the Monument. This memorandum is for your information.

C. E. Johnson

The tragedy that conservationists had worked so hard at all levels to prevent had, at long last, become a reality. By the time the court heard arguments in the case during January and February, 1972, the water stood eight feet deep at the northern boundary and was well inside the monument.

The Park Service had nothing to say on the whole issue. In a September memorandum to Albuquerque, C. E. Johnson, the man nominally in charge of protecting the national monument, wrote, "I recommend that the Service should not issue any official position statement either pro or con. The best we could hope for, in my opinion, would be "knots" on our heads from one group and accolades from the other and, in the words of my old grandfather, "sometimes it is better to be yellow than black and blue."

Oral arguments on the suit commenced in the United States District Court for the District of Utah on January 13, 1972. The plaintiffs, now represented by James B. Lee and Owen Olpin of Salt Lake City, argued the obvious, namely that the law specifically prohibited Lake Powell from entering Rainbow Bridge National Monument and that Congress, despite several opportunities, had refused to strike or amend the operative statute. Attorney Lee also pointed out that the law did not specify barrier dams as a way of carrying out the statute—there were other ways to accomplish the same goal. Hence, the simple act of refusing an appropriation could not be construed as repealing the congressional intent over Rainbow Bridge.

The government, represented by lead attorney Thomas L. McKevitt of Washington, D.C., argued that by refusing an appropriation for barrier dams and at the same time restricting the secretary of the interior from using any appropriated funds for Rainbow Bridge protection, Congress had indeed expressed an intent to repeal the protective statute it granted in 1956. In addition, Attorney McKevitt argued that subsequent statutes, namely 43 USC 1552(a) and 43 USC 620(f), passed in 1968 and 1962 respectively, set operating criteria for Glen Canyon Dam which could not possibly be met were the reservoir to be held at elevation 3,606.1 feet, as plaintiffs were demanding. Hence, the government was arguing that Congress had, in fact, accomplished a de facto, if not a de jure, repeal of the protective language contained in 43 USC 620.

This was clearly a thorny legal issue, one in which points of law could be raised to support either side. However, in the Salt Lake City media the debate was already hot and getting more heated by the day. Dr. Delbert Wiens, president of the Wasatch Mountain Club, stated, "We feel this generation owes it to the next generation to consider the quality of life as we develop resources. We see development taking place purely for development's sake—they're dam builders and it is natural for them to want a bigger dam with more water."

On the other hand, Felix Sparks, director of the Colorado Water Conservation Board, was just as emphatic on the other side: "If the suit is successful,
then all future water development in the Upper Basin of the Colorado River, including those projects now authorized, will be destroyed, both in terms of water supply and economic feasibility. The suit, therefore, poses the greatest challenge in history to water resource development in the Upper Basin states."

This time, however, the battle was not being fought in the court of public opinion but in a court of law. After a long twelve-month, nail-biting wait, Judge Ritter finally handed down his opinion. In a three-page Order Judgment and Decree issued on February 27, 1973, the judge granted the plaintiff’s motion for a summary judgment and ordered the Bureau of Reclamation “. . . forthwith to remove all waters which have already intruded from Lake Powell and the Glen Canyon Unit from the Rainbow Bridge National Monument and to prevent the waters from Lake Powell and the Glen Canyon Unit from entering the boundaries of the Rainbow Bridge National Monument at all times in the future; . . .”

Conservationists were ecstatic! At long last the legislative language they had labored so diligently to enact was going to be enforced. Congress could not, in fact, write a statute and then fail to face the consequences. Just to soften the blow a little to the basin states, Dave Brower pointed out that a partially filled Lake Powell would evaporate half the water a full reservoir would have lost and, therefore, would actually save about 2 million acre-feet per year. At a value of ten dollars per acre-foot, he calculated that over the lifetime of the reservoir the Upper Basin would stand to gain $1.3 billion, far offsetting any revenue lost from power generation shortfalls.

The Bureau of Reclamation, however, saw the decision as a first-class disaster. When the decision came down Lake Powell stood at 3,600.7 feet, barely outside the monument, but runoff from heavy winter snows in the Rockies, the Wind Rivers, and the Uintas would soon come pouring down the Colorado, the Green, and the San Juan, and under the terms of Judge Ritter’s order the bureau had no place to put it. The only immediate solution was to begin dumping water— and fast. Hence, the bureau began sending twenty-five thousand cubic feet per second through the dam’s power plant, the maximum flow possible and nearly double the normal rate for the time of year. The resulting power output of the generators was far above demand, so the bureau was offering to sell the excess—cheap— to any consumers along the western power grid who could use it.

The bureau sold its surplus power, of course, but the District Court decision created a gigantic long-term problem for the government. The power plant at Glen Canyon was designed to run at maximum efficiency with the pool at 3,570 feet in elevation, so if the level of Lake Powell were held to 3,600 feet everything would be fine. The problem was that the lake could not be held at a static elevation. The reservoir was designed to regulate the river so that precisely 7.5 million acre-feet per year would flow through the Grand Canyon and into Lake Mead. In wet years it was designed to rise, storing the extra water; in dry years it was designed to drop, sending storage downstream. Under Judge Ritter’s decision the reservoir had only thirty feet of “head” below which, one by one, the great generators would have to be taken off-line. The bureau was counting on power sales to repay the cost of the dam and to finance the big irrigation projects upstream. Without it, Glen Canyon Dam and the whole Upper Colorado River Storage Project would become one gigantic white elephant.

For the Upper Basin states the decision was an even greater loss. The cross-section of Lake Powell looks like a huge funnel, with the greater part of the storage in the upper levels. In fact, the top hundred feet of the reservoir holds nearly 46 percent of the total storage capacity. Hence, in one fell swoop conservationists had reduced the potential holdings of Lake Powell from 27 million acre-feet to 14.75 million acre-feet, water these states were counting on to fuel their future economic growth. Both the Bureau of Reclamation and the states of the Upper Basin were now desperate to find some way of nullifying Judge Ritter’s decision.

There were two options open to the government. The most direct approach was to go to court and follow the lengthy appeals process, hoping that somewhere along the way Judge Ritter would be overturned. The first step in the process was to go back into the U.S. District Court and ask Ritter to overturn his own order or to at least issue a stay pending an appeal to the Tenth Circuit in Denver. Accordingly, U.S. Attorney C. Nelson Day, acting for Secretary Rogers C. B. Morton and the Bureau of Reclamation, filed the necessary papers on March 13, 1973, and got a hearing for Tuesday, March 28.

Both David Brower and David Crandall, head of the Bureau of Reclamation’s Region 4 office in Salt Lake City, testified, Brower emphasizing the
potential harm to the monument if water were allowed in, Crandall complaining about potential lost power revenues. As expected, Judge Ritter took the motion under advisement, and then on April 22 handed down his decision. From the government's perspective the news was all bad. The judge refused to alter his decision or to stay his order, the consequence of which was the dumping, potentially, of 4 million acre-feet of water from Lake Powell. In the commentary accompanying the decision he stated,

It clearly appears that the interests of the plaintiffs will be damaged if the order isn't enforced. Congress has long since settled that the interests of the public herein lies in protecting the Monument at all times . . . The question, then isn't so much whether defendants and intervenors have carried their point by a preponderance of the evidence but whether they have presented the court with any evidence on their point at all.47

With no relief or prospect thereof coming from the U.S. District Court in Utah, the government would now have to take its case to the Tenth Judicial Circuit.

A second option was to attack the legislative foundation of the plaintiffs' case, namely the provision protecting the bridge from Lake Powell. On March 12, 1973, Senator Moss introduced a bill to accomplish this in the Senate, and on March 28, Congressman Gunn McKay, representing Utah's First District, introduced a companion bill into the House. In his memorandum accompanying the bill, Senator Moss revealed the panic which Judge Ritter's decision had caused up and down the length of the Upper Colorado Basin: "What this really means is that the Upper Basin states will lose their ability to use water apportioned to them under the "law of the river" . . . I have reintroduced the bill this session and I ask that hearings be held on it immediately. It is the only certain way to head off the catastrophe which is now hanging over the entire Colorado Basin Project."48

Not even the Utah congressional delegation was unanimous on the subject, however. Wayne Owens, a native of Panguitch in southern Utah's Garfield County and now representing Utah's Second District, stated that he was unwilling to support the call for new legislation. Said Congressman Owens, "The overriding Utah interest in this matter is not clearly apparent. Reclamation Bureau claims of multi-million dollar losses to Utah are substantiated only by their own projections and marketing theories . . . My attempts to find the facts have not been wholly successful."49

Senator Moss never got his hearing and, despite the full backing of Wayne Aspinal, still chair of the House Interior Committee, Congressman McKay's bill was going nowhere just as fast. What this flurry of legislative activity did accomplish, however, was to reinvigorate the debate over the extent to which Lake Powell actually threatened the structural integrity of Rainbow Bridge. Dr. Paul Alexander, a Grand Junction, Colorado, geologist, echoed the official U.S. Bureau of Reclamation position, namely that Lake Powell would have no effect. He stated, "There is no geologic reason to think the water will endanger the strength of the bridge. The base is formed of the hard Kayenta sandstone, and summer heat and winter erode it more severely than does standing water."50

Others, however, with equally valid geologic credentials weren't so sure. Said William Breed, curator of geology at the Museum of Northern Arizona,

Bureau of Reclamation engineers have stated that the base of the Bridge would not be weakened by submergence under water. The main basis for their conclusions is that in many places the rock that forms the base of Rainbow Bridge is intermittently saturated with ground water and therefore the rock should not lose its strength by the addition of more water. However, there is an important difference between percolating ground water and large bodies of surface water, such as a lake. Tests of the physical strength of the Kayenta Sandstone under saturated conditions as opposed to dry conditions were called for by some scientists years ago, but to my knowledge have never been made.49

In a letter to Senator Moss, a young southern Utah high school math and physics teacher pointed out that the weight of the water under Rainbow Bridge when Lake Powell reached full pool would be over 5 million pounds and that a force of this magnitude on the walls of Bridge Canyon could prove disastrous. He went on to state,

The problem is that the Kayenta Sandstone is not a solid sheet formation like the Navajo Formation above it, but instead is fractured laterally in the same direction as the force exerted by the water. This means that the lower layers, under greater pressure than those above, could shift relative to those on
This same problem was also pointed out later by geology professor Charles B. Hunt of Johns Hopkins University:

A further potential hazard at Rainbow Bridge is small-scale slippage of rock along existing joints and faults. Such slippage has been documented for certain large reservoirs, and is attributed to the disequilibrium caused by the added weight of the water, plus aqueous lubrication of the faults... If even small movements occurred, the structure of the Bridge would be endangered.53

Even though faced with this potential threat to one of its most unique units, the National Park Service continued to display the broad yellow streak that had been its characteristic ever since the controversy over the bridge first developed. In a memorandum to the director of the midwestern region of the Park Service, the associate director for legislation stated that the service's official position on the Moss-McKay bill was that the proposal not be enacted in its present form but, "... we did not object to legislation which would reaffirm the Congressional policy that no dams or reservoirs should be within a national park or monument with a specific exception to that policy with respect to Rainbow Bridge National Monument." In other words, the branch of government entrusted with the protection of all national parks and monuments was perfectly willing to push little Rainbow Bridge out into the cold and to slam the door behind it. This was a base and cowardly thing to do, and the Park Service knew it.

However, most people in the federal government and in the executive branches of the Upper Basin states knew that the legislative path held little promise. Even if a bill repealing the legal protection afforded Rainbow Bridge could somehow be pushed through the House, it would take only a comparative handful of dedicated Senators to block any action by the upper chamber. Hence, the only practical hope for reversal of the situation seemed to lie in the courts through the long and cumbersome appeals process. It was here that government attorneys began to gain a small glimmer of hope. Willis Ritter may have been a learned and thoughtful judge, but over the years he had developed the nasty habit of having a disproportionate number of his decisions overturned by a higher court. The environmental community realized this and knew that such a catastrophe was a distinct possibility.

Once Judge Ritter had denied the government's appeal to stay his own order halting the waters of Lake Powell at the monument boundary, C. Nelson Day filed the papers necessary to have the case heard by the seven judges of the Tenth Circuit Court of Appeals in Denver, Colorado. The first order of business was to put a hold on Ritter's order keeping Lake Powell below 3,606.1 feet, at least pending a final decision of the court, and here the government hit pay dirt. The preliminary motion to stay Judge Ritter's order was argued by Clyde O. Martz, assistant attorney general for Colorado, and opposed by Owen Olpin, attorney for the conservationists. On May 1, 1973, a three-judge panel of the court voted 2-1 to grant the government's motion. Voting to allow Lake Powell to cross the monument boundary were Judges Oliver Seth of Santa Fe and William C. Doyle of Denver. The lone friend of Rainbow Bridge that day was the court's presiding judge, Delmas C. Hill of Wichita, Kansas—once again the monument had lost by one vote.55

The very day Judge Ritter's order was set aside, the Bureau of Reclamation pared the flow through the power plant at Glen Canyon Dam from 26,240 cfs to 15,000 cfs. With runoff from the winter's snowpack now pouring into Lake Powell at the rate of 20,000-30,000 cfs, the reservoir, which had been drawn down to 3,590 feet in elevation, would once again begin to rise up Bridge Creek.

Alarmed at losing even this preliminary legal round, conservationists immediately appealed this decision to the Supreme Court through Associate Justice Byron R. White. It was to prove a futile gesture. On the following Monday, May 7, the Court released a terse announcement refusing to vacate the stay, thus allowing Lake Powell to rise with impunity pending a final decision by the appellate court. With runoff into the reservoir now reaching its peak, the pool's surface elevation was rising nearly ten inches a day, and within three weeks was once more closing in on that imaginary line in the sand. On Tuesday, May 22, just after midnight, the water reached 3,606.4 feet. Lake Powell was again within the boundary of Rainbow Bridge National Monument.

Two days later, on Thursday, May 24, the entire seven-judge panel of the U.S. Tenth Circuit Court of Appeals met in Denver to hear the case. On that day...
Friends of the Earth, the Wasatch Mountain Club, and Ken Sleight were joined by the Sierra Club and twelve other environmental organizations with attorney James Lee pleading their cause. Mr. Lee told the court that over the years Congress had explicitly denied requests to build dams and reservoirs in Yellowstone, Dinosaur, and Grand Canyon. Hence, the letter of the law and the intent of Congress were both crystal clear: "[N]o dam or reservoir . . . shall be within any national park or monument." The judges listened to the legal arguments for about an hour and then announced that a decision might be expected within a week.  

However, the court did not reply in a week, nor a month, or even in two months, and as the summer dragged on and the friends of Rainbow Bridge nervously waited, Lake Powell continued pushing a narrow finger of water up the Kayenta Sandstone gully toward the great arch itself. On July 31 the lake reached an elevation of 3,644.1 feet, just ten feet in elevation from a point directly under the bridge.

Finally, on August 2, 1973, the long-awaited document was released. In a 5-2 decision, written by Judge Oliver Seth, the court held that Congress had indeed repealed 43 USC 620 by implication and that, despite the clear wording of the statute, Rainbow Bridge was entitled to no protection from the waters of Lake Powell. The court stated,

"The record demonstrates affirmatively that Congress evaluated the consequences of water encroachment into Rainbow Bridge National Monument, and the difficulty, unsightliness of the protective dam, pumps, and tunnel, and the costs, and made a choice. The resultant specific prohibition as to the use of funds for protective works in the face of the inevitable water advance in the streambed under the Bridge has overridden the expression of intent in section 3 of the Storage Act as to Rainbow Bridge in section 1 thereof."

Voting with the majority were Judges Oliver Seth, William J. Holloway, Robert H. McWilliams, William E. Doyle, and James E. Barrett.

In a stinging, bitter dissent written by Chief Judge David T. Lewis and joined by Delmas C. Hill, the minority stated,

"... however viewed, [we] consider the action of the majority to be a deep trespass upon the prerogatives of Congress and a clear and dangerous violation of the doctrine of separation of powers . . . We start then with an original congressional mandate, not expressly repealed by any subsequent Congress, that no reservoir shall be within any national monument and the undisputed fact that the Rainbow Bridge National Monument is now flooded even under the Bridge and with the judicial sanction of repeal by implication. To [us], the judicial words "repealed by implication," by very definition carry heavy overtones of erosion into the doctrine of separation of powers. So, too, the chosen words contained in the main opinion "reversal of a previous position" describe an equally dangerous judicial aggression."

The Circuit Court's decision dealt a sickening blow to the conservationist cause, but the battle to save Rainbow Bridge was not over. On October 26, 1973, the tireless Owen Olpin filed the papers necessary to carry the suit over Rainbow Bridge to the United State Supreme Court. The petition asserted,

"The Court of Appeals' judgment contradicts numerous United States Supreme Court decisions as well as decisions of Courts of Appeal in other circuits defining the power of courts to declare statutes repealed by implication . . . Unless the courts check the license the Secretary and the Commissioner have taken with congressional policy, other parks and monuments may also be compromised by utilitarian encroachments of the kind that Congress historically has prohibited."

The minority position accompanying the appellate court decision gave the plaintiffs hope that this was an issue the high court would wish to review, but there was now nothing anyone could do but wait. It was also a time for a certain amount of reflective introspection. Why would conservationists go to such astounding lengths to protect a tiny rectangle of desert wilderness containing but one unique geologic feature when the reservoir threatening it was simultaneously gobbling up countless miles of some of the most beautiful scenery on the planet? Why not simply abandon the whole enterprise and spend the money, time, and energy fighting for the preservation of much larger threatened areas elsewhere? Rob Thompson, conservation activist and outings chairman for the Uinta (Utah) Chapter of the Sierra Club said it best for all those involved: "For those who could not forget 'the place no one knew,' the rescue of Glen Canyon's remaining beauty is the object of enduring determination. As for Rainbow Bridge, this generation's
legal and moral obligation to leave this great stone monument unscarred and unimpaired is absolute."

In the meantime a number of states, through the actions of their attorneys general, were joining the suit on the side of the conservationists, filing friend-of-the-court (amicus curiae) briefs with the Supreme Court. In fact, by the time the Court was ready to consider the matter sixteen states, Alabama, Arkansas, Florida, Idaho, Illinois, Kentucky, Michigan, Minnesota, New York, Ohio, Pennsylvania, South Carolina, Texas, South Dakota, Vermont, and Washington, had filed such briefs asking the Court to take up the matter and to reverse the lower court's ruling. In the brief for Florida submitted by Kenneth F. Hoffman, the assistant attorney general, it was stated, "Nothing in the legislative history or the subsequent actions of congress relating to the two statutory sections ... indicates any repeal by implication. To observe a parsimonious attitude of Congress and move from there to an implied repeal is a 'Liebestraum leap' going beyond the outer limits of judicial activism.""61

All this proved not to be enough. On Monday, January 21, 1974, the Supreme Court announced that it had denied the appeal and would not hear the case. This let stand the court of appeals ruling and left the conservationists at the end of a long and bitter road—there would be no protection for Rainbow Bridge. Three justices, William O. Douglas, Byron R. White, and Harry A. Blackmun, had indicated a desire to hear the case, but it takes four votes to bring a matter before the Court. Once again the monument had lost by a single tally.62

Rainbow Bridge was a cause, however, which seemingly refused to die. Now it was the turn of the Navajo Mountain religious community to try their hand at saving the monument. On September 3, 1974, three Navajo medicine men and three chapters (regional administrative subunits) of the tribe filed suit in the U.S. District Court for Utah alleging that the flooding produced by Lake Powell had desecrated a site sacred to the Navajo people. The complaint, filed by attorney Eric Swenson on behalf of the plaintiffs, asserted, "Rainbow Bridge is a religious symbol and is a focal point through which many prayers and religious ceremonies derive ... Defendant operation of Glen Canyon Dam has resulted in destruction and desecration of many holy places of great importance ..."63

The suit was heard in the court of Judge Aldon J. Anderson, now the federal district judge for Utah, who ordered a study prepared to test whether the Navajo claims had any merit in law. The study was undertaken by Karl W. Luckert, and the result was a book entitled *Navajo Mountain and Rainbow Bridge Religion* (Flagstaff: Museum of Northern Arizona, 1977). Despite the fact that the study showed a clear historical and enduring tie between the Navajo people and Rainbow Bridge, Judge Anderson ruled on January 13, 1978, that "... there is nothing to indicate that at the present time Rainbow Bridge National Monument and its environs has anything approaching religious significance to any organized group ..."64 The decision, which clearly flew in the face of fact and reason, was the subject of much derisive comment, but in fairness to Judge Anderson it must be pointed out that the one organized entity which could have brought substance to the plaintiffs' claim, namely the Navajo Nation, was not a party to the suit. In fact, Navajo tribal chairman Raymond Nakai stood at the dam in June, 1969, and proudly proclaimed, "A conservationist is one who is content to stand still forever. Major Powell would have approved of this lake. May it ever be brimming full."65 The suit was appealed to the Tenth Circuit Court in Denver and then on to the Supreme Court. Neither judicial body saw fit to overturn Judge Anderson's ruling, and so died the last hope that Rainbow Bridge National Monument could be spared its fate.

By the time the Supreme Court was denying the conservationist petition during the winter of 1974, Lake Powell had receded back down Bridge Creek and away from the arch, but as the weather warmed and runoff from the high country began to flow into the reservoir, the water once again resumed its upward progress. On May 16, 1974, slackwater slid silently under the bridge, and by May 23 it had formed a pool there three feet deep.66 By the time the Navajos filed their suit that fall the reservoir had peaked for the year at 3,669 feet, placing water fifteen feet deep under the Great Rock-Arch.

Glen Canyon Dam had claimed its last significant victim, but it still had a lot of water to impound and several feet more to rise. On Sunday, June 22, 1980, at precisely 9:42 p.m. MDT, Lake Powell reached 3,700 feet—the reservoir had filled.67 Water now stood forty-six feet deep under Rainbow Bridge and slackwater extended through the monument and spilled over onto adjacent reservation land. This was as high, give or take a foot or two, as anyone expected the lake to go, but nature has a way of confounding
humanity's expectations. In 1983, after a winter of near-normal precipitation, the springtime produced record snow and rain followed by a quick warm-up. The combination caught bureau hydrologists off guard, and Lake Powell, which had been drawn down only enough to accommodate normal inflow, began to rise at a rate beyond the controlling capacity of the dam's power plant and outlet tubes. Following a summer of frantic engineering activity, during which the structural integrity of Glen Canyon Dam itself was seriously threatened, Lake Powell finally peaked and began a slow but measurable retreat. At its highest point, achieved on July 14, 1983, the lake stood at 3,708.34 feet, placing water a bit over fifty-four feet deep beneath Rainbow Bridge. It was a level that neither conservationists nor reclamationists ever wished to see repeated.

As Lake Powell crept quietly through the monument and began to rise toward its normal pool elevation and beyond, Rainbow Bridge itself was being closely watched. In its decision overturning Judge Ritter's protective ruling, the Tenth Circuit Court of Appeals had remanded jurisdiction back to the District Court in Utah for a period of up to ten years, during which time the bridge was to be monitored for any signs of damage due to the rising waters beneath it. To comply with the court's order, the Bureau of Reclamation instituted an extensive program to observe every aspect of the bridge's behavior during the time specified and to guarantee that the reservoir was causing no structural harm to the monument. A spring, 1974, memorandum outlined the bureau's strategy:

Memorandum May 14, 1974
To: Regional Director, U.S.B.R., Salt Lake City, Utah
From: Regional Geologist, U.S.B.R.

The monitoring program will consist basically of the following:
1. Surveys: Includes precision transfer points from U.S.G.S. monuments, triangulation, topography, sedimentation, Bridge control points, and canyon erosion control section. It has been decided to monitor the distance between canyon walls by triangulation in addition to direct measurement by Lovar tape.
2. Establishment of 3 Whittemore gauge stations on the Bridge legs.
3. Geologic mapping as needed.
4. Photographic coverage as needed.
5. Weather station installation on raft
6. Seismic station in Monument.
7. Rock and water samples where required.
8. Other measurements as required.

William Mann

Monitoring of the bridge actually began with preliminary survey operations on April 16, and by the time the bureau had everything in place the program was a model of precision. Three small reflecting mirrors were placed on the upstream face of the bridge so that motion and variation in the shape of the arch could be monitored by laser beams. This would enable the bureau to detect changes on the order of less than .01 inch, far smaller than what could be detected by traditional survey techniques. The Whittemore Strain Gauge stations would monitor any widening in the surface cracks already apparent in the bridge's structure. Rock samples were collected regularly to monitor moisture content in the walls of the canyon below the bridge, and photographs were used to detect any surface motion of the boulders and soil within the monument. Electronic measurement was supplemented by standard survey techniques involving both on-ground and aerial mapping. Hence, from April, 1974, through June 1, 1985, there was very little that could happen within Rainbow Bridge National Monument that would escape detection.

The bureau's monitoring program produced a number of surprises, not the least of which was the discovery that the bridge was actually smaller than everyone had thought. In 1909 William Douglass had measured the height of the bridge to be 309 feet and the width to be 278 feet, and these figures had stood as official for nearly seventy years. The very precise surveys the bureau was now making revealed that the height was only 291 feet and the width 275 feet. The elevation at the top-center of the bridge measured at 3,945.46 feet, but just off center to the right the elevation was found to be two feet higher. It is still by far the largest natural bridge in the world, but the fact that the Douglass survey had been so far off came as a major shock.

A second revelation was how much motion the bridge exhibited naturally in response to temperature changes in the air around it. As the atmosphere warms, the ribbon of sandstone making up the bridge is thoroughly heated, causing the bridge to rise and widen. Conversely, as the air cools the sandstone contracts, thereby lowering and narrowing its dimensions.
The bridge, then, acts as a giant thermocouple, changing dimensions ever so slightly on a daily and seasonal basis. In fact, the Great Rock-Arch is 0.387 feet (just under half an inch) higher in July than it is in January. Geologists had expected some variation of this type, but the degree of motion was a major revelation. This much cyclic expansion and contraction does pose a significant threat to the structural integrity of the bridge and is perhaps one source of the numerous surface and internal cracks the monitoring detected.

The final report of the program was submitted by the Bureau of Reclamation to the Federal District Court in Salt Lake City during the summer of 1985. It found, predictably, that "... the presence of Lake Powell at its various operating levels has had no measurable detrimental effect upon the structural stability of Rainbow Bridge." With respect to the sandstone forming the foundation of the bridge, the report concluded that there was "no evidence of undercutting, weakening, or solutioning of the rock," and, further, that changes in the moisture content of the Kayenta Formation due to the reservoir were "inconsequential." The absurdity of trying to measure in only ten years the long-term geologic effects of a brand-new reservoir on a sandstone structure millions of years old seems not to have occurred to the authors of the report, but the instructions of the court had been fulfilled. In 1985 the Bureau of Reclamation packed up its survey instruments and left the monument. There has been no regular surveying or monitoring of Rainbow Bridge since that time, this in spite of the warning issued by geologist Eugene M. Shoemaker of the California Institute of Technology.
who said, "I think there can be little doubt that flooding the base of Rainbow Bridge could shorten the lifetime of the Bridge."76

Aside from the debate about whether the reservoir behind Glen Canyon Dam will eventually have a disastrous geologic impact on the Great Rock-Arch, there is no doubt that the coming of Lake Powell has had a profound effect on the national monument. In 1962, the last full year of visitation before the gates closed at the dam, only 2,918 people visited the bridge. These days nearly ten times that number arrive every summer month, almost all coming by boat from either Wahweap or Bullfrog Marinas, and for many, Rainbow Bridge is simply a brief side-excursion during a day devoted to fishing or water skiing.

Those who come via a commercial tour will spend less than an hour at the monument, just enough time to walk from the boat dock up the short Park Service trail in order to snap a few long-distance photos near the interpretive displays. Hence, in less than a generation Rainbow Bridge has gone from being the veritable symbol of wilderness, located precisely in the middle of nowhere, to a new existence as a tame, almost urbanized curiosity, as accessible to motorized tourism as the Washington Monument. It is almost a certainty, therefore, that the Navajo Indians who sued over the issue were right after all—the spiritual nature of the bridge has been totally lost. As George Reiger of the Audubon Society has written,

... there is nothing special anymore about visiting Rainbow Bridge ... While some may argue that the beauty of the canyonlands has been enhanced by the lake, the solitude that Edward Abbey and Zane
Grey felt essential to perceiving the land's beauty is increasingly in short supply—in large part because of the lake. Even if the flooded buttes and canyons have a kind of paradoxical splendor—a study in contrasts—their meaning is often lost in the chatter of tour guides or the roar of passing boats. One is left with self-developing snapshots for an engineering office wall.7

Today it is no longer possible to stand under the Great Rock-Arch and feel that special kinship with those who came before, whether the Anasazi, Cummings, Wetherill, or Teddy Roosevelt. In fact, the setting of the bridge has been so totally altered that it is possible to doubt that one is gazing at the same arch they saw. What really rankles conservationists, however, is that this despoliation of a precious national treasure occurred in spite of two laws, either of which should have been enough to preserve its natural setting. Those laws were simply ignored, first by Congress, then by the administration, and finally by the courts. Those statutes still stand on the books, unaltered, and unrepealed: “... no dam or reservoir ... shall be in any national park or monument,” and “... the Secretary of the Interior shall take adequate protective measures to preclude impairment of the Rainbow Bridge National Monument.” Those words have appeared in every single edition of the United States Code since 1956, and they stand there today, a living rebuke to those custodians of our heritage who were unable to rise to the special challenge posed by Rainbow Bridge. As the inimitable Casey Stengel was so fond of saying, “You can look it up.”