

JOE MUNROE: *View from Bachit Point, outside Grand Canyon National Park.*

*Sierra Club Bulletin*  
MAY 1966

*Grand Canyon*

That the Canyon is not "conquered"  
is one of the most impressive things about it.

—JOSEPH WOOD KRUTCH

## NEWS OF CONSERVATION AND THE CLUB



### Five members elected to the Sierra Club's Board of Directors

Successful candidates in the April election to the Sierra Club Board of Directors are (from left to right) John Oakes, editorial page editor of *The New York Times*, of New York; Frederick Eissler, high school teacher, of Santa Barbara; Edgar Wayburn, physician, of San Francisco; Lewis Clark, retired engineer, of Alameda; and Ansel Adams, photographer, of Carmel. All are incumbents except Mr. Oakes. Other members are Pauline Dyer, Jules Eichorn, Richard Leonard, Martin Litton, and Wallace Stegner (terms expire in 1967), and Nathan Clark, Charlotte Mauk, George Marshall, Eliot Porter, and William Siri (terms expire in 1968). The new Board will hold its first meeting on May 7 in the French Room of the Fairmont Hotel, in San Francisco. One of the principle items of business will be the election of officers.

### 4,900-year-old bristlecone pine cut down to prove it was oldest tree living — once

It recently came to light that an ancient bristlecone pine was felled in the summer of 1964 that later proved to be 4,900 years old—the oldest living thing known. It was cut on Wheeler Peak in Humboldt National Forest, Nevada, part of the proposed Great Basin National Park. Apparently a scientist broke his coring equipment (used to determine age without destroying the tree) and secured permission from local Forest Service personnel to cut it down. In answer to a recent inquiry, the Intermountain Region of the USFS wrote that "it should be emphasized that only one of the bristlecone pines was cut. It has provided data of scientific importance and the bole of this tree has been fully utilized in the development of exhibits. . . ." Hmmm.

### Junior Members, please note

Several months ago, we wrote Junior Members asking whether they wished to continue receiving the *Bulletin*. Our thought was that many Junior Members had access to copies received by other members of their families, and that we might be able to economize by reducing the size of the *Bulletin's* mailing list. The number of Junior Members who indicated that we might drop their names from the mailing list was too small to make economies possible, however. We thank the members who replied to our questionnaire, and hope that excess copies can be put to good use. Junior Members were also notified in the March issue that we are not equipped to make automatic changes of address—from spot A to spot B and back to spot A after the summer vacation. We require notice of *each* change of address about three weeks before the change.

**"Golden Passport"  
now available from  
club headquarters**

For \$7, an annual entrance permit (dubbed the "Golden Passport") admits all occupants of a car to any of 7,000 federal recreation areas administered by the Forest Service, Corps of Engineers, TVA, Park Service, Bureau of Land Management, Bureau of Sport Fisheries and Wildlife, and Bureau of Reclamation. Proceeds go to the Land and Water Conservation Fund, which is divided among federal, state, and local agencies and used to buy more recreational lands. Permits may be bought through the club (which does not profit from the transaction). Send \$7 check payable to the Sierra Club—indicating what it's for—and a self-addressed envelope to club headquarters.



**Con Ed will take  
Storm King case  
to Supreme Court**

Consolidated Edison has announced that it will ask the Supreme Court to reverse the historic decision by the Court of Appeals that countermanded the Federal Power Commission's grant of a license to Con Ed to build a pumped storage hydroelectric plant on the Hudson at Storm King Mountain. The Court of Appeals' decision was based in part on its finding that the FPC had not taken sufficient account of esthetic considerations. Harry Hogan, counsel for the Department of the Interior, indicated that he might ask that further FPC hearings be delayed as much as three years to permit an adequate study of the proposed plant's effect on the ecology of the Hudson River.

**AIGA award to Everest**

*Everest: The West Ridge* was selected as one of the fifty books of the year by the American Institute of Graphic Arts. Other Exhibit Format books similarly honored by AIGA in previous years are *This Is the American Earth* and *The Eloquent Light* (designed by Nancy Newhall and David Brower jointly), and "In Wildness Is the Preservation of the World" and *The Place No One Knew: Glen Canyon* (designed by David Brower, as was the 1965 winner, *Everest*).

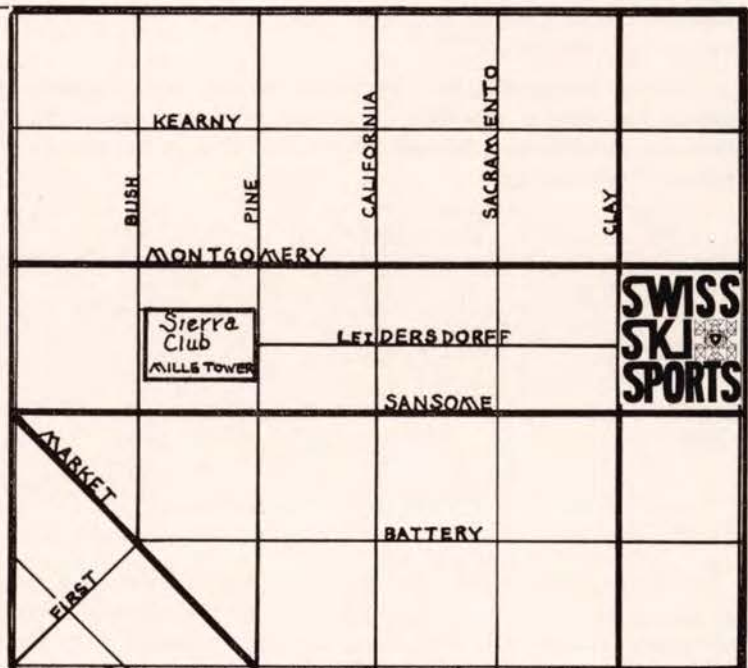
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# Grand Canyon's Highest and Best Use

"The Canyon is at least two things besides spectacle," says Joseph Wood Krutch. "It is a biological unit and the most revealing single page of earth's history anywhere open on the face of the globe." Which, of course, is precisely why part of it was set aside in a national park to be maintained in a natural state and preserved "unimpaired for the enjoyment of future generations." Unfortunately, only a minor fraction of the Canyon was included within the existing park—and even within this sanctuary, the Canyon's integrity is threatened by the Bureau of Reclamation's proposal to build Bridge Canyon and Marble Gorge dams. Rather than remain on the defensive, the club has chosen to mount a counteroffensive. Last month it sponsored legislation that would enlarge the park to include the entire Canyon, and that would specifically prohibit any dams or diversions between Lee's Ferry, where the Canyon starts, and Grand Wash Cliffs, where it ends.

The Canyon has incalculable scientific value, but dams would destroy much of its biota, turn a living laboratory into a static museum piece, and effectively deny access to anthropologists, archaeologists, biologists, botanists, geologists, and others who still have much to learn from it. And the Grand Canyon has tremendous educational value for the lay public, which, as nowhere else on earth, can here grasp almost intuitively many of the essentials of geology and geomorphology. "Unused," the Grand Canyon is already being put to its highest and best use.

So far as most of its readers are concerned, "the most revealing single page of earth's history" is incomplete. Most visitors don't know that 50-odd miles of Grand Canyon are upstream from the national park, in Marble Gorge, and that about 100 miles of it are downstream from the national monument. Looking at the Canyon's spectacular climax, one cannot really comprehend the forces that created it. But tracing the Canyon's course from its origin at Lee's Ferry down through Marble Gorge, you get in at the beginning of the story and it begins to make sense. This is one of the best reasons to include the entire Canyon in an enlarged Grand Canyon National Park—and to exclude dams that would falsify the record.

Trying to understand the Canyon on the evidence presented by the colossal fragment of it within the existing park and monument is like trying to understand a passage when the letters A through E and R through Z are missing:

"---on- -ll pl-n- -n- p-og--m-, ---- -on-----ion i- -l-im---l-om--hing of -h- min- ---n i---l of m-n -ho -h--i-h -h-i- p--- -n--li--- in -h-i- f-----. O-- -i-ili---ion -ill -- m----- -- i-- fi--li--o -hi- i---l -- ----l- -- -- i-- --- -n- po---- -n- -----m of j---i--. In o-- p-p----l ----h fo- ---n-n-- , -----, -n- o---- -- m-nif--- -o-h o-- lo- fo- -h- l-n- -n- o-- --n-- of ---pon-i-ili-- -o---- f-----g-n-----ion-. . . . If, in o-- h--- -o 'p-og----,' -h- --onomi-- of --olog- --- -i---g----- -- -i-i-n- -n- poli-- m-k--- -lik-, -h- ----l- -ill -- -n -gl- -m-i-- , -- -nno- -ffo-- -n -m-i-- -h--- --p-i-n-- ---mpl--pon ---h-i-- -n- ----lopm-n- ---i-ion- --- m--- -i-h -n --- onl- on -h- p----n-." --- ----- L. ---ll

Marble Gorge of Grand Canyon corresponds to letters A-E, and the portion of Grand Canyon downstream from the national monument corresponds to letters R-Z. Without the parts excluded from the park and monument, the Canyon's beauty and meaning are enigmas.



# Sierra Club Bulletin

MAY, 1966  
VOL. 51—No. 5

... TO EXPLORE, ENJOY, AND PROTECT THE NATION'S SCENIC RESOURCES...

FRONT COVER: Lower Granite Gorge of Grand Canyon in Lake Mead National Recreation Area. BACK COVER: Kaibab National Forest on the North Rim of Grand Canyon. The club has sponsored legislation to add both areas shown in these photographs to an enlarged Grand Canyon National Park (see page 8).

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THE SIERRA CLUB,\* founded in 1892, has devoted itself to the study and protection of national scenic resources, particularly those of mountain regions. Participation is invited in the program to enjoy and preserve wilderness, wildlife, forests, and streams.

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*Part of the editorial on the facing page may have been hard to decipher. Here it is again, this time using all 26 letters of the alphabet.*

"Beyond all plans and programs, true conservation is ultimately something of the mind—an ideal of men who cherish their past and believe in their future. Our civilization will be measured by its fidelity to this ideal as surely as by its art and poetry and system of justice. In our perpetual search for abundance, beauty, and order we manifest both our love for the land and our sense of responsibility toward future generations. . . . If, in our haste to 'progress,' the economics of ecology are disregarded by citizens and policy makers alike, the result will be an ugly America. We cannot afford an America where expedience tramples upon esthetics and development decisions are made with an eye only on the present."

—STEWART L. UDALL

## Other Arguments Against Dams in Grand Canyon

Bridge Canyon and Marble Gorge dams are not needed (and would not be used) to bring Arizona the 1.2 million acre-feet of water per year she is entitled to under a Supreme Court decision. All that is needed is waterworks between existing Lake Havasu and central Arizona, plus 500,000 kilowatts of power to operate pumps. Cheaper electricity is available from other sources.

The dams would waste water in an arid land where there is none to spare. They would waste enough water by evaporation to supply the municipal water needs of a city the size of Phoenix. And they would waste more through underground percolation into their reservoir basins.

Modern coal-fired plants are already producing power less expensively than the dams would—and with considerably lower water consumption (for cooling). A nuclear powerplant in New Jersey will produce power for 4 mills (compared with the dams' 5.3 mills) by 1969. The dams would not be generating for a decade. Experts predict that combined power-producing and water desalinization plants will generate power at half the cost of the dams' power long before the dams could pay for themselves.

If the dams could not pay for themselves, they certainly could not help to pay for the Central Arizona Project and the Lower Colorado River Basin Project. And that is their sole purpose. It would not be the first time that dams intended to pay for a project (through revenue from power sales) were a drain on the project instead.

If the Bureau of Reclamation had to pay taxes on power revenues and reason-

able interest on construction capital loaned it by the federal government, it would be evident that the dams had no economic justification whatever. The Bureau pays more than one percent *less* interest than the federal government itself pays when it borrows money. This difference between the interest rate the Bureau pays and the going rate constitutes a massive federal subsidy in disguise—a subsidy paid by taxpayers in all parts of the country for the exclusive benefit of a single region.

When the states of the Upper Basin utilize their share of water, there will not be enough flow in the Colorado River through Grand Canyon to operate the generators at full rated capacity.

Claimed recreational benefits are a sham. Lake Powell and Lake Mead, immediately above and below Grand Canyon, provide an abundance of reservoir recreation and serve the same population centers. Dams in the Canyon would preclude river running, the supreme recreational experience possible there.

Authorization of the dams would repeal existing laws protecting Grand Canyon National Park. The law provides that necessary reclamation projects may be installed in the park, but only "*whenever consistent with the primary purposes of said park.*" These are the primary purposes of the park as defined by law: "to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations." The dams are not reclamation projects—they put no water on the

thirsty land—much less *necessary* reclamation projects. And they are not consistent with the primary purposes of Grand Canyon National Park, as subsequent pages will show.

Efficient production of peaking power is not sufficient justification for the dams. Sections of the country that have no hydroelectric resources manage to fill their peak load requirements very nicely by other means.

The dams are not essential for the transportation of water to central Arizona, for the production of power, or for the production of dollars. They are "necessary" to the Bureau of Reclamation's empire-building ambitions, but there is no reason for the taxpayers to regard this "necessity" in the same light that the Bureau does.

Bridge Canyon and Marble Gorge dams are not necessary in *any* respect save possibly one—to remedy a deficiency of imagination and enterprise on the part of politicians representing Arizona and California in the Congress of the United States. After many years of bitter dispute, they made a deal at the Grand Canyon's expense. California's delegation sticks to it because it committed itself to do so; Arizona's delegation, because it does not trust the rest of the country to help it find a more acceptable way out of its water difficulties. This bankruptcy of statesmanship can cost us the Canyon. If that happens, citizens who keep their peace must share the blame with politicians who kept their promises to each other—and in so doing, killed a priceless part of our heritage.

—H.N.



*Reader's Digest* enlists in the

## Fight to Save Grand Canyon

RICHARD C. BRADLEY, professor of physics at Colorado College, wrote an article titled "Ruin for the Grand Canyon?" that appeared in the January-February issue of *Audubon* magazine. *The Reader's Digest* condensed Bradley's article in its April issue and committed itself to oppose the construction of Bridge Canyon and Marble Gorge hydroelectric dams on the mainstem of the Colorado River in Grand Canyon.

To dramatize its position and inform the public, the *Digest* sponsored a "background" press conference at the Canyon itself, flying scores of newsmen to the scene by chartered planes on March 30. Dozens of conservationists were also invited to attend, and some (including the club's Executive Director, David Brower, and its Southwest Representative, Jeff Ingram) were asked to assist with planning and arrangements. Hearing of the canyon conference, proponents of the dams invited the *Digest* to invite the participation of eight or ten of their big guns, including Congressman Morris Udall. The on-the-spot managers of the conference knew nothing of this development, and a hassle ensued. After some rather bitter talk about "fair play" and "the unobjective press," it was agreed that three spokesmen for the dams would participate on the panel: Congressman Udall, Northcutt Ely (representing Governor Brown of California), and a representative of Governor Goddard of Arizona, Clayton Niles.

[It seems to this observer that the dam proponents were clearly self-invited,

having invited the *Digest* to invite them. There is no reason, in the name of "fair play," why the *Digest* should provide a rostrum and an audience for speakers whose views are diametrically opposite to its own. Dam advocates are having their innings; 19 magazine writers were recently flown the length of the Colorado by Water for the West—which did not feel constrained to invite anyone along to present the conservationist position. Anti-dam sentiment within the government is being suppressed, while thousands of dollars of taxpayers' money are being spent to promote the dams. The devotion of dam apologists to "fair play" and "objectivity" is sporadic, at best.—H.N.]

Executive Director David Brower, the first panelist, read a telegram he had written to Interior Secretary Stewart Udall urging "that you direct all cognizant Interior agencies, and not just the Bureau of Reclamation, freely to inform the press, the Congress, and an independent study team, of the facts and interpretation of those facts pertinent to the Grand Canyon controversy. We have seen a National Park Service memo forbidding distribution of material critical of Bridge Canyon dam even though the Administration itself does not support that dam. The National Park Service memo contains a paragraph directing that the memo be destroyed once it has been read. . . ."

Brower was followed by the man he has often referred to as "Mr. Conservation": Dr. Ira Gabrielson, President of

the Wildlife Management Institute. Dr. Gabrielson made a moving appeal for the preservation not only of wildlife, but of wildlands as well.

Charles Callison, Assistant to the President of the National Audubon Society, called attention to the legislative problem with the brothers Udall of Arizona in key positions, with Arizona Senator Carl Hayden possessing vast power as Chairman of the Appropriations Committee, and with a majority of the House Interior Committee coming from reclamation states.

Dr. William Bradley, professor of geology at the University of Colorado, said that both damsites were questionable from a geological standpoint: that much water might be lost because of underground percolation at Marble Gorge, and that giant landslides in the area of the Bridge Canyon reservoir might cause a disaster similar to the one that occurred in Italy (where water displaced from a reservoir by a landslide poured over the dam causing thousands of deaths and tremendous property damage downstream).

Richard Bradley summarized his article, of which the following paragraph is perhaps the key: "Any invasion of our national sanctuaries, and particularly one as important as Grand Canyon, should be allowed only under the most extraordinary circumstances. It is not sufficient that the dams be merely useful; they must in some *real* sense be absolutely essential. And this is what makes their pending construction so

*Newsmen board two of lightplanes used for Canyon overflight and trip to Toroweap, shown at right.*

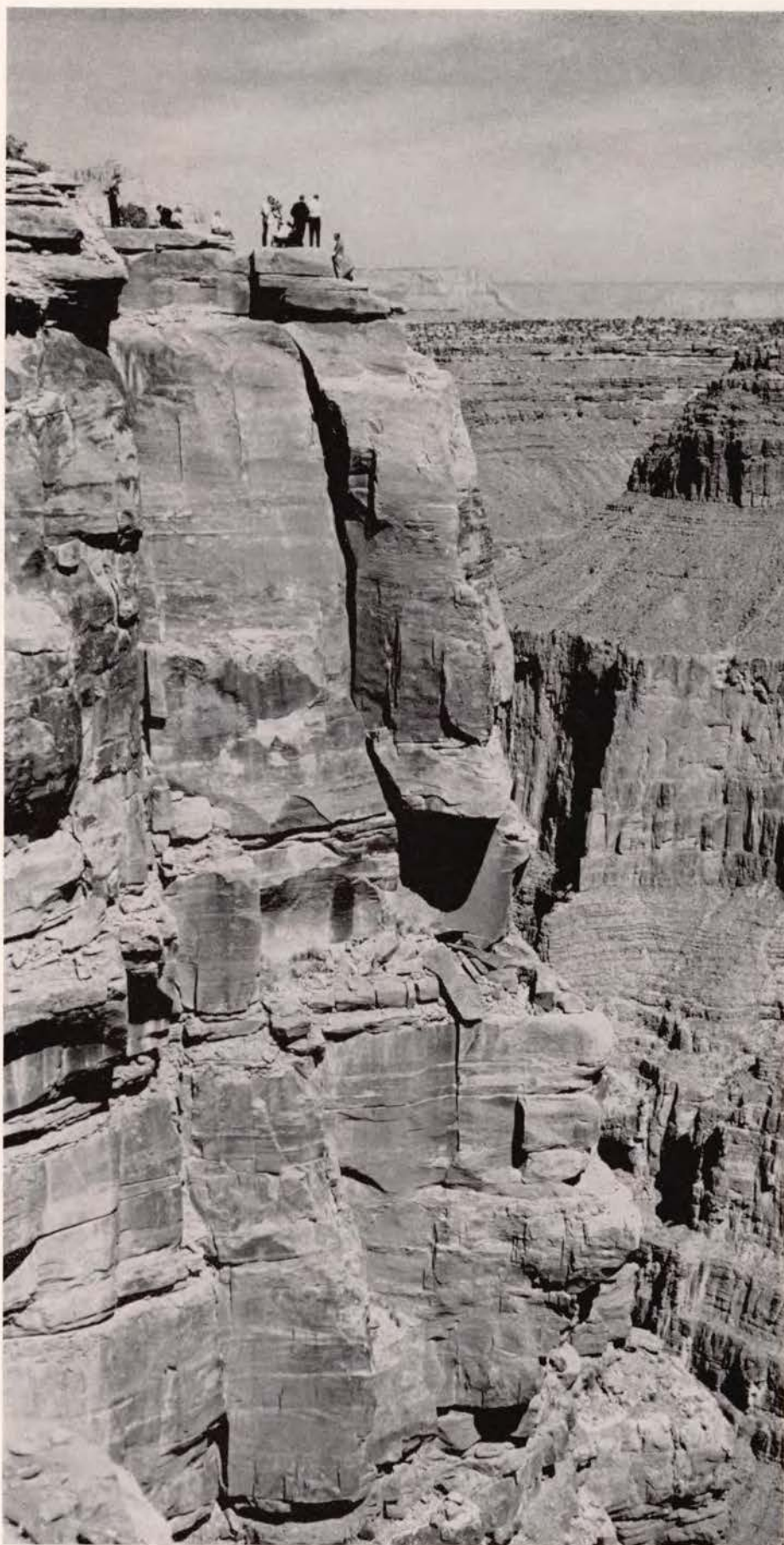
senseless. They not only are *not* essential; they will serve no purpose that cannot be served at least as well in a variety of other ways."

In the opinion of many present, the advocates of the dams did their cause little if any good. Congressman Udall stated flatly that there was no place where a motorist could reach the Canyon's rim and look down on the reservoir of Bridge Canyon dam. When several people in the audience called out "Toroweap," the Congressman had to retract his statement.

Northcutt Ely, special counsel of the Colorado River Board of California, asked what he thought was a rhetorical question: "How many of you, if you had the power, would do away with Glen Canyon dam?" When there was an enthusiastically affirmative response, Ely pronounced the judgment that his listeners had "characterized yourselves." Later, Ely admitted that he had never seen Glen Canyon either before or after the dam was built.

Clayton Niles welcomed visitors in behalf of the Governor of Arizona, then stressed the alleged recreational benefits of the reservoirs. He referred repeatedly to "the healthy and wealthy few" who are able to enjoy the undammed river. François Leydet, author of the club's *Time and the River Flowing: Grand Canyon*, spiked this argument. He told how three-week river trips through the Canyon had cost him \$135, and challenged anyone to vacation as cheaply in Phoenix.

Next morning Barry Goldwater made an unscheduled appearance, about which more will be said on the next page. After the Goldwater news conference, newsmen were flown in relays through the Canyon and to an airstrip in the national monument. From there, truck convoys carried them to Toroweap Point, a vertical half-mile above the river at a place where Bridge reservoir would be more than 250 feet deep. There, "Dock" Marston and other Canyon experts talked to newsmen about Grand Canyon and the harm that might come to it. ■





from Lee's Ferry . . .

## The Entire Grand Canyon

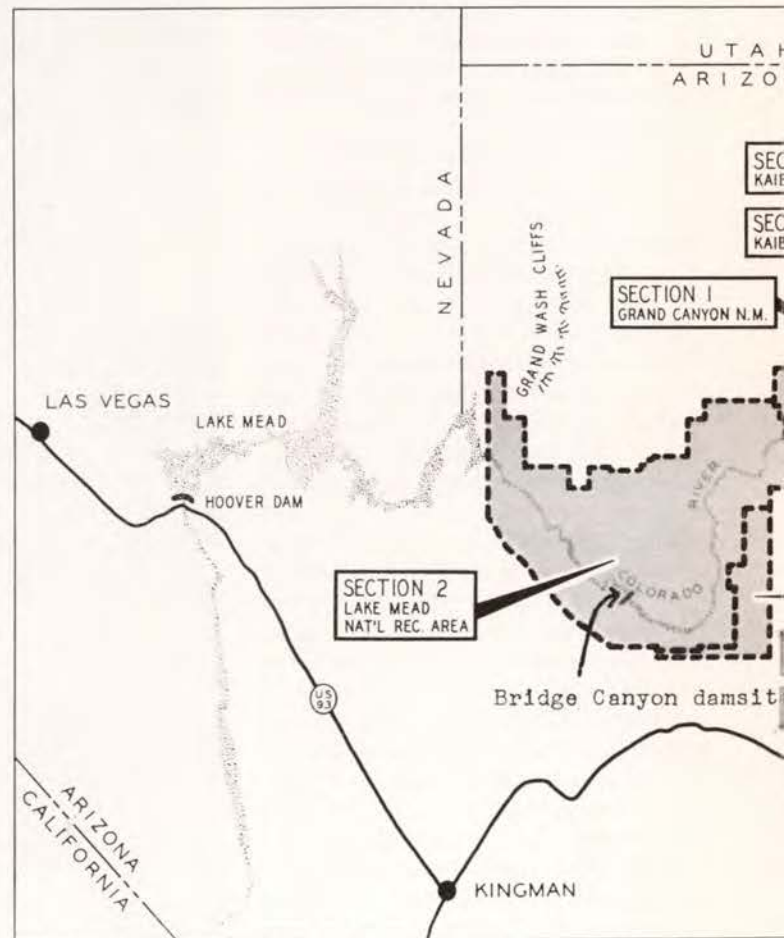
BARRY GOLDWATER'S STATEMENTS at the *Reader's Digest* conference were by no means entirely favorable to the dam-builders. He did advocate Bridge Canyon dam as "necessary" to the Central Arizona Project, which, in turn, he regards as essential to Arizona's continued economic and population growth. But he said (as he had earlier in a syndicated column) that he looks forward to the day when technology will make it unnecessary to dam any more free-flowing rivers. And he stated that he had never espoused Marble Gorge dam. Goldwater holds a particular affection for Marble Gorge. As he wrote in the March issue of *McCall's*, "Marble Canyon is exactly what a canyon should look like—the precipitous walls rise as high as 2,500 feet. . . ."

Where is Marble Gorge exactly? The Bureau of Reclamation would rather you didn't know. It is very careful never to mention the Grand Canyon in connection with either Bridge Canyon or Marble Gorge dam. Actually, both dams and both of their reservoirs are wholly contained within the Grand Canyon as it is usually defined. Bridge Canyon dam is named after a relatively minor side canyon of Lower Granite Gorge of the *Grand Canyon*; "Marble Canyon" dam is named after Marble Gorge (or "Marble Canyon") of the *Grand Canyon*. Both damsites are on the mainstem of the Colorado River within the Grand Canyon, but knowing that general awareness of the threat to the Grand Canyon itself would produce a crescendo of protest, the Bureau of Reclamation gave the dams unrevealing names that offer little clue to their location. On the map, Marble Gorge is the reach of river between Lee's Ferry and the point where the Colorado enters into the existing national park (heavy shading).

Which is it, "Marble Gorge" or "Marble Canyon?" "Gorge" implies that Marble Gorge is an integral part of the Grand Canyon (whose innermost chasm is called "gorge" throughout its length—Marble Gorge, Upper Granite Gorge, Middle Granite Gorge, and Lower Granite Gorge). "Canyon" implies that there is an entity known as "Marble Canyon" separate and distinct from the Grand Canyon, which simply isn't so—consult any topographic map for confirmation. There is authority for both usages. Older U.S. Geological Survey maps show "Marble Gorge," newer ones, "Marble Canyon." The Board of Geographic Names fairly recently sanctioned "canyon"—at the behest of the Bureau of Reclamation, perhaps? But the 1953 *Encyclopedia Britannica*, under the entry GRAND CANYON, reads that "it extends in a winding course from the head of Marble Gorge, near the northern boundary of Arizona,

to Grand Wash Cliffs, near the Nevada line, a distance of about 280 mi."

Goldwater, in his *McCall's* article, prefers "canyon" but rejects the dambuilders' contention that Marble is separate from the Grand Canyon: "Early the next morning found us at the mouth of Paria River [within a mile of Lee's Ferry], where Marble Canyon really starts and where, for my money, the Grand Canyon does also." Semantic confusion is compounded by Representative Morris Udall, who boasts an impressive record as a conservationist in Congress but who is committed to the dams. Udall insists upon using the term "Grand Canyon" only when he means the area within the existing Grand Canyon National Park. Anything outside the park boundaries, such as Bridge Canyon and Marble Gorge





... to Grand Wash Cliffs

# yon Must Be Protected

damsites, he refers to as being "outside the Grand Canyon." Asked about this, Udall answered with an appearance of disarming candor that he used such terminology because it strengthened his position. This is too easy; there are, after all, certain physical facts to be considered.

Questions of nomenclature aside, the obvious physical fact is that the Colorado River flows into a narrow gorge of its own making at Lee's Ferry and does not emerge from confinement until it breaks through Grand Wash Cliffs, 280 tortuous miles downstream. Time and the river flowing have produced a *single, unbroken entity*—an entity that most of the world knows by the name "Grand Canyon."

For several years, it has been Sierra Club policy that the entire Grand Canyon should be given national park status or



equivalent protection. Now, in a counteroffensive against the drive for destructive dams in the Canyon, this policy has been embodied in proposed legislation. Last month the club drafted a bill and it was introduced by Congressmen John Saylor, John Dingell, and Henry Reuss. This bill provides:

1. That Grand Canyon National Monument shall be made a part of Grand Canyon National Park. (Refer to map for areas covered by various sections of the bill.)

2. That the eastern portion of Lake Mead National Recreation Area be added to the national park.

3. That parts of the Hualpai Indian Reservation be added to the national park subject to the approval of the Hualpai Tribal Council.

4. That parts of the Grand Canyon National Game Reserve in the Kaibab National Forest be added to the park.

5. That parts of the Navajo Indian Reservation be added to the national park subject to the approval of the Navajo Tribal Council.

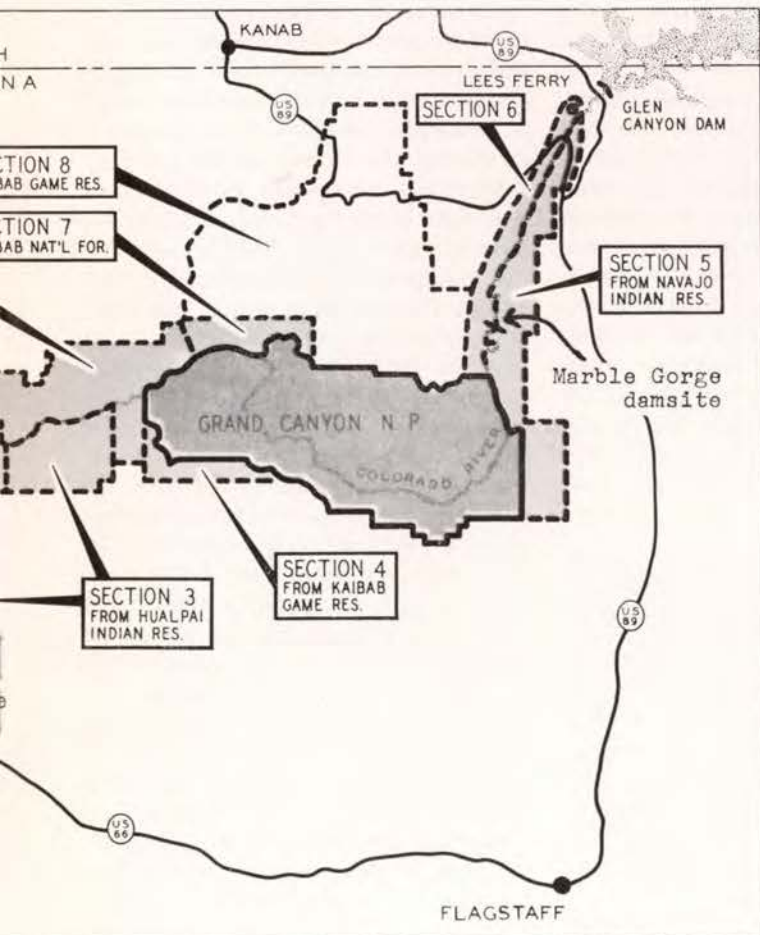
6. That the Secretary of the Interior be authorized and directed to select no less than 100,000 acres from lands in the public domain and within the Kaibab National Forest along the west rim of Marble Gorge for inclusion in the national park.

7. That parts of the Kaibab National Forest north of the west end of the existing national park be added to the enlarged national park.

8. That the President be authorized to add such lands north and west of the Colorado River within the Kaibab Game Reserve in the Kaibab National Forest, and related public domain lands east of the forest, as he finds adapted to national park purposes.

A final section of the bill provides that "the provisions of the Federal Power Act shall not apply to any portion of Grand Canyon National Park as hereby enlarged, and all existing withdrawals of the Federal Power Commission within the enlarged park are hereby vacated, and all withdrawals of the Bureau of Reclamation within the enlarged park, other than those related to Hoover Dam and Glen Canyon Dam, are hereby vacated."

Saylor's bill is H.R. 14176; Dingell's, H.R. 14177; and Reuss's, H.R. 14211. The three Congressmen deserve the commendation and support of everyone who believes that the entire Grand Canyon, not a mere fraction of it, should be "preserved unimpaired for the enjoyment of future generations." ■





Upstream from the existing national park,

## Marble Gorge Is the Focal

*Above: The Colorado River at Lee's Ferry, where Marble Gorge of the Grand Canyon begins. Right: Navajo Bridge, five miles downstream, where Marble Gorge is already 500 feet deep. Below: Vasey's Paradise, 32 miles below Lee's Ferry (Joe Munroe photo). Marble Gorge dam would back water into the last part of Glen Canyon where the river still runs free. It would flood the site of Lee's Ferry (which, ironically, was founded by John D. Lee, grandfather of the Udalls). Marble's reservoir would be 55 feet deep at Navajo Bridge and would drown Vasey's Paradise in 275 feet of water.*



EVEN IF IT WERE NOT an integral part of Grand Canyon, and it most assuredly is, Marble Gorge would deserve the protection of national park status in its own right. If it were in another nation, another state, or even another part of Arizona, it would surely be protected as a park. But Marble Gorge happens to be upstaged by one of the very few physical phenomena that *could* upstage it: the stupendous Granite Gorges of Grand Canyon, which, in actuality, are the continuation of Marble Gorge downstream.

Advocates of Marble Gorge dam often argue that the gorge is not part of the Grand Canyon. As we have seen, this is patently false. They tend to argue also that any area that has not been dedicated for permanent preservation does

not merit protection. It would make as much sense to say that nobody who is not President of the United States deserves to become President. That Marble Gorge does not enjoy protection now is an anomaly that can and should be rectified at the earliest possible moment.

Marble Gorge is the focal point of the battle over the Grand Canyon for several reasons. Superficially, a dam in Marble appears less objectionable than Bridge Canyon dam, about 200 miles downstream in Lower Granite Gorge. And the Bureau of the Budget, which reflects the Administration's views on proposed legislation, has recommended that Bridge Canyon dam be deferred but has acceded to Marble Gorge dam. Appearing to be the point where defenders of the Grand Canyon have the least airtight case, Marble is likely to bear the brunt of the dambuilders' assault. If defenders can beat off the attack on Marble, they can probably defeat Bridge Canyon dam too; if Marble is lost, the Grand Canyon is doomed from end to end. An undammed Marble Gorge is essential to the integrity of the entire Canyon.

Why is Marble vital? First, for its own sake. A reservoir would flood sandbars, beaches, dunes, and talus slopes without which there would be no wild-life habitat and no campsites. Beauty spots such as Redwall Cavern and Vasey's Paradise would be drowned.

*Marble Gorge at point five miles above damsite. Floor of Redwall Cavern, visible at bend in river, will be 280 feet beneath surface if dam is built.*

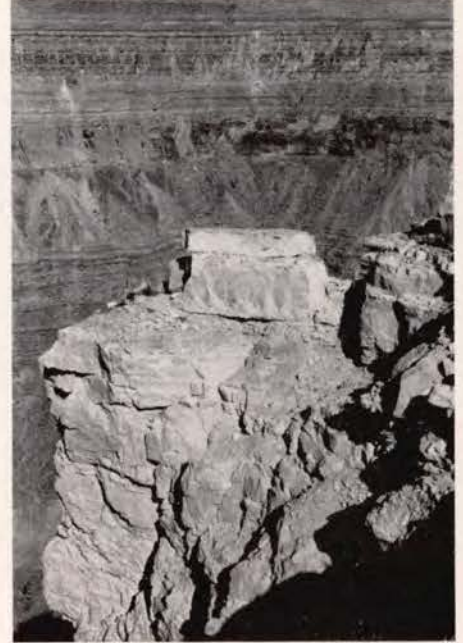


magnificent but unprotected,

## Point of the Battle Over the Grand Canyon



*Left: damsite near mile 39; light colored tailings mark spot where test borings were drilled. (Joe Munroe photo.) Right: rim of gorge above damsite.*



Dambuilders' access roads would mar splendid scenery, as would power transmission lines. The reservoir would be unsuitable for recreation: its vertical walls would offer hardly so much as a handhold and few escape routes to overturned boatmen, and would echo and re-echo to the noise of motorboat engines. A dam in Marble Gorge would extinguish for all time one of the great adventures still easily available to modern man: the river trip on an untamed Colorado from one end of Grand Canyon to the other.

Marble Gorge is vital also because a dam there would destroy park values in the existing Grand Canyon National Park—which, by law, are to be preserved "unimpaired for the enjoyment of future generations." Dambuilders try to have it both ways: they insist that park values cannot be impaired by a dam upstream from the park, and they argue in the same breath that the damage has already been done by Glen Canyon Dam (which, of course, is still further upstream). It is true that Glen Canyon Dam has compromised the national park by regimenting the Colorado River, which is the most interesting and important of the "natural objects" that the park was established to preserve in a natural state. The river draws vitality from tributaries downstream from Glen, however; it is still a living river. A dam in Marble Gorge would complete the

regimentation that Glen began, making the Colorado a captive monarch.

It takes the alternating high and low water stages of a living river to build sandbars, beaches, and dunes faster than they are degraded by wind and water erosion. Make no mistake about it: a dam in Marble Gorge would destroy wildlife habitat (and campsites) not only in its reservoir area, but in the extremely narrow life zones along the riverbanks in Grand Canyon National Park, downstream. Other things being equal, clear-flowing streams can pick up and transport more sediment than streams that are already heavy laden. Clear water discharged by Marble Gorge dam would be incapable of rebuilding riverside habitat, but would have a

*Below: Marble Gorge near mile 42, just downriver from damsite and just upriver from President Harding Rapids. From here Marble Gorge winds its way south-erly, in direction of photo, into the existing national park 10 river miles down-stream. Ridge on horizon at right forms boundary between Kaibab National Forest and Grand Canyon National Park. Here, outside the existing park, seldom visited and unprotected, the Grand Canyon builds toward its stunning climax.*



heightened capacity to erode and destroy it.

Many of the national park's greatest attractions are only accessible from the river, and whether physically damaged or not, they could hardly be said to be "unimpaired for the enjoyment of future generations" if they were rendered inaccessible. How would Marble Gorge dam affect river travel? The Bureau of Reclamation says it will make provision to get boats down to the river below the dam. But how much water will there be when boats get there? "It is anticipated," says the Bureau, "that a minimum flow of at least 1,000 cubic feet per second will be maintained below Marble Canyon Dam through the Grand Canyon." In the Colorado's channel, 1,000 cfs is a miserably inadequate trickle that would preclude boating. The dam would be used for the generation of peaking power, which means that water would be held back in periods of slack demand and would be released through turbines when demand increased. The volume of water flowing below the dam would be subject to abrupt cut-offs and sudden surges. This would not be a mere inconvenience to any boatmen camping along the river; it would be a serious hazard.

Flash floods wash huge boulders down to the Colorado from every side canyon, tending to block the channel. A living

river can flush out these obstacles at high water stages; a tamed river cannot. One effect of Marble Gorge dam would be to create a whole series of "natural" dams downstream. Instead of floating down a free-flowing river with rapids that can be safely negotiated, boatmen would be confronted with long portages around rapids too cantankerous to run.

All in all, it seems highly probable that river running below Marble Gorge dam would either be totally impractical or literally impossible. This would be a crippling blow to park values not only in the enlarged Grand Canyon National Park advocated by the club, but in the existing national park that by statute is supposed to be permanently preserved in its natural state.

Finally, the battle for Marble Gorge is vital because a dam there would pave the way for a cherished dream of the Bureau of Reclamation: the Kanab diversion. This is a scheme to divert 90 percent of the Colorado's flow from a reservoir at Marble Gorge through a 45-mile tunnel to a hydroelectric plant at Kanab Creek. If this were done, material excavated from the tunnel would be dumped into Grand Canyon from the tunnel ends and from adits, or spur tunnels. As the plans are drawn, excavated material would be dumped from one or more adits in the national park itself. And what would remain of the river in

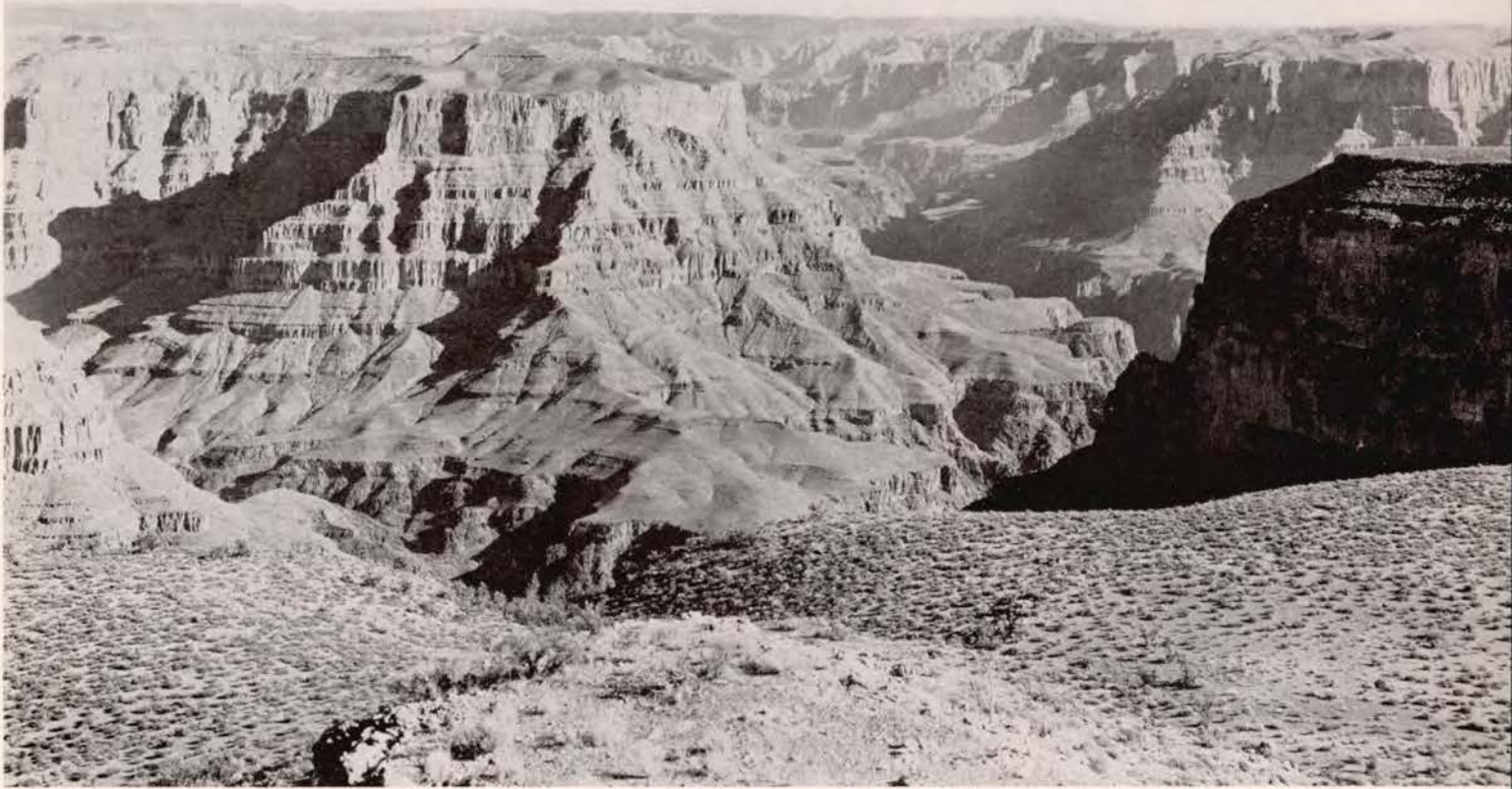
the Grand Canyon that it created? From its very start at Lee's Ferry to Marble Gorge dam, it would be slack water. From Marble Gorge dam to Kanab Creek, all the way through the national park and beyond, only 10 percent of its volume would flow through the channel it made for itself and 90 percent would be underground. Kanab Creek is at the head of Bridge Canyon reservoir, and Bridge Canyon damsite is just above the head of Lake Mead. The Colorado would be slack water for virtually all of its 280-mile course through Grand Canyon except for 104 miles between Marble Gorge and Kanab Creek, where the Bureau of Reclamation would magnanimously allow a pitiful 10 percent of the river to provide a feeble caricature of the mighty torrent that designed Grand Canyon and is still perfecting it.

The Bureau isn't talking about the Kanab diversion much these days, but we can be sure it hasn't abandoned hope for it. If Marble Gorge dam is authorized, the Bureau will be riding high and conservation forces will be demoralized and on the defensive. Under those circumstances, the Bureau could be relied upon to push for the Kanab diversion with all the power it can muster—which is excessive. Marble Gorge dam would be a calamity, and would lead to catastrophe for one of nature's noblest works. ■

*Boating parties in Marble Gorge of the Grand Canyon. River running, one of the great experiences open to modern man, will be a thing of the past if Marble Gorge dam is built. Upstream, its reservoir would drown campsites and wildlife habitat. Downstream, the river would be incapable of rebuilding habitat as fast as it eroded away.*

*—Joe Munroe photos.*





*Lower Granite Gorge of Grand Canyon in vicinity of Bridge Canyon damsite. Dan Jones photo.*

## Bridge Canyon Dam and the Public's Right to Know

BRIDGE CANYON DAM would back water all the way through Grand Canyon National Monument and 13 miles into Grand Canyon National Park. In so doing, it would violate the principle of park preservation and jeopardize the entire National Park System. Almost everything that has been said against Marble Gorge dam can be said with equal or even greater force against Bridge Canyon dam. If Reclamation can win this test of strength, it is hard to see how it could be stopped anywhere. Is there a nature sanctuary anywhere with more defenders than Grand Canyon National Park?

In May 1965, it looked as though the Bridge Canyon project might be quietly buried. The influential Bureau of the Budget, which reflects Administration policies and priorities, recommended that Bridge Canyon dam be deferred:

"The Bureau of the Budget does not believe it necessary to authorize both Bridge Canyon and Marble Canyon Dams at this time. Instead, we believe that the Bridge Canyon Dam should be deferred for later consideration. The President has emphasized on many occasions the importance of preserving and enhancing the natural beauty of this Nation, notably in 'A Message on Natural Beauty of Our Country' transmitted to the Congress on February 8, 1965.

"Bridge Canyon Dam, as proposed in both bills, would be authorized at the normal high water surface elevation of 1,866 feet—designed and located to produce a maximum amount of power. At this elevation the reservoir would extend through the canyon section of the Grand Canyon National Monument and for a 13-mile stretch of the Grand Canyon National Park.

"... there is no disagreement that the dam would alter the wilderness character of this part of the river. Deferral of a decision on Bridge Canyon Dam would enable the Federal Government to reevaluate the scenic considerations involved—preferably by a group of outstanding citizens—and would make it possible to consider the dam from the standpoint of the need for additional power as well as revenues desired for the Lower Colorado River Basin account."

Budget Bureau "recommendations" are usually decisive. But not in this case, unfortunately. Bridge Canyon dam was soft-pedaled slightly by the Bureau of Reclamation and Department of the Interior, but the dam was never eliminated from proposed legislation. It has long been evident that Interior is muzzling anti-dam experts in government service while spending taxpayers' money freely to propagandize taxpayers in be-

Photo pairs on this page were taken by Commissioner of Reclamation Floyd E. Dominy. One photo of each pair has been doctored to show how scene would look if Bridge Canyon dam were built. "Before and after" shots were reproduced in record of hearings on Lower Colorado River Basin Project last August, purporting to show how innocuous a dam would be. Pictures prove the opposite. Talus slopes, dunes, beaches, and sandbars would all be drowned, wiping out plantlife, animal habitat, and campsites. Animals living at higher elevations would be denied access to river water except at mouths of side canyons. Sheer walls of reservoir would offer few escape routes to boatmen in trouble. Top photo pair was taken near mouth of Havasu Creek; lower pair, near Fern Glen Rapids.



half of both dams. When magazine articles critical of the dams are submitted in manuscript for checking by government agencies, heavy pressure is applied to kill them before publication. Apparently, the dam proponents are not confident enough of their case to welcome a full and free airing of both sides. This situation moved Executive Director David Brower to dispatch the following telegram from the *Reader's Digest* conference:

GRAND CANYON NATIONAL PARK  
MARCH 29, 1966

THE HONORABLE STEWART L. UDALL  
SECRETARY OF THE INTERIOR  
WASHINGTON, D.C.

IN VIEW OF THE BUREAU OF THE BUDGET'S ELIMINATION OR DEFERRAL OF THE BRIDGE CANYON DAM PENDING FURTHER

STUDY OF ITS IMPACT ON A SCENIC RESOURCE OF INTERNATIONAL SIGNIFICANCE, WE BELIEVE THAT THE PUBLIC HAS A RIGHT TO INSIST THAT YOU DIRECT ALL COGNIZANT INTERIOR AGENCIES, AND NOT JUST THE BUREAU OF RECLAMATION, FREELY TO INFORM THE PRESS, THE CONGRESS, AND AN INDEPENDENT STUDY TEAM, OF THE FACTS AND INTERPRETATION OF THOSE FACTS PERTINENT TO THE GRAND CANYON CONTROVERSY.

WE HAVE SEEN A NATIONAL PARK SERVICE MEMO FORBIDDING DISTRIBUTION OF MATERIAL CRITICAL OF BRIDGE CANYON DAM EVEN THOUGH THE ADMINISTRATION ITSELF DOES NOT SUPPORT THAT DAM. THE NATIONAL PARK SERVICE MEMO CONTAINS A PARAGRAPH DIRECTING THAT THE MEMO BE DESTROYED ONCE IT HAS BEEN READ. WE CAN TOO EASILY

INFER THAT SIMILAR INSTRUCTIONS GOVERN THE BUREAU OF OUTDOOR RECREATION, THE GEOLOGICAL SURVEY, FISH AND WILDLIFE SERVICE, BUREAU OF MINES, AND BUREAU OF INDIAN AFFAIRS.

WE ARE CONFIDENT THAT YOU YOURSELF ARE UNAWARE OF THIS DENIAL OF THE PUBLIC'S RIGHT TO KNOW. WE URGE YOU TO INFORM THIS MEETING OF NATIONAL PRESS REPRESENTATIVES, CONSERVATIONISTS, AND OTHER INTERESTED LAY CITIZENS ASSEMBLED FROM MANY STATES, BEFORE THE MEETING DISPERSES TOMORROW, WHAT STEPS YOU CAN TAKE TO BRING ABOUT FULL DISCLOSURE OF INFORMATION IMPORTANT TO THE CONTROVERSY OVER THE GRAND CANYON DAMS AND THEIR GRAVE THREAT TO THE NATIONAL PARK SYSTEM.

Reaction as of late April: none.



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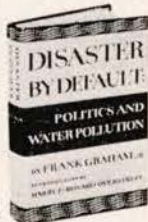
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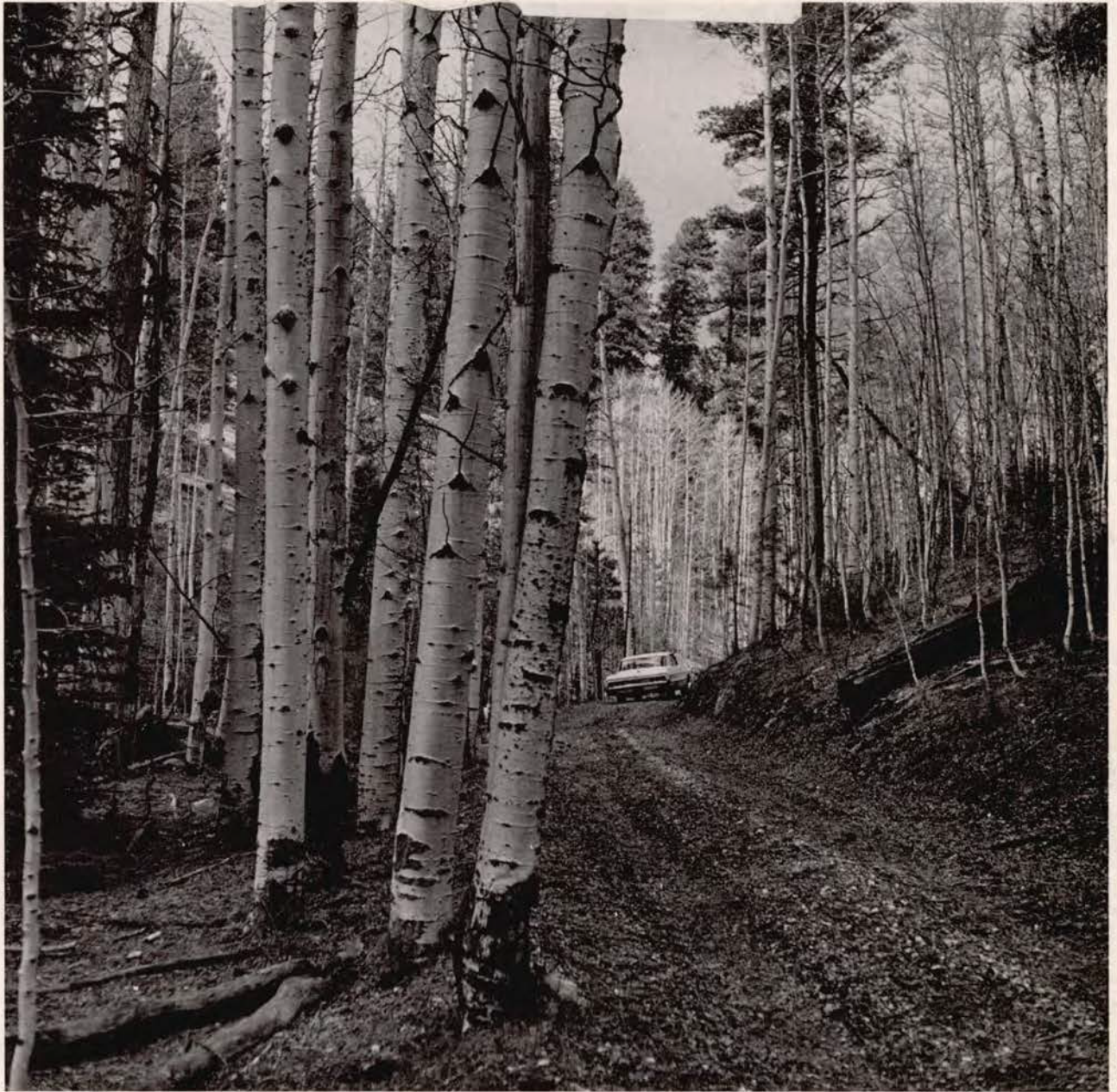


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*Kaibab National Forest, in an area the club believes should be added to Grand Canyon National Park.*

The big problem with Reclamation as with the Army Engineers and to a lesser extent also with other agencies is that they are the ones who do the planning, who carry out the plan, and who are the final judges as to whether it is a good plan. . . . I have no illusions but that we are in for a hell of a scrap on this southwest water project. If we lose in the effort to protect the Grand Canyon National Park, I would begin to wonder if we could ever protect any park from blatant commercialism of any kind.

—IRA N. GABRIELSON