

# Glen Canyon Dam Environmental Impact Statement

## Volume II

### Scoping Letters from Organizations

September 1990

Prepared by the Colorado River Studies Office  
Bureau of Reclamation

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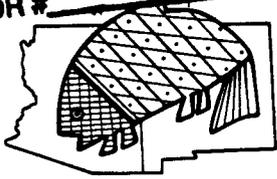
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Arizona-New Mexico Chapter  
LDR # 20410

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March 26, 1990

American Fisheries Society

Bureau of Reclamation  
Upper Colorado Regional Office  
P.O. Box 11568  
Salt Lake City, Utah 84147

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Date	Initials	To
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Subs. Corresp. _____		
Date Ans'd _____		

Dear Sir/Madam:

Thank you for the opportunity to comment on your Glen Canyon Dam Environmental Impact Statement process. Please accept the attached statement for incorporation into your initial scoping process. The American Fisheries Society is committed to enlightened management of aquatic resources and is pleased to have this opportunity to address the myriad of issues surrounding Glen Canyon Dam operations. As I am one of the members of the environmental concerns committee, please add my name and address to your mailing list. We look forward to this analysis process and intend to contribute to the fullest extent possible. Thank you.

Sincerely,

*Richard D. Uberuaga*

Richard D. Uberuaga  
Arizona-New Mexico Chapter  
American Fisheries Society  
9239 N.51st. Lane  
Glendale, Arizona 85302

c.c. National AFS  
Sen. Bill Bradley  
Sen. George Mitchell

STATEMENT BY THE ARIZONA - NEW MEXICO CHAPTER  
OF THE AMERICAN FISHERIES SOCIETY  
ENVIRONMENTAL CONCERNS COMMITTEE

Regarding  
THE DEPARTMENT OF THE INTERIOR - BUREAU OF RECLAMATION  
GLEN CANYON DAM OPERATIONS, PUBLIC SCOPING MEETING, MARCH 15, 1990

The American Fisheries Society, founded in 1870, is the oldest and largest professional society representing fisheries scientists. The AFS promotes scientific research and enlightened management of aquatic resources for optimum use and enjoyment by the public.

THE INTENT OF THE NATIONAL ENVIRONMENTAL POLICY ACT SCOPING PROCESS IS TO PROVIDE PUBLIC INPUT ON WHAT ISSUES SHOULD BE ADDRESSED DURING THE ANALYSIS OF ENVIRONMENTAL EFFECTS OF FEDERAL ACTIONS.

The natural resources below Glen Canyon are "WORLD CLASS". No one will dispute that. The Bureau of Reclamation has a statutory obligation to protect these resources. Now the Bureau is presented with the opportunity to balance energy and environment needs.

THE PRINCIPAL, OVERRIDING ISSUE AT HAND WITH REGARD TO GLEN CANYON DAM OPERATIONS IS ONE OF FLOWS. THE AMERICAN FISHERIES SOCIETY HAS LONG RECOGNIZED THAT STREAMFLOW REGULATION CAN BOTH POSITIVELY AND NEGATIVELY AFFECT FISHERY HABITAT AND FISH POPULATIONS.

At issue is the existing flow operating criteria. The current minimum flows below Glen Canyon Dam are simply not adequate to protect not only the fishery resource, but all downstream resources.

THE GENERATION AND SALE OF ELECTRICAL POWER ARE INCIDENTAL TO THE SEVERAL DECLARED PURPOSES OF DAM OPERATION. YET, CURRENT OPERATIONS MAXIMIZE THE AMOUNT AND MARKETABILITY OF POWER. THEY ALSO MAXIMIZE DETRIMENTAL IMPACTS TO DOWNSTREAM RESOURCES.

At issue are current inadequate low flows which strand fish and reduce spawning success.

AT ISSUE ARE EXTREME DAILY AND SEASONAL FLOW FLUCTUATIONS INHIBITING ANGLER ACCESS AND THREATENING PUBLIC SAFETY.

At issue are impacts of extremely fluctuating flows to all resources, such as sediment, beaches, river-running, endangered species, and so on.

AMERICAN FISHERIES SOCIETY TESTIMONY (CONT.)

THE AMERICAN FISHERIES SOCIETY FULLY BELIEVES THAT THERE HAS NOT BEEN ADEQUATE TIME ALLOWED FOR A COMPLETE, THOROUGH ENVIRONMENTAL ANALYSIS OF GLEN CANYON DAM OPERATIONS. OUR REVIEW, TO DATE, SHOWS THAT THE LEGAL REQUIREMENTS OF THE FISH AND WILDLIFE COORDINATION ACT HAVE NOT, AND WILL NOT, BE MET.

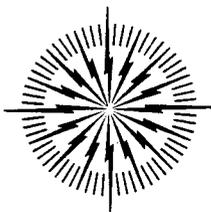
We therefore urge, with all sincerity, that the Bureau of Reclamation extend the public comment deadline for this scoping period. We also urge that the Bureau adopt higher interim minimum study flows as an immediate protective measure for the documented fishery losses that are now occurring.

FURTHERMORE, THE AMERICAN FISHERIES SOCIETY HEREBY REQUESTS THE BUREAU OF RECLAMATION TO ELIMINATE ANY CONSIDERATION OF A RE-REGULATION DAM BELOW GLEN CANYON IN THE ENVIRONMENTAL ANALYSIS. THIS STRUCTURAL CONSIDERATION IS NOT A POTENTIAL SOLUTION TO THE REAL AND PERCEIVED IMPACTS NOW OCCURRING.

THANK YOU

RICHARD D. UBERUAGA  
ENVIRONMENTAL CONCERNS COMMITTEE  
AZ.-N.M. CHAPTER  
AMERICAN FISHERIES SOCIETY

CONT. # 90-7569  
FLDR # 50090



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# AMERICAN PUBLIC POWER ASSOCIATION

2301 M STREET NW WASHINGTON DC 20037 • 202/467-2900

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## STATEMENT OF THE AMERICAN PUBLIC POWER ASSOCIATION

Presented to the  
Bureau of Reclamation  
Public Scoping Session on the  
GLEN CANYON DAM ENVIRONMENTAL IMPACT STATEMENT PROCESS

March 27, 1990

The American Public Power Association and its members have a significant interest in the operation of Glen Canyon Dam and the outcome of the current Environmental Impact Statement process. APPA supports the timely completion of a comprehensive EIS that fully evaluates the impact of current operations, determines the need for mitigation or enhancement efforts, assesses all reasonable actions and their environmental and economic affect, and considers the proper allocations of costs of any proposed action.

APPA is the national service organization representing more than 1,750 locally controlled public power systems. Approximately 500 of these not-for-profit, consumer-owned utilities meet all or a portion of their bulk power needs through the purchase of power generated at federal multipurpose water projects. Federal power customers repay in full -- and with interest -- the federal investment in hydropower facilities. This financial commitment made the construction of these multipurpose water projects economically feasible. In the case of Glen Canyon Dam, more than 91 percent of the total capital costs of the project are repaid by federal power customers.

In return for this financial commitment -- and in accordance with numerous statutes -- federal power customers receive a first right to purchase the power generated at federal multipurpose water projects. This relationship provides predominately small consumer-owned utilities access to a low-cost reliable resource. In providing this first right of purchase to consumer-owned utilities, Congress sought to protect these small systems from anti-competitive efforts of large private power companies, encourage diversity in the electric utility industry, and protect consumers from excessive private power company electric rates by fostering "yardstick" competition in which the rates of private and public utilities are compared.

Federal power customers recognize that current economic and societal objectives may necessitate changes in the operation of federal multipurpose water projects and are willing to work with all interested parties to resolve the resulting conflicts. However, federal power customers believe that any

such effort -- including the Glen Canyon Environmental Impact Statement process -- must:

- o be pursued in an open and deliberative fashion;
- o recognize and internalize the economic, social and environmental impacts of any proposed change;
- o achieve a cost-effective, balanced solution that is based on scientific evidence; and
- o ensure that cost responsibility tracks the allocation of benefits.

### Economic Benefits of Current Glen Canyon Dam Operations

Nationwide, roughly 80 percent of all public power systems serve communities with populations of less than 10,000. This demographic profile holds true for the public power customers of the Colorado River Storage Project (CRSP). CRSP power purchases represent a low-cost resource that assists these systems -- which operate exclusively on a not-for-profit basis -- in providing reasonably priced electricity to their communities. The economic benefits of federal power flow directly to the customers they serve.

There is no denying that federally generated power is sold at an attractive price. This price, however, is a function of the fact that these facilities were constructed decades ago at a time of low interest rates and that these projects do not require expensive fuels to operate. Hydroelectric projects owned by private electric utilities possess these same economic advantages. Congress directed that this low-cost federal resource be sold to consumer-owned utilities in order to prevent private companies from reaping profits from this public resource and to promote competition in the electric utility industry through price comparison yardstick competition.

While the price of power generated at federal facilities is attractive, it is not subsidized. Federal power rates are set to recover in full and with interest the capital investment in power facilities. In addition, federal power customers assist in the repayment of other, non-power features. For example, CRSP customers will repay five times the cost of the federal investment in power facilities, primarily due to the repayment assistance provided for irrigation projects. The inaccurate perception that federal power rates are subsidized is due, in part, to the failure of some to compare federal power, and the price of that power, with similar commodities. Frequently, these rate comparisons equate federal power wholesale rates with retail rates of other utilities. Similarly, these studies often compare federal power with other resources that are not comparable. When the composite wholesale rates -- and retail rates -- of federal power customers and neighboring utilities are compared, it becomes clear that the rate differential is nowhere near what some suggest.

CRSP power customers meet from 5 to 80 percent of their bulk power requirements with CRSP power. The remaining bulk power needs are met through self generation or purchases from other utilities. CRSP power represents the low-cost resource of these customers energy mix. However, irrespective of the final action taken at Glen Canyon Dam, CRSP power customers will pay increasingly more for this resource. Currently, the Western Area Power Administration has pending a 45 percent rate increase for CRSP. A comparison of retail electric rates of CRSP customers and other utilities in the region suggests that further price increases or reductions in the availability of CRSP power could seriously threaten the competitiveness of these utilities' electric rates and the economic health of the communities they serve.

Glen Canyon Dam is the primary component of the Colorado River Storage Project. Roughly 70 percent of the energy generated in the CRSP system is produced at Glen Canyon Dam. Thus, major alterations in the generating capacity or dispatch characteristics of Glen Canyon could substantially reduce total CRSP power sales and force CRSP power customers to secure other, more expensive firm power supplies.

Some advocates of altering operations at Glen Canyon Dam suggest that this action would have little impact on power customers, since the same amount of energy would be generated -- just at different times of day. Unfortunately, it simply is not true that all kilowatt hours are alike. Glen Canyon Dam is currently operated as a "peaking" unit and peaking energy is more valuable than off-peak energy. Consequently, changing the dispatch pattern of project operations will also reduce the economic value of the resource and force costly power purchases by CRSP customers. In addition, in order to meet federal repayment obligations -- including power irrigation subsidies -- federal power customers could end up paying the same or higher rates for a less valuable resource.

Advocates of "converting" Glen Canyon from a peaking to a baseload plant have suggested that the lost peaking capacity can be made up through conservation measures. APPA strongly supports energy conservation efforts, and believes energy conservation should be an integral part of the power supply planning of federal power customers. Additional kilowatts can be saved through cost-effective conservation investments -- and these measures should be aggressively pursued by federal power customers. However, it is unrealistic to believe that conservation alone can offset the most radical changes in Glen Canyon Dam operations.

The Glen Canyon Environmental Impact Statement should recognize the economic value of current project operations and evaluate the economic impact of all proposed changes. Only cost-effective options should be pursued.

### Current Glen Canyon Operations Provide Environmental Benefits

While the Glen Canyon Dam Environmental Impact Statement process has concentrated on potential adverse environmental impacts of current project operations and potential environmental benefits that could be gained through

changes in project operations, it must be recognized that the existence of Glen Canyon Dam, and its current operations, also provide environmental benefits.

Today, advocates of certain interests and values -- notably river runners and trout fisherman -- are calling for changes in project operation in order to maximize those values. It should be recognized, however, that prior to construction of Glen Canyon Dam, the stretch of the Colorado River below the dam could not sustain trout nor could it be run by any but the most fearless rafters. Clearly these were not values that existed prior to construction of Glen Canyon Dam. Thus, any change in project operations designed to promote these values (and others that similarly did not exist prior to construction of the facility) must be considered enhancement and not mitigation activities. These enhancement measures should be fully reimbursable by the direct beneficiaries and not subsidized through increased power costs.

In addition to providing opportunities for fish and wildlife management and recreational activities, the current operations of Glen Canyon Dam provide environmental benefits through the displacement of thermal generation and the associated emissions. Absent the availability of Glen Canyon Dam power, CRSP power customers would meet their peak demand through other, most likely coal-fired, generating resources. In addition to these firm power sales that displace thermal generation, non-firm energy generated at Glen Canyon Dam is sold on the "spot market" as economy sales, and these sales similarly reduce the use of thermal generating facilities. The environmental benefits of these displaced emissions is increased by the fact that these emissions are displaced at precisely the time of day (peak hours) when air pollution problems are most severe.

The Glen Canyon Environmental Impact Statement process should recognize the environmental benefits of the current operating regime and the potential negative environmental consequences of changing that regime.

#### Current Operations Should Be Maintained During EIS

Any change in the operations of Glen Canyon Dam must be grounded on a full and complete understanding of the environmental impact of current operations, as well as the impact of any alternative. This cannot be achieved if the baseline is altered during the study period. The objectivity and accuracy of the study is dependent upon maintenance of current operating standards throughout the EIS process.

Further, altering minimum or maximum flow requirements before completion of the EIS presupposes that changes in release patterns are necessary and justified and that such changes would create the desired results. This supposition is premature and speculative. The need for and effect of any change in minimum release requirements cannot be determined until after completion of the EIS.

It is possible that the EIS will conclude that there is a correlation between the current Glen Canyon operating regime and environmental degradation in the Grand Canyon and determine that increased minimum flows or adjustments

in the ramp rate are necessary to protect the environmental values of the Grand Canyon. If this conclusion is reached, federal power customers are willing to consider reasonable adjustments in current operations. However, until that determination can be made, based on a full and complete review, no change in project operations should occur. Requiring alternative flow requirements during the EIS would short-circuit the EIS process and jeopardize its validity.

### The EIS Must Consider All Options

To date, public attention has focused primarily on adjusting the release pattern at Glen Canyon Dam as the appropriate means of addressing all of the alleged environmental consequences of current operations. APPA believes that the credibility and accuracy of the EIS depends upon a full and complete consideration of all options.

It is possible that various low-cost options, taken independently or collectively, could ameliorate many of the concerns that have driven this process. For instance, limiting the sportfishing season to exclude periods in which the trout and chub spawn could dramatically increase fish populations at little cost. Similarly, limiting rafting trips in the Grand Canyon may be an appropriate policy option that is deserving of consideration.

Various engineering options -- such as dredging sandbars which now hinder fishing access or construction of a small reregulation dam -- should also be considered. Finally, it is essential that, as required by law, the EIS include the "no change" option in the study.

### The Costs of Any Change Should Be Equitably Borne

As part of the EIS process various parties are seeking to increase the value of a particular resource: trout fishing, river rafting, scenic beauty. Certain changes -- if any are justified -- would be properly borne by the beneficiaries of existing project purposes: water supply, irrigation, and power production. For instance, these beneficiaries should likely share in the cost of any effort needed to protect endangered species.

However, existing project beneficiaries should not be expected nor asked to write a blank check. These beneficiaries do not have a responsibility to finance enhancement efforts; nor are they financially responsible for efforts to advance interests that are not endemic to the resource or for which "self-financing" is feasible. Sport fisherman, rafters, flat water recreationists, and others should share in the financial responsibility of steps taken to promote their interests and maintain this precious resource. Finally, if the EIS justifies changing the operations of Glen Canyon Dam in a manner that reduces the value or availability of hydropower generation, then consideration must be given to appropriate cost-sharing of the benefits foregone, including the cost of replacement power.

Conclusion

The Bureau of Reclamation has proposed an aggressive time table for completion of the Glen Canyon EIS. APPA believes that this issue merits a timely conclusion of the study and will assist in meeting the Bureau's goal of completing the EIS by December, 1991. While this time frame is tight, it should be sufficient to complete a comprehensive study, and APPA is willing to work with all interested parties to achieve this goal and ensure the proper stewardship of the Colorado River.

In order to meet the tests of objectivity, comprehensiveness, and equity, APPA urges the Bureau to incorporate the comments and suggestions outlined above.



Written comments on the scope of the Glen Canyon Environmental Impact Statement are welcome and will be accepted at the meetings or by mail until April 16, 1990. Written comments should be addressed to:

Glen Canyon Dam Environmental Impact Statement  
U.S. Bureau of Reclamation  
P.O. Box 11568  
Salt Lake City, Utah 84147

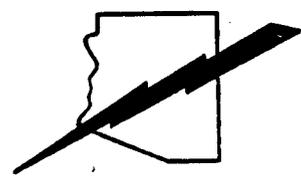
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ARIZONA MUNICIPAL POWER USERS' ASSOCIATION

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2712 NORTH SEVENTH ST. • PHOENIX, ARIZONA 85006-1003 MAR 27 '80

MICHAEL A. CURTIS  
EXECUTIVE SECRETARY  
602 - 248-0372

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### Position of the Arizona Municipal Power Users' Association In Support of the Glen Canyon Environmental Impact Statement Process

My name is Michael Curtis. I am the Executive Secretary of the Arizona Municipal Power Users' Association ("AMPUA"). AMPUA has a membership consisting of cities and towns, rural electric distribution and G&T cooperatives, Indian projects, electrical districts, irrigation districts, agricultural improvement districts, and water conservation districts. Collectively, the membership delivers over one-half the electricity in the State of Arizona to approximately half a million rural and urban people. The membership consists of non-profit electric systems that are owned by their customers.

The tax-paying consumer-owners of the entities comprising AMPUA also constitute and consider themselves a large segment of the environmental community. These customers believe there is no inconsistency between their providing low-cost electrical power to themselves and achieving a way of life compatible with their environment.

Our membership has a balanced concern about the environment in general, and the ecological conditions below Glen Canyon Dam along the Colorado River and in the Grand Canyon, in particular. It is also concerned about preserving the significant economic value Glen Canyon Dam's hydroelectric power production facilities have for homes, farms, and communities. This hydro-power is a clean, renewable and valuable resource. It has saved millions of barrels of oil from being consumed, and has lessened the United States' dependence on foreign oil and coal-fired energy. Our members have repaid the United States the cost of these facilities in the manner dictated by Congress and national policy.

At the same time, our members have also devoted themselves to energy conservation. This Glen Canyon hydro-power resource is not a resource which is squandered or applied to inefficient or unproductive uses - to the contrary, our membership not only wisely uses the hydro-power that is produced from Glen Canyon dam and other dams along the Colorado River, but also has been supporting for many years multiple major federal, state and local efforts to conserve and promote wise and effective use of energy.

AMPUA views the Colorado River, Glen Canyon dam, Lake Powell, the river reaches below the dam, and the Grand Canyon Park as resources of this country devoted to principles of multiple use; and not devoted just to the purposes of the well, the strong, the physically fit and the outdoors man, but also to the purposes and benefit of those who are sustained and nurtured by the production of low-cost water and electricity, cities, towns, the poor, infirm, the rural inhabitants and farms. Some Glen Canyon EIS papers (and comments and thinking so much in evidence through the media) seem to favor abandonment of the concept of multiple use. AMPUA sees disturbing evidence among some EIS participants of a commitment to narrowing the concept of multiple use to the exclusion of water and power consumers. Such a narrowness of concept is incompatible with the EIS process and, we believe, inconsistent with the basic requirements of federal management of natural resources: multiple-use management for multiple beneficiaries.

AMPUA fully supports the current Glen EIS process effort. Through its membership in the Colorado River Energy Distributor's Association (CREDA), AMPUA has worked with the USBR to develop the scope of the EIS and identify areas of study.

Adaptation to and accommodation of the environment and the multiple constraints of modern life is a significant challenge to modern man: It is not the responsibility of only those recipients of federal water and power (as now produced at Glen Canyon Dam) to provide (in mitigation) all of the adaptation to and accommodation of the perceived Colorado River environmental needs. Others (who wish to pursue camping, fishing, boating, sightseeing, and esthetic pursuits on the Colorado River) must also submit themselves to regulation, adaptation, and accommodation of competing needs. They (and their pursuits) also have impacts on the environment and ecosystem and their wants and needs also have impacts on millions of other people.

AMPUA submits, therefore, the purpose of an EIS is to properly balance, after considering all the options and all the alternatives, the complex competing demands of our nation's citizens for economic and social sustenance, as well as their demands for esthetic and environmental fulfillment, with the environment. Our membership accepts the competition because it recognizes the complexity of our society; and AMPUA will accept the conclusion. Should the EIS not require change in river operation, AMPUA expects the conclusion will likewise be supported by others.

AMPUA is currently concerned there may not be enough Study Group emphasis on the need to study and evaluate in the Glen Canyon EIS process an array of solutions to the problems presented. There has been little mention of economic contribution to the cost of environmental solutions, except demands for contribution from the power consumers. AMPUA believes-constituencies other than the power consumers must make economic contribution. And we would like to see such ideas studied. This is what we mean by looking at an array of solutions.

Critics of power production and water use must honestly admit an EIS study is required of such items as introduction of a variety of alternative species of fish; of alternative methods of travel up and down the river; of alternative methods of encampment along the river, and, significantly - of whether or not it is time to computerize and limit the use of the river to coincide with already existing flows, rather than manipulate flows to accommodate more people.

evaluated to determine if any are feasible and reasonable methods of accommodating complex competing uses, rather than requiring (as the only solution) diminishment of water flows, electric production, or the value of electric production, as the single cure-all.

"Nature" is not without change-whether man intervenes or not. And Yellowstone is the proof. Acceptance of change and adaptation to change is a challenge to all of us. Believing acceptance of and adaptation to change is our collective challenge, AMPUA looks forward to the EIS as being an appropriate process to reconcile the impact of man on his changing environment with man's equally important social, economic, philosophical and political needs. If its integrity is kept intact.

AMPUA is committed to a two year EIS completion schedule and congratulates the agencies embarked upon this Glen Canyon EIS process.



Please instruct staff doing the work in the region to support the Secretary's declared intent to study all the alternatives- not just operational ones.

010280

Public input: Please keep us advised of opportunities to make further public comment.

Multiple Use: Please provide analysis of the comparative burdens, benefits, costs and advantages of multiple use conclusions and solutions. Combinations of solutions not favoring just one aspect of the array of problems will better satisfy the spirit and intent of reclamation law and the needs of multiple beneficiaries. There are conflicting resource values which need to be reconciled with strategies for mitigation. Production for public examination of an array or matrix of issues would be helpful - if possible solutions are also presented.

Focus: We continue to support a focus of the EIS on the area below Glen Dam to the Separation Rapid. This focus will be most meaningful and helpful in answering the challenge of the EIS. Shifting the focus to a broader area or multiple areas should be left to a study of cumulative impacts.

Thank you again for the opportunity to participate in the public process.

If you have any questions, please call the undersigned.

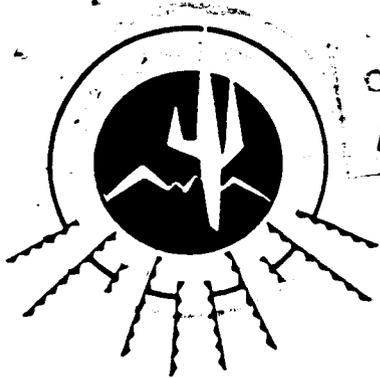
Very truly yours,

ARIZONA MUNICIPAL POWER USERS'  
ASSOCIATION

By

  
\_\_\_\_\_  
Its Executive Secretary

cc: Management Committee



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# Arizona Parks & Recreation

## Association, Inc.

3124 E. Roosevelt  
Phoenix, AZ 85008

(602) 267-7246

Natural Res. Prof. Sec.

May 2, 1990

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Bureau of Reclamation  
Glen Canyon Dam E.I.S.  
Salt Lake City, Utah

Dear Sirs:

Thank you for the opportunity to provide input into the scoping process for the Glen Canyon Dam Environmental Impact Statement (and for the extended deadline).

The NEPA process you are carrying out is critical, and could set a direction for decades to come. You have been told many times that a quality job is not a rush job; we concur. Our specific comments are as follows:

You have stated that the Western Area Power Admin. (WAPA) is a cooperating agency. We have just learned that WAPA has decided to prepare a competing E.I.S. at the same time your agency is preparing one. Needless-to-say this will be confusing to the public, and will duplicate efforts. How can they evaluate environmental effects of their Marketing Criteria (how they sell power) without duplication of your studies? It is their Marketing Criteria that is the root of many of the river's problems. It is essential that they stop their independant actions, and become part of the team effort. If they continue, the E.I.S. you are writing will be worthless. Please ask that they function as a Cooperating Agency.

F.L. 90-537 specifies several purposes for the program for the further development of the water resources of the Colo. River Basin. One of these purposes is for "providing for basic public outdoor recreation facilities." The law further allows "the generation and sale of electrical power as an incident of the foregoing purposes." The Operating Criteria which were promulgated pursuant to F.L. 90-537 directs that the annual plan of operation reflect appropriate consideration of the uses of the reservoirs for all purposes, including recreation. We submit that recreational use of the water from the reservoir directly downstream from that reservoir's dam is not significantly different than recreational use of the reservoir's water just upstream from the dam. This is to say that river-running in the Grand Canyon is covered by F.L. 90-537 and the Operating Criterai.

We wonder why the Lower Colorado Regional Office of the BOR is not heavily involved in this process. It is our understanding they have more experience in this type of evaluation, and also that it is in this region where most of the impacts are located.

The true economic value of recreation connected with the river below the dam. has never been aggregated, and to date this value appears to have been grossly understated. It is obvious that private boaters value the opportunity to run the river highly; even though a high price must now be paid just to register for a trip on a public river, many still place themselves on the waiting list. It is obvious that a private river-running day has a far higher value than do other types of recreational days.

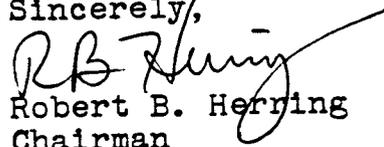
The issue of the National Park Service's Federal reserved right to in-stream flow through the Park must be addressed. This right must be quantified, based on the purposes of the Park when established. 7,000 c.f.s. has been mentioned as an appropriate pre-dam avg. low flow. Without a quantified in-stream reserved right, valid alternatives can not be developed.

We note that your studies have already shown that larger boats have a disproportionately larger impact on beach erosion than do smaller boats. We also note you have identified safety problems at low flows, due to the fact that large boats can not get safely through the rocks nor wait for better water due to tight schedules. In addition we note you have identified congestion at low flows, due to the fact large groups associated with large boats can not spread out, and require large scarce beaches. Based on these findings, we submit that boat size must be evaluated, and sub-alternatives developed. An alternative that strictly limits the number of large (over 18 ft.) boats must be built into the scoping and evaluation process.

The General Power Marketing Criteria (GPMC) are a major factor in the problems of this river. P.L. 84-485 states that authorized powerplants shall be operated in conjunction with all other Federal powerplants so as to (jointly) produce the greatest practicable amount of power that can be sold "at firm power and energy rates." The GPMC allows for violation of this law by allowing WAPA to market power on either a long-term firm basis OR on a short-term peaking-power rate. We submit that all alternatives developed as a part of this NEPA process must be based on revised GPMC which are in compliance with P.L.84-485 which allows power to only be sold at firm rates.

We appreciate the opportunity to provide input into your scoping process, and ask that we be put on your mailing list.

Sincerely,

  
Robert B. Herring  
Chairman

10367



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**STATEMENT OF DAVID ONSTAD OF THE ARIZONA POWER AUTHORITY**  
for  
**GLEN CANYON DAM ENVIRONMENTAL IMPACT STATEMENT**  
**SCOPING MEETING**

March 15, 1990

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MAR 27 '90		
Date	Initials	To
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Subs. Corresp _____		
Date Ans'd _____		

My name is Dave Onstad from Phoenix, Arizona. I am the Administrator of the Arizona Power Authority. My agency does not buy power directly from the Colorado River Storage Project (CRSP), but I want to stress the important part that Federal power resources play in the electric power supply for public power agencies in Arizona. Many of the Arizona Power Authority's customers receive a portion of their power supply from CRSP and are directly concerned with the operation of Glen Canyon Dam.

The statement that Glen Canyon Dam is operated for peaking so that power companies can profit is not a fair representation. Public power agencies receiving Federal power in Arizona consist of cooperatives, small municipalities and irrigation and electrical districts. Profit is not the motive because all these agencies are owned by their consumers.

A number of people feel these public power agencies do not use Federal power resources wisely because the price paid for the power is lower than alternate sources. In nearly every instance, these public power agencies only receive a portion of their power supply from low-cost State and Federal power resources. The remainder of their power supply needs are purchased on the open market at full market prices. This means that conservation measures are vital in keeping power costs down.

Public power agencies believe in energy conservation and are actively studying and implementing conservation plans to extend the benefits of low-cost power to their consumers. They are not motivated by profits, but by providing reliable power to their member consumers.

If peaking power production is reduced at Glen Canyon, Arizona public power entities will be forced to use non-renewable sources such as coal and gas to replace needed peaking requirements. Certainly, conservation measures can reduce this impact, and will, with time. However, most significant conservation methods require education combined with upgrading or installation of new materials and equipment. Adequate low-cost funding methods will also be required to achieve this goal.

Throughout time, the Grand Canyon was formed with the water and the wind carving out what we see today. This process is a natural evolution of the canyon. Whatever we mortals do will not stop this evolution -- this is a natural process. Some actions we take may slow the process by reducing the wearing away. Other actions we take will speed up the eroding process. The high water runoffs which occurred in 1983 through 1985 would certainly have removed more

of the sand beaches in the Grand Canyon if the Colorado River Storage dams had never been built. It is true that, with time, the beaches would have been reconstructed with natural silt moved down the Colorado River.

But, the Glen Canyon Dam is on the Colorado River and the CRSP Dams are on the upstream portions of the Colorado River system. This has altered the natural forces which act on the Grand Canyon, but it has not removed them. When one looks at the clean water coming from the Glen Canyon Dam and the muddy water entering Lake Mead, it is obvious that additional erosion is taking place, wearing away on both the rock and the beaches. The environmental flow studies which are proposed to begin later this year will provide data to evaluate the effect of varying flows on beach erosion. Beach erosion may be slowed by altering methods of operation at Glen Canyon Dam, but will not stop. It will be necessary to use other means to reconstruct the beaches in the Grand Canyon.

Public power recognizes the need to protect the environment and supports the environmental studies being conducted. We also know that we will be paying much of the cost in our power bills for the environmental studies which are being performed. Much of the cost is performing basic research and inventory of biological and archeological resources in the Grand Canyon. The Grand Canyon is certainly a national resource and a portion of the costs should be borne on a national basis.

We need to work together with all the interests which affect the Grand Canyon in a win/win mode of cooperation to achieve a balanced solution with the least cost to both the environment and to the economics in the areas close to the Grand Canyon. Emotional pleas without consideration of compromise will not allow us to reach a win/win solution.

GCDGC.DOO

# ARIZONA RAFT ADVENTURES, INC.

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April 4, 1990

APR 04 '90

Date	Initials	To
		MS

Subs. Corresp. \_\_\_\_\_

Date Ans'd \_\_\_\_\_

Roland Robinson  
 Regional Director, Bureau of Reclamation  
 P.O. Box 11568  
 Salt Lake City, Utah 84147

005571

Dear Roland:

This letter is in reference to the EIS for Glen and Grand Canyons. I support your efforts to gather public input via the scoping sessions and acceptance of written input. I am confident you will thoroughly examine all input directed to your attention regarding this EIS process. Thank you for scheduling a second scoping session in Flagstaff, April 3 and extending the written input deadline to May 4th, 1990.

I have been a professional guide in Grand Canyon since August 1971. My first Grand Canyon river trip was in 1969 as a member of the Powell Centennial trip. I have observed many of the changes in Grand Canyon documented in Phase I by the GCES technical team.

Beaches in Grand Canyon have been greatly diminished. Beach erasure became evident late summer 1980, and increased at nearly exponential rates during high flow years 1983-86. For most of the 1980's, the clear Colorado River lapped on beaches it had not touched since pre-Glen Canyon Dam, muddy, silty water days. High water of the eighties removed, rather than deposited beach cementing matrices. At this point, I am not even touching on any of the various ramping regimes, but rather the presence of high volumes of clear river water lapping beaches in Grand Canyon, removing the precious, natural cementing matrices. Once removed, these silts, natural cements are lost forever. In 1987, I began to notice a change in the consistency of the beach sands. Prior to flood flows of the mid-eighties, beach sands were solid, caked. Beach sands have become incredibly fine; less solid; less stable; more vulnerable to erasure. In addition, beaches in Grand Canyon are now slumping pervasively, sliding into the Colorado River. Slumping is most evident when the river flow has fallen from high flows (above 18,000 cfs) to low flows (less than 8000 cfs.). With out naming every single beach in the Grand Canyon corridor, Phase I studies document the following: beaches are being diminished rapidly. Most of this sediment will end up in the head waters of Lake Mead. A modification in the operation of Glen Canyon Dam must occur in order to adequately protect the natural resources within Grand Canyon corridor. Flow regimes must be modified immediately such that present daily impact to beaches and wildlife is arrested. All flow modifications must be conducive to the GCES team's ability to obtain credible scientific data for the EIS.

Glen Canyon Dam operations legislation and regulations do not give primacy to the production of hydro electric power. So why

4050 E. HUNTINGTON DRIVE · FLAGSTAFF, AZ 86004 · (602) 526-8200

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is Grand Canyon, a National Park, suffering the consequences of high impact flow regimes? Glen Canyon Dam has been operated as though maximization of power production has a priority over all other values with the exception of water delivery requirements between the upper and lower basin states and Mexico. The Colorado River Basin Project Act (1968) which established the Glen Canyon Dam Operating Criteria clearly states, "the generation and sale of electrical power as incidental to flood control; improving navigation; providing for the storage and delivery of the Colorado River for reclamation of lands, including supplemental water supplies, and for municipal industrial, and other beneficial purposes; providing for basic public outdoor recreation facilities; improving conditions for fish and wildlife." Similarly stated is the Colorado River Storage Project act, hydro electric generation is to be incidental. My question? --What happened to the integrity of these acts ?

Structural alternatives should not be seriously considered. The Bureau of Reclamation must incorporate a commitment/philosophy of preventative maintenance which ensures Glen and Grand Canyons remain in the most natural state; accessible to the public and conducive to the preservation of wildlife and natural habitat for generations to come. Considering structural alternatives such as re-regulation dams, cementing of beaches sands, or construction of hogans (as suggested by WAPA) clearly are not compatible with the natural setting of the Glen and Grand Canyons and cannot be considered. Flow regimes must be restructured, redesigned, such that they conform to the original legislation and regulations for which they were originally intended.

Based on the time I have spent in Grand Canyon over the past 21 years it apparent that Glen Canyon Dam flow regimes must be modified such that natural resources present in Grand Canyon are preserved for the long term. Phase I documented beach degradation and wild life fatality (extinction) resulting from the high flows of the mid 1980's and periods of high ramping post 1986. These are facts, not hypotheses. Proof not supposition.

Glen Canyon Dam operations have impacted Grand Canyon corridor. We have a responsibility to see that restoration programs result from this EIS. Careful thought must be given to restoring the beaches and natural vegetation. Beach stabilization utilizing natural means must have preference over concrete or any other unnatural materials.

5571

A long term monitoring program is a requirement to ensure preservation of Grand Canyon for generations to come. We must not allow Grand Canyon to be destroyed and then say why did we let that happen?

Sincerely,

*Cameron Staveley*

Cameron Staveley  
Field Personnel Manager  
Arizona Raft Adventures, Inc.

5571

FLDR #

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ORIGINAL



ARIZONA WILDLIFE FEDERATION

4330 N. 62nd St. #102 • Scottsdale, AZ 85251 • (602) 946-6160

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Hearing Officer  
Glen Canyon Dam  
P.O. Box 11568  
Salt Lake City, Utah 84147

Dear Sir:

004749

The comments enclosed are the official positions of the Arizona Wildlife Federation and it's affiliate in Flagstaff, the Coconino Sportsmen. These comments pertain to the scoping process for input to the draft E.I.S. concerning the operation of Glen Canyon Dam. Enclosed also find a copy of our comments to Senator Bill Bradley on this subject, which we request be included as part of our input.

The following items of concern and reccommendation are listed below for inclusion to the draft E.I.S. and are not in any order of priority.

- 1- Inclusion of the Bradley letter, especidally pages 3&4.
- 2- The preferred alternative should maximize protection of the entire downstream riparian ecosystem.
- 3- The preferred alternative emphacise ecosystem management.
- 4- The preferred alternative must set higher minimum flows and limit river level flucuations. See Bradley letter.
- 5- The preferred alternative must include energy conservation as part of the operation via incentives and education.
- 6- We request an adequate document. The intent to complete all processess by the end of 1991 appears to be intended to satisfy the minimum intent of the law, not address the issues in a reasonable manner nor offer reasonable and viable solutions.
- 7- Interim flows consistent with sound ecosystem management and protection must be set at the earliest time possible. See Bradley letter.
- 8- The preferred alternative must set up a board of representatives from all involved interests and agencies which would address future operations and management of Glen Canyon Dam and such a board consist of parity among it's members.
- 9- Given the intent and wording of the law establishing the Dam, wildlife and recreation concerns must be given at a minimum parity in the E.I.S. and in future operations.

We wish to be kept involved within this process and further request that notifications and documents be sent to Ace H. Peterson, 5509 E. Burris Ln, Flagstaff Arizona 86004 as well as to our office as listed in the letterhead.

Sincerely,

Ace H. Peterson  
Conservation Chairman for  
Lee Kohlhasse  
President

cc: Arizona Wildlife Federation  
National Wildlife Federation  
Coconino Sportsmen

~~CONFIDENTIAL~~

NATIONAL AND ARIZONA WILDLIFE FEDERATIONS  
TESTIMONY PRESENTED FOR

OVERSIGHT HEARING-GLEN CANYON DAM OPERATIONS  
SUBCOMMITTEE ON WATER AND POWER

HONORABLE SENATOR BILL BRADLEY  
CHAIRMAN

OCTOBER 14, 1989

ARIZONA WILDLIFE FEDERATION  
4330 N. 62nd St.  
Suite 102  
Scottsdale, Arizona 85251

Senator Bradley  
Subcommittee On Water And Power  
Oversight Hearing—Glen Canyon Dam Operations  
October 14, 1989

Dear Senator Bradley:

On behalf of the National Wildlife Federation and its affiliate, the Arizona Wildlife Federation, I extend our appreciation for the scheduling of the Glen Canyon Dam Operations oversight hearings in Arizona. Included in this statement is a background as to the effects this operation has had on the State of Arizona, the Grand Canyon National Park and members of the above mentioned organizations. Also included in this statement is our request for a strong and complete Environmental Impact Statement and our recommendations as to the structure of this document and the process of that structuring.

The Arizona Wildlife Federation is Arizona's oldest and largest conservation organization. Our membership is broad-based encompassing all forms of legitimate recreational interests including affiliates from fishing, hiking, birding, hunting, and ORV organization. Our membership has regarded the Grand Canyon and its upstream environments as both a State and National treasure for both consumptive and non-consumptive uses in the appropriate areas. It is then that we, based upon this belief, are concerned regarding the impacts Glen Canyon Dam and its operation have on the downstream environments including Grand Canyon National Park. We believe these impacts to be significant in nature and scope and as such to require both an EIS and interim management which will address these impacts and alleviate to the greatest extent possible those impacts which are adverse in nature and protect, restore or enhance those which would add to the World Class stature of the Park and Lee's Ferry Recreation Area.

The operation of Glen Canyon Dam as based upon current values and goals has had an adverse impact upon our membership, the citizens of the State of Arizona, the citizens of the United States of America and those citizens of the World who view and use the terrestrial and river environments downstream from Glen Canyon Dam including the Recreational Area and Grand Canyon National Park. Further, the operation of this facility while presently predicated upon electrical generation, negates and violates the intent of the Colorado River Basin Project Act of 1968, 82 Stat. 886, 43 U.S.C.

SS1501, which contains a Congressional declaration of purpose and policy which states in part: This program is declared to be for the purposes, among others, of regulating the flow of the Colorado River; controlling floods; improving navigation; providing for the storage and delivery of the waters of the Colorado River for reclamation of lands, including supplemental water supplies, and for municipal, industrial and other beneficial purposes; improving water quality; PROVIDING FOR BASIC PUBLIC OUTDOOR RECREATION FACILITIES; IMPROVING CONDITIONS FOR FISH AND WILDLIFE (emphasis added); and the generation and sale of electrical power as an INCIDENT (emphasis added) of the foregoing purposes. The criteria established for the operation of reservoirs on the Colorado River published in a document entitled "Colorado River Reservoirs Coordinated Long Range Operation" signed by then Secretary Hickel, June 4, 1970 provided among similar wording as stated above, purposes which specifically address beneficial uses including recreation, enhancement of fish and wildlife, and other environmental factors. The operation of Glen Canyon Dam has ignored these provisions which state implicitly the values of recreation, fish and wildlife and those habitats which support these and riparian communities. We draw your attention to the fact which states electrical generation was to be and incidental portion of such operations. The past and current operation of the Glen Canyon Dam has adversely impacted wildlife of all species, including avian, insect, mammals and fish. The fluctuations of water flow regimes has eroded sandbars throughout the Canyon area, significantly impacting recreation and public health, destroyed riparian zones which are used by human and wildlife alike, and created unsafe and intolerable conditions for recreational users downstream to Lee's Ferry and beyond. The creation of a world class fishery has been adversely impacted creating the establishment of reduced and restrictive fishery management to sustain a viable fishery consistent with public user demand. Peaking power operation and the resultant intermittent water releases require expensive and delicate management, placing undue burdens upon the resources and Wildlife/Biologist personnel of State or other similiar personnel in other agencies. Downstream rafting recreation, and other riverine uses by visitors world wide has also deteriorated under present management. Whether environmental or recreational, the quality of that environment and recreational experience has been significantly and adversely impacted.

We request the oversight committee dealing with the operation of Glen Canyon Dam, instruct the Agency or Agencies involved in the formulation of an Environmental Impact Statement addressing the operation of the Glen Canyon facility, to both formulate and implement an adequate EIS and consequent management plan consistent with NEPA. With regard to the NEPA requirements, a full range of alternatives be addressed, and full public participation be given complete with hearings for

public input at representative locations. While some of the hearing locations may need to be held outside of the State of Arizona, it is our request, based on NEPA requirements, that an equitable portion of these input hearings be held in Arizona.

We request also, that the Glen Canyon Oversight Committee and the lead agency responsible for the EIS document consider, address and implement within the EIS the following issues, concerns and input:

- 1) Portions of both the Glen Canyon Operations EIS and the WAPA EIS where compatible be integrated. It is our feeling that these two documents will address many of the same items, and that both are integral to the management of this facility and the downstream environs.
- 2) The EIS be tiered so as to allow past, present, and future studies affecting the Dam operation, or downstream needs and/or issues be added to the document and management decisions with appropriate public input and NEPA requirements. It is our belief that this EIS should become a "living" document amendable and/or revised as necessitated.
- 3) The range of alternatives should be broad enough to encompass adequate addressing of any and all issues/concerns and resolution of these be adequately displayed.
- 4) The time period for the completion of the EIS should be no longer than three (3) years, and should start at the earliest possible time. With the completion of other similar projects within the Western United States, and with past studies relevant to this area completed, ample study data exists which would allow the EIS to be started. We believe the tiering addressed earlier would allow subsequent data to be added within a timely fashion.
- 5) During the process of preparing the EIS, it is recommended the Secretary of Interior implement an interim management policy for management of the Dam consistent with the aforementioned 1968 act and Secretary Hickel's 1970 policy.
- 6) We request a full range of cumulative impacts be addressed and displayed in the EIS for the ranges of alternatives discussed, wherein downstream impacts are addressed fully.
- 7) The Grand Canyon Environmental Study should be completed and tiered to the Glen Canyon Dam EIS. We request this study become a portion of the EIS and management decisions.
- 8) As stated earlier, electric generation is an incidental portion of the Dam's operation, the decision notice should not be predated upon electrical socio-economics, but must be at most parity with recreation/wildlife socio-economics. Further, socio-economics must be considered state wide with respect to Arizona and/or bordering states which would benefit from all aspects of the operational impacts, just not those economic benefits which enhance governmental (whatever entity) operations. For instance: recreation and wildlife revenues to the State of Arizona for 1987-88, amounted to \$622 million from all sources, which serves as an example as

to the socio-economic values pertaining to recreation and wildlife.

9) At this point in time, there is an over abundance of marketable electrical generation. Currently, there exists more available generation than demand within the Southwestern Region. We believe this must also be assessed within the EIS as would apply to the generation "needs" portion of the EIS.

10) The cost of completing the EIS and associated studies is essentially an O&M process and should be derived from power generation revenues.

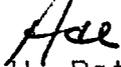
11) Attention must be given within the EIS and/or later amendments and study addendums to endangered wildlife and plant species and appropriate measures for their protection.

12) A set of standards and guidelines for management of the Dam and downstream resources must be established for any portion of or wholly of the river system downstream from Glen Canyon Dam within the EIS.

As requested prior within this statement, we believe that interim management policies must be established consistent with protection, restoration and enhancement of the Recreation Area and Grand Canyon National Park. We further request the Secretary of Interior, advised by the Oversight Committee, to establish interim flow limits on water discharges from Glen Canyon Dam. For the benefit of wildlife, recreation and environmental resources, we request the establishment of 8,000-10,000 cfs for minimum flows and 30,000-31,500 for maximum flows. Within these parameters, and using a "steady state" mode of operation, we believe downstream impacts from the Dam operation can be alleviated and adverse impacts reversed. In case of need to address power emergencies or hydrological extremes, the Secretary may implement variances. We would also request relief from the severe impacts on-line and off-line generator water discharges which impact recreational user safety and downstream resources by implementing different time constraints for phasing on or off generator operation.

The National and Arizona Wildlife Federations appreciate the opportunity to provide input to this hearing, and look forward to providing input to the Environmental Impact Statement process for Glen Canyon Dam.

Sincerely,



Ace H. Peterson  
National Wildlife Federation/  
Arizona Representative

cc: NWF/AWF Officers and Directors  
Arizona Congressional Staff

Brown Springs Ranch  
P.O. Box 1250  
Camp Verde, AZ  
86322  
April 4, 1990  
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P.O. Box 310  
Flagstaff, AZ 86002  
(602)774-4539  
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Date	Index	To
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Subs

Dear Sis:

I spoke at the first scoping session in Flagstaff, but I would like you to have this for your written record as well. My name is <sup>Edie</sup> Edie Schmiewind and I am a forty-seven year old woman who became a <sup>Grand Canyon</sup> river guide four years ago and who owns a Grand Canyon river rafting company. I live ten miles into the wilderness south of Camp Verde in the Verde Valley in Arizona (no electricity, hence no typewriter, hence this is hand written).

I lived in Massachusetts for twenty five

years and raised a family there. Four years ago I saw the Grand Canyon for the first time, as a passenger on a white-water rafting trip. I was so moved by this experience that I moved from Massachusetts to Arizona, bought the company, and learned how to run in the Grand Canyon. I am now proud to be both a river guide, and owner of my company, Canyon Explorations. Why did I make this dramatic change in my life? Because the experience of a raft trip through the Grand Canyon is the most important thing I feel I can offer to another person.

A Grand Canyon river trip is not just

"recreation" - it is  
an experience that  
transforms people, that  
changes their life.



P.O. Box 310  
Flagstaff, AZ 86002  
(602)774-4559

We need in this day and age to have  
opportunities to connect with wilderness  
and nature. At the Grand Canyon is  
a unique place for this to happen; its  
awe-inspiring beauty, the power of the  
elements of sun, water, and rock, its flora and  
fauna, the history of the earth geologically that  
its rocks offer to even the layman.

I want the opportunity for people to  
experience what the Canyon has to  
offer them (not possible with just a 20 min  
glimpse from the South Rim) to be preserved  
for generations to come; I want to see

priority given to this. I want to see the environment protected, natural beaches as campsites, water flows at the safest levels.

We are talking about the Grand Canyon!

Let us be good caretakers.

I pray that it will touch the lives of people for generations to come.

Die Schmeider

President, Canyon Exploration

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arizona's GO outdoors people

# canyoneers

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APR 18 '90

Date	Initials	To
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April 3, 1990

Glen Canyon Dam Environmental Impact Statement  
 U.S. Bureau of Reclamation  
 P.O. Box 11568  
 Salt Lake City, Utah, 84147

304667

Please enter this letter into the record of public comment on the Glen Canyon Dam Environmental Scoping process.

Canyoneers is one of twenty companies providing guided outfitted whitewater trips for the public in Grand Canyon.

I've been running trips down the river through Grand Canyon for more than 30 years, 7 of those years on the natural river before Glen Canyon Dam was built.

In 1950, HD 364 contemplated an 800 megawatt powerplant at Glen Canyon. In 1965, Public Law 84-485 authorized study of a 900 megawatt dam. The installed dam had a rated (nameplate) capacity of 950 megawatts. When tested it was found to have a capacity of 1035 megawatts, and was re-rated. After 4 of the generators had been rewound in 1980 the dam was uprated to 1150 megawatts. The additional rewind was to result in 1336 megawatts. There is Bureau correspondence indicating that these rewinds could be combined with certain other components of "the machine" to yield 1592 megawatts.

These continuous upratings have, over the years since installation of the dam, produced changed, and changing, patterns and volumes of water release down the river through Grand Canyon.

In 1966 when generator installation had just been completed, the highest water release through Grand Canyon was 20,900 cubic feet per second. Uprating the first four generators increased the highest release

Bureau of Reclamation

April 3, 1990

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Page 2

to 31,500 cfs. The rewind of the last four generators was to raise that capability to 33,600 cfs. During that time The Bureau stated that by augmenting the rewind with the full stroke of the turbine gates they could release 37,296 cfs downstream through the dam.

From 1966 through 1976, river runners could be sure of having the monthly release of 700,000 acre feet or more that is needed to provide runnable daily averages for an April through September boating season.

But in the last 15 years or so Glen Canyon Dam has been used to essentially reverse the seasons of the river, with high water now being released down the river during the winter, rather than during the summer.

In the early summer of 1982 my company conducted an investigative river trip for officials of the Bureau of Reclamation, National Park Service, Arizona Department of Game and Fish, Western Area Power Administration

(WAPA), and the Colorado River Electrical Distribution Authority (CREDA) During that trip, discharges from Glen Canyon Dam were manipulated from nearly 30,000 cfs, down to 3,000 cfs.

On that 1982 trip it was demonstrated clearly that the progress of trips downriver is impeded when flows are dropped below 7,500 cubic feet per second. At 3,000 cfs we could not run Hance Rapid. We sat there 5 hours as the water was brought up methodically. At 7,000 cfs the Park Service rowboats in our party were able to run safely. At 7,500 cfs my 36 foot motorized pontoon was able to run safely.

These meetings have been opening with a film containing the statement "minimum flows are maintained for boating, and for fish...". "Minimum" is understood to mean 3,000 cubic feet per second.

But 3,000 cfs is not boatable, and it's not good for indigenous or exotic fish.

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Page 3

Moreover, despite the findings of that 1982 trip and despite the "minimum flow" commitment, there have been many days in the ensuing years when the flow has been cut not below 7,500 cfs, but below 3,000 cubic feet per second.

Minimums of at least 7,500 cfs are needed to make river running safe, and trip schedules workable. At flows lower than 7,500 cfs, boats are ripped on rocks and ledges if they try to run rapids like Hance, Horn Creek, Crystal, Deubendorf and Lava Falls.

The alternatives at flows below 7,500 cfs are both bad: to sit, wasting hours - and sometimes days - of vacation time waiting for the water to rise, or to risk injury to passengers and crew by trying the run on inadequate water.

Highs should never exceed the 28,500 cfs that was shown several years ago in the Outlet Works Proposal to be the level at which beach degradation is inordinately accelerated.

In 25-plus years of peaking-power water releases since the dam was finished in 1964 I've observed a pronounced effect on Grand Canyon beaches. Many are gone, and the remaining ones are smaller. If the camping beaches are washed away, there can be no river trips. A multi-million dollar economic activity will have been wiped out.

The blue flyer of "factual information" that was included in this meeting's orientation kit contains a section titled "RECREATION DAYS." That section lists some 3-1/2 million for Lake Powell and Lees Ferry and 21,000 for Grand Canyon river trips.

Those figures are not in fact DAYS, they are numbers of PEOPLE.

The figures in effect present a subtle inference that Glen Canyon dam provides a recreational bounty for three and-a-half million visitors a year - no matter how the dam is operated - and that only a 21,000 people would be affected if river running is eliminated by elimination of beaches.

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April 3, 1990

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The comparative number of people is not the best measure. The average stay on Lake Powell is something like 3 days. In Grand Canyon there are trips available ranging to 21 - and even 30 - days. The average length of Grand Canyon river trips is about 10 days. But this is not a matter of demographics, it's a matter of economics.

A fully packaged and outfitted trip might cost \$150 per day. We professional outfitters are not ashamed of those rates: we deliver an incomparable experience to people who could not otherwise have it, and who then understand the specialness of Grand Canyon and its river.

At an average figure of \$100 per person per day for all of the passengers and privates who run the Grand, those 21,000 people spend \$21 million dollars each year just for river trips. And they spend additional amounts in the area, on pre and post trip items and amenities.

By the time that money rolls over locally and regionally, it comprises a huge annual economic value.

The hydropower interests do not want to modify their water release patterns because peaking power, like Grand Canyon river running, has an economic value.

Underneath its environmental and spiritual concerns, which are very legitimate and very real, this is a contest of economics.

I respectfully submit that so far the contest has been approached wrong: it's been approached as peaking power versus recreation - boating and fishing - winner take all!

By modifying water releases from Glen Canyon Dam, we can continue to enjoy both the power value and the recreation value.

But if the canyon's beaches are finally washed away, then only the hydropower value remains. In the corporate world, that would be called wasting assets.

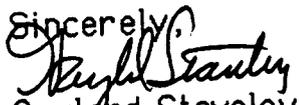
Bureau of Reclamation  
April 3, 1990  
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Page 5

A few months ago I received the 1989 Update on the Bureau of Reclamation's restructuring to meet its newly stated mission. That new mission purports to "place greater emphasis on total resource management".

The Glen Canyon-Grand Canyon situation presents an unparalleled opportunity for the Bureau of Reclamation to demonstrate the solemnity and validity of that new mission, and to save two sizeable economic values instead of just one. I hope that opportunity can be utilized.

Thank you for the opportunity to present these ideas.

I join those others who are requesting that the EIS process be reverted to the timetable that is needed for good Science to do a good job, and that usable summer flows be provided during the time that IES is being accomplished.

Sincerely,  
  
Gaylord Staveley

CONT. # \_\_\_\_\_

LDR # \_\_\_\_\_

**ORIGINAL**

# CENTRAL ARIZONA PROJECT ASSOCIATION

0387

6317 North 14th Street  
Phoenix, Arizona 85014  
Telephone (602) 870-6796  
FAX: (602) 870-2805

H. S. RAYMOND, CHAIRMAN OF THE BOARD  
WAYNE M. AKIN, VICE CHAIRMAN OF THE BOARD  
WEBB TODD, PRESIDENT  
TERRY HUDGINS, VICE PRESIDENT  
DAVID IWANSKI, VICE PRESIDENT  
ROBERT S. LYNCH, VICE PRESIDENT  
TOM VOLGY, VICE PRESIDENT  
J. ROBERT WHITE, SECRETARY-TREASURER  
WILLIAM H. WHEELER, EXECUTIVE DIRECTOR

March 15, 1990

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MAR 19 '90		
Date	Initials	To
		140

Glen Canyon Dam EIS  
U. S. Bureau of Reclamation  
P. O. Box 11568  
Salt Lake City, UT 84147

Gentlemen:

The Central Arizona Project Association is vitally interested in the Glen Canyon Dam Environmental Impact Statement because of the importance and sensitivity of that operation which provides water and power to millions of people in Arizona, California, Colorado, Nevada, New Mexico, Utah and Wyoming.

The concerns being expressed are coming from sources that, in the main, did not exist until after Glen Canyon Dam was built. Now, fishermen, rafters and ecosystem concerns say change the operations at the expense of its original purposes to satisfy their wishes. In that case, we suggest that whatever expenses result from these deliberations be paid by those who demand them. The water and power users have already assumed their fair share of obligations.

Our suggestion is that particular attention be given to placing a low re-regulation dam at a point just below Glen Canyon Dam in order to smooth out daily fluxuations in flow. Also, we suggest that beach protection in the form of jettys above selected sites would help enlarge and maintain many campsites.

In our estimation, the modifications indicated above will result in satisfactory improvements for fishermen, rafters and ecosystem concerns without loss to water supply or power production. However, we repeat that cost should be borne by the beneficiaries, not the water or power users.

We ask that these suggestions be given your full consideration.

Sincerely,

*Webb Todd*  
Webb Todd

ORIGINAL

PXD 3.00-

GC

CONT. # 9005487  
FLOR # 20990

# CENTRAL ARIZONA PROJECT ASSOCIATION

6317 North 14th Street  
Phoenix, Arizona 85014  
Telephone (602) 870-6796  
FAX: (602) 870-2805  
April 23, 1990

H. S. RAYMOND, CHAIRMAN OF THE BOARD  
WAYNE M. AKIN, VICE CHAIRMAN OF THE BOARD  
WEBB TODD, PRESIDENT  
TERRY HUDGINS, VICE PRESIDENT  
DAVID IWANSKI, VICE PRESIDENT  
ROBERT S. LYNCH, VICE PRESIDENT  
TOM VOLGY, VICE PRESIDENT  
J. ROBERT WHITE, SECRETARY-TREASURER  
WILLIAM H. WHEELER, EXECUTIVE DIRECTOR

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APR 23 '90

Date	Initials	To
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The Honorable Manuel Lujan, Jr.  
Secretary of the Interior  
Room 6151  
C Street between 18th and 19th Streets, N.W.  
Washington, DC 20240

Dear Mr. Secretary:

The Central Arizona Project Association is vitally interested in the operation of the Glen Canyon Dam because of its role in supplying water, power and recreational resources to some 22 million residents of the Colorado River Basin in Arizona, California, Colorado, Nevada, New Mexico, Utah and Wyoming. A bill currently before Congress, H.R. 4498, proposes to impose immediate restrictions on operations of Glen Canyon Dam.

The driest states in the nation lie in the Colorado River Basin and they depend on the river as a primary source of water. The present operation of the river at Glen Canyon is the result of a complex web of needs, agreements and compromises that have been developed over many decades. Congress should not impose its arbitrary judgement on those presently studying the operation issues without having full knowledge of the scientific, economic, sociological and ecological consequences.

The Environmental Impact Statement you ordered just eight months ago should produce a comprehensive management program addressing power production and repayment capacity, water conservation, beaches, whitewater rafting, trout fishing and endangered species. Development of an accurate and objective statement and alternatives that are involved is a complex undertaking with vast implications for the basin states and the entire country. We suggest that it is clearly unwise to circumvent these ongoing studies and the extensive history of Colorado River management by ordering arbitrary changes in the operation of Glen Canyon Dam before completion of the EIS.

Any support you can give us will be deeply appreciated.

Sincerely,

005578

*Webb Todd*  
Webb Todd  
President

cc: Bureau of Reclamation (Underwood - WA)  
(Robinson - SLC)  
Governors - Western States  
Congressional Delegation (AZ & WA)

-40-

STATEMENT OF CENTRAL UTAH WATER CONSERVANCY DISTRICT  
ON THE GLEN CANYON DAM ENVIRONMENTAL IMPACT STATEMENT  
SCOPING MEETING

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MAR 19 '90

Date	Initials	To

Contract \_\_\_\_\_  
Date Ans'd \_\_\_\_\_

My name is C. Elden Laird, 2236 Lincoln Ct., Salt Lake City, Utah 84124.  
I am representing the Central Utah Water Conservancy District.

The Colorado River Storage Project Act requires a repayment contract with "an organization" which has the power to levy taxes on property within their judicially approved area. That "organization" is the Central Utah Water Conservancy District. The District is a non-profit political subdivision of the state of Utah whose responsibility is to meet water needs within its District boundaries. The two basic functions of the District are to develop water resources and to store and divert water for treatment. It includes all or substantial parts of twelve counties in the state of Utah. It is the sponsor who contracts with the United States Government for the repayment of reimbursable costs of units of the Central Utah project.

The Central Utah Project is not an artifact of an earlier era nor an outmoded water resource development plan that was inherited from our forefathers. The Central Utah Project is a viable and vital project that preserves rather than precludes our options for the future. Utah is the second driest state in the United States and considers water as a priceless natural resource. For many years, the State has developed and continues to develop its plans to utilize the waters to which it is legally entitled. One of its chief remaining sources is the Colorado River. Through compacts with the Colorado River Basin states Utah's legal entitlement to the Colorado River is approximately 1.7 million acre-feet of water per year, although for planning purposes we only expect to receive about 1.37 million

million acre-feet. Sixty per cent of Utah's contribution to the Colorado River drainage basin is produced in the Uinta Mountains. Water experts and planners indicate that to meet Utah's needs soon after the turn of the century total utilization of the State's water will be required. Consequently the continuing economic growth of the state of Utah requires an increasing supply of water to meet the future needs of the State. The Central Utah Project is one of the major means whereby the state can increase its usable water supply and utilize its compact entitlement of the water from the Colorado River as provided by the Colorado River Compact of 1922 and the Upper Colorado River Basin Compact of 1948. The initial phase of the Central Utah Project was authorized for construction as a participating project under the Colorado River Storage Act of 1956 (70 Stat. 105).

It is the responsibility of the state of Utah and the Central Utah Water Conservancy District to indicate the manner in which this water resource of the state should be developed; and, it is imperative that the maximum benefit from such water development be secured for all purposes including fisheries, wildlife, and recreation.

The Central Utah Water Conservancy District supports the Environmental Impact Study effort being made by the United States Department of Interior, Bureau of Reclamation. The District is eager to work with Reclamation in identifying critical areas of study.

The management of the Colorado River and the canyon is of extreme importance to the District. One of the objectives of the District would be to insist that those making the final decision of management and modification, if needed, have a complete and accurate base of information

to make their decisions. The District believes that the EIS needs to identify and define problem areas and develop solutions which meet the multi-purpose objectives. It should also present reliable data on costs, economic projections, and financial outcomes of the solution.

In most cases, revenue derived from power generation of hydroelectric power on the Colorado River are used to repay substantial portions of the cost of development of irrigation projects. The Colorado River Storage Project Act requires power facilities to operate "so as to produce the greatest practicable amount of power and energy that can be sold at firm power energy rates." The Act also is interpreted to say that power rates will be set to sufficiently cover the project costs within the repayment schedule. The District believes that any changes in operating criteria that could jeopardize the production of power and the benefits derived thereof could adversely affect certain portions of the development of the Central Utah Project.

Central Utah Project investigations were based upon the assumption that the indicated water supply from the Colorado River would be available under the terms of the Colorado River Storage Act and within Utah's rights to the Upper Colorado River. Therefore, the District believes that the EIS should identify and resolve the problems, be consistent with multiple use of the River, and provide for equitable treatment of all those affected by any recommended changes.

The District will assist Reclamation in any manner that it can to complete the EIS in a timely manner.

CONT. # \_\_\_\_\_  
LDR # \_\_\_\_\_

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**CREDA STATEMENT**  
**GLEN CANYON DAM EIS SCOPING MEETING**  
**Flagstaff, Arizona**  
**March 16, 1990**

Good evening. My name is Charles Reinhold. I am the Executive Director of the Arizona Power Pooling Association, and I am here this evening speaking on behalf of the Colorado River Energy Distributors' Association, which we call CREDA. CREDA is made up of 155 nonprofit consumer-owned electric utilities and rural electric cooperatives in Arizona, Colorado, New Mexico, Nevada, Utah and Wyoming. Together, our members serve about 1 million retail customers in the Colorado River Basin which translates into approximately 3 million people as well as industries, businesses and farms in the region.

CREDA and its individual members are very concerned about what is going on and what may happen along the Colorado River at Glen Canyon and in the Grand Canyon. We are concerned about power production because our members buy most of the power that is generated from the Colorado River Storage Project. Glen Canyon Dam is the most significant feature of the Storage Project and accounts for almost 85% of all the power that can be generated by CRSP dams in the Upper Colorado River Basin. That power is valuable to us not merely because it is there, but because it can be generated at a time when our customers are most in need of electricity. It is the ability of the dams to produce this electric power at these peak periods that makes the resource valuable. It also allows our generating utility members to burn less coal, natural gas and oil. Hydropower is a clean electric resource, and the costs as well as the impacts of burning more fossil fuels as an alternative to Glen Canyon generation must be considered when evaluating operational alternatives.

Although CREDA has many ideas and concerns going into this EIS Scoping process, I would like to specifically mention two here tonight. First, CREDA is very concerned about the trout fishery below Glen Canyon Dam. Last Fall we lobbied the Bureau of Reclamation to provide funds to the Arizona Game and Fish Department so they put people on the river to collect baseline data on what is happening on the river during current operations. We worked closely with Western to accommodate the region's power needs during a test flow study done over a weekend last October, during which the fishery, as well as many other areas of the Canyon, were closely observed and data collected during a period of steady flows. We have been working with a consultant to develop a proposal to study what changes can be made to the trout fishery to improve an already excellent resource. We are seeking methods to provide funds to have the Arizona Game and Fish Department pursue those studies. The interrelated problems of trout stranding, high mortality rates requiring a substantial stocking program, and boater access to the fishery at certain flows are complex when combined. All reasonable solutions should be explored during the EIS process, structural as well as operational. Why not consider

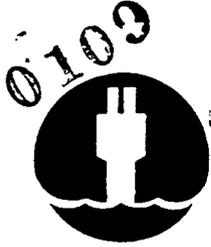
a program of creating channels at those areas of the river which restrict boater access? Why not explore the introduction of a species of trout which will spawn during the months when higher flows can supply electricity at a time when it is most needed by the customers in the region?

The second area of concern to CREDA are the beaches throughout the canyon. The real problem appears to be the lack of sediment in the river. The EIS process should consider methods of augmenting the amount of sediment available, or methods of conserving the beaches other than merely flattening flows. For example, some strategically placed rocks could protect the vulnerable flanks of some beaches. Controlled native vegetation growth could stabilize others. Constant flows might well retard beach erosion, but that measure is more of a postponement of the inevitable than a solution to problem. The problem is a limited supply of sediment. Methods of introducing or redistributing sediment need to be explored. We also believe that the sediment and beach problems cannot be resolved within the short time frame necessary in this EIS process. A long term monitoring effort should be considered. As with the trout fishery, the problems are complex and all reasonable solutions should be explored.

With regard to the general scoping process, the background paper on development of alternatives distributed by the Bureau of Reclamation is a good start. But the scoping process must now go beyond single purpose alternatives to a consideration of a system that was built and is now operated to meet multiple objectives. The multiple purposes were directed by law, are a necessary part of the operation and have produced a wide variety of benefits. CREDA believes the multi-purpose objectives must be retained and that the EIS should address only reasonable alternatives that meet these objectives. In addition, the EIS must address the "no change" alternative as required by law.

With regard to the timing of the EIS, there has been a lot of debate about the two-year time frame that the Secretary has set for this process. At this point in the scoping process, we can't say whether the published schedule is too ambitious. It may be, but we are going to try to make it work and see how far we can get. But our goal is to have a valid process produce a quality Environmental Impact Statement so the Secretary can make a reasoned decision. If two years won't do that, we will be in the front of the line asking the Secretary to add more time to the process. And when the process is completed, we are still going to be there, seeing to it that the solutions are implemented and that the further studies that need to be done get done. There are many questions for which there are no short-term answers. That is no reason to put off finding answers to questions where you can and doing something about them.

CREDA is pleased that a formal environmental process has begun. We are committed to working with others within the process to find solutions we can all live with.



FLDR # \_\_\_\_\_

**CREDA**

COLORADO RIVER ENERGY DISTRIBUTORS ASSOCIATION

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MAR 29 '90

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**POSITION OF THE COLORADO RIVER ENERGY DISTRIBUTORS' ASSOCIATION IN SUPPORT OF THE GLEN CANYON DAM ENVIRONMENTAL IMPACT STATEMENT PROCESS**

March 27, 1990

**ARIZONA**  
 Arizona Municipal Power Users Association  
 Arizona Power Authority  
 Arizona Power Pooling Association  
 Irrigation and Electrical Districts Association  
 Navajo Tribal Utility Authority (also New Mexico, Utah)  
 Salt River Project

**COLORADO**  
 City of Colorado Springs  
 Platte River Power Authority  
 Tri-State Generation & Transmission Cooperative (also Utah, Wyoming)

**NEVADA**  
 Colorado River Commission of Nevada  
 Silver State Power Association

**NEW MEXICO**  
 Farmington Electric Utility System  
 Plains Electric Generation & Transmission Cooperative (also Arizona)  
 Truth or Consequences

**UTAH**  
 Intermountain Consumer Power Association (also Arizona)  
 City of Provo  
 Strawberry Water Users Association  
 Utah Municipal Power Agency

**WYOMING**  
 Wyoming Municipal Power Agency

**CLIFFORD BARRETT**  
 Executive Director  
 City Centre I, Suite 1000  
 175 East 400 South  
 Salt Lake City, Utah 84111

The Colorado River Energy Distributors' Association (CREDA) is made up of 155 cities, towns, political subdivisions and rural electric cooperatives in Arizona, Colorado, New Mexico, Nevada, Utah and Wyoming. Together, our members serve about 1 million retail customers in the Colorado River Basin which translates to approximately 3 million people as well as industries, businesses and farms in these states. Our members operate nonprofit, consumer-owned electric utilities, primarily in rural areas.

Obviously, we have a great concern about what is going on and what may happen along the Colorado River below Glen Canyon Dam and in the Grand Canyon. At the same time, we have, as we must, a great concern about power production because our members buy over 85% of the power that is generated from the Colorado River Storage Project dams including Glen Canyon. More importantly, Glen Canyon is really the backbone of the system and accounts for 70% of all the power that can be generated on CRSP dams in the Upper Colorado Basin. That power is valuable to us not merely because it's there but because it is produced at a time when our customers are most in need of electricity. It is the ability of the dams to produce this electric power at these peak periods that makes the resource valuable. It also allows our generating utility members to burn less coal and oil. Hydropower is a clean, renewable electric resource.

We are also concerned about what happens at Glen Canyon and in the Grand Canyon from an environmental standpoint. Indeed, we have been paying for the Glen Canyon Environmental Studies (GCES) since their inception in 1982. And we have been actively participating since 1987 in the formulation of these studies and reports. Last fall we prevailed on the Bureau of Reclamation to grant \$84,000 to the Arizona Game & Fish Department so they could be on the river, as they are now, getting baseline data on what is happening on the river right now during current operations. We supported at a cost of about \$64,000 in power costs a test flow study done over a weekend last October. We have paid a consultant to

prepare a proposal to study how changes in trout species might help the trout fishery. We are currently asking the Bureau of Reclamation to provide the funds for that study to be done by the Arizona Game & Fish Department. And we are working with the GCES Technical Teams on a series of studies that will be conducted over the next year and a half to measure impacts and provide data for the Environmental Impact Statement. Not only will we fund these studies through our power bills but we will also provide people to cooperate in these studies, continue to ask the Bureau to spend money on issues we think need to be investigated and continue to spend our own money directly on developing information for use in this EIS process. We are committed to making this EIS process work, to making it produce solutions to problems, and to making it identify problems that have to be studied in the future.

The EIS must recognize that Glen Canyon Dam was built and is now operated to meet multiple objectives. The multiple purposes were directed by law, are a necessary part of the operation and have produced a wide variety of benefits. CREDA believes the multi-purpose objectives must be retained and that the EIS should only address reasonable alternatives that meet these objectives. In addition, the EIS must address the "no change" alternative as required by NEPA.

These are several options that need to be analyzed. For example, the river is losing sediment because it's being trapped behind Glen Canyon Dam. Side canyon contributions cannot make up the difference. Thus, the system is in a net loss condition. A single purpose solution suggested by some is to have constant water releases so the erosion of the beaches will take longer. We don't believe that's the kind of solution this process is supposed to examine. Something more imaginative needs to be studied. Beaches with steep inclines could be planed down so they can load and unload water without falling into the river. Boulders and native plants could be placed where they can protect the beaches. These are natural materials and complement and enhance the natural environment. We also need to study whether sands out of the river bottom can be dredged up in key places to repair beaches and create new beaches in areas that are likely not to suffer from water or wind erosion. Beach erosion must be minimized to provide sediment balance. Passive operational changes will not accomplish this purpose, only postpone the losses. Even that effort will fail as uncontrolled side canyon floods continue to wash away remaining beaches.

We know that low flows in the river strand trout and reduce spawning success. Yet, we don't know whether stranding is a major problem. Low flow impacts need to be compared to impacts from fishing regulations. Stranding needs to be compared to catch/release impacts. Even a catch release program results in a 7% mortality. And stranding needs to be compared to the effects of the current State rule allowing anyone to take 2 fish out of the river each day they're there. Recently, Arizona Game and Fish enacted a new slot limit rule. There is evidence that it is already having a beneficial effect. Thus, fishing regulations can make a significant contribution to improving the trout fishery.

70% of the trout that are caught at Lee Ferry are planted there by the Arizona Game & Fish Department. Yet, anglers want more river-spawned trout. The fishing pressure is extraordinary. But why does the State allow this heavy fishing pressure during spawning season?

The study we are asking the Bureau to fund for the Arizona Game & Fish Department will allow them to examine the possibility of changing the type of trout they plant in the river. That management strategy might allow higher flows in the river to correspond with spawning time. Selective planting might also narrow the spawning cycle, making it possible to closely manage flows during that sensitive period without doing constant harm to power production and possibly other resources.

Everyone agrees that some non-commercial boats have trouble getting from Lee Ferry to prime fishing spots during periods of low flow. There is a sand bar three miles upstream. The EIS should look at dredging here during a period of high flow and sending that sand downstream where it might possibly do some good, both as in-stream material and possible new beach material.

Everyone agrees that the EIS should consider the conservation measures identified to help the humpback chub, the endangered species found at the mouth of the Little Colorado River. Human activity can also have adverse impacts. The EIS should also examine closing the river to recreation between Lee Ferry and the Little Colorado during the period that the chub spawn, usually mid-May.

Striped bass have now migrated up the river from Lake Mead at least as far as the mouth of Havasu Creek. The EIS should examine what to do about controlling the striped bass in the Grand Canyon before they migrate further upriver and attack the chub and trout populations.

Some people complain that low flows in the river cause the rafters' boats to crowd around popular places and make the trip through the Canyon unpleasant. CREDA representatives were included on the GCES river trips last summer. They didn't have any trouble with flows. But on one trip, when the GCES Team got to Tapeats Creek, they couldn't get off. There were too many rubber boats jamming up the mouth of the creek. It had nothing to do with flows. It had to do with too many people being in one place at one time. The EIS should examine the management of the river permit system. Perhaps there are just too many people allowed to go through that Canyon every summer and maybe the Park Service limit on permits is too high. The EIS should examine the effects of all those people trampling up and down the beaches and through the riparian habitat. Maybe there are too many motorized trips on the river which make it too easy for too many people to crowd along the river. We are not suggesting that you do away with the motorized trips on the river, as some have in the past. But it is obviously faster and easier for people to travel through the Grand Canyon on the commercial motorized rafts than it is on oared rafts. The EIS should examine restricting the number of motorized raft trips as a method of controlling overcrowding.

Fixing these problems is going to take money. It is going to take money now and it is going to take money in the future. We, the public power users, are already financially committed to this process. The EIS should examine ways other users could also contribute to funding these solutions. The EIS should examine the possibility of placing surcharges on fishing licenses to help the Lee Ferry fishery in the future and on rafter permits to provide money to maintain and repair the beaches and other popular areas along the river primarily impacted by human incursion. The beaches are a resource primarily of benefit to rafters floating through the Canyon. Archaeological sites, trails, side canyons, water falls, springs and other popular areas off the river are primarily impacted by commercial rafting customers' visits. Shouldn't these users contribute to maintaining these resources?

It has been our experience that people who merely complain don't contribute much to a process. We plan to be actively involved. We are looking for constructive, thoughtful solutions to be proposed and debated. We want practical solutions to immediate problems and carefully defined studies to find solutions to problems that are going to take more time. We want the least cost alternatives that work to be identified and then we want them implemented. We want answers and we want action.

Reclamation has received considerable comment about the 2-year time frame that the Secretary has set for this EIS process. For our part, we're going to try to make it work because we still remember all the people complaining that the studies were taking too long and that no decisions were being made. People wanted an EIS process to bring this matter to closure and to do so within a specific time. Now we've got the process and the time frame and people are now complaining it's too short. It may be. But we're going to try to make it work and see how far we can get. But make no mistake, our goal is to have a valid process produce an adequate Environmental Impact Statement so the Secretary can make a reasoned decision. If 2 years won't do that, we will be in the front of the line telling the Secretary he has to add more time to the process. And when the process is completed, we are still going to be there, seeing to it that the solutions are implemented and that the further studies that need to be done get done. There are some questions for which there are no short-term answers. That is no reason to put off finding answers to questions where you can and doing something about them.



**CREDA**

COLORADO RIVER ENERGY DISTRIBUTORS ASSOCIATION

CONF. 90-21393  
FLDR # 20990

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May 3, 1990

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Date	Initials	To
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Subs. Corresp. \_\_\_\_\_  
Date Ans'd \_\_\_\_\_

**ARIZONA**  
Arizona Municipal Power Users Association  
Arizona Power Authority  
Arizona Power Pooling Association  
Irrigation and Electrical Districts Association  
Navajo Tribal Utility Authority (also New Mexico, Utah)  
Salt River Project

**COLORADO**  
City of Colorado Springs  
Platte River Power Authority  
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Colorado River Commission of Nevada  
Silver State Power Association

**NEW MEXICO**  
Farmington Electric Utility System  
Plains Electric Generation & Transmission Cooperative (also Arizona)  
Truth or Consequences

**UTAH**  
Intermountain Consumer Power Association (also Arizona)  
City of Provo  
Strawberry Water Users Association  
Utah Municipal Power Agency

**WYOMING**  
Wyoming Municipal Power Agency

**CLIFFORD BARRETT**  
Executive Director  
City Centre 1, Suite 1000  
175 East 400 South  
Salt Lake City, Utah 84111

Mr. Roland G. Robison  
Regional Director  
Upper Colorado Regional Office  
U.S. Bureau of Reclamation  
P.O. Box 11568  
Salt Lake City, Utah 84147

Re: Scoping the Glen Canyon Dam Environmental Impact Statement

Dear Mr. Robison:

As you know, CREDA has been actively participating in the scoping meetings the Bureau has been conducting over the last several months. We have also filed several statements with you as part of that process. The following comments are primarily directed at the scope of the inquiry that we feel is necessary in order for Reclamation to produce an adequate environmental impact statement.

Time Frame

We understand you are considering extending the two-year time frame for completing this process. Given the status of scoping efforts, the delay in the test flows (now to begin in June), the lack of results from last fall's test flow studies, the lack of results from the Arizona Game and Fish Department's ongoing study and other delays, we can understand the need for extending the time frame.

Study Area

We continue to support the definition of the primary study area to be the riverine habitat below Glen Canyon Dam to Separation Rapid. Every EIS must have a focus. Focusing on this study area will also allow a finite analysis of the economic impact of changes in operation at Glen Canyon Dam as part of the logical impact assessment of possible alternatives. Other impact areas that have been called to your attention in this process can be properly assessed in the analysis of cumulative impacts. This latter analysis is required by the relevant law and regulations in any event. Retaining the study area already proposed is vital to completion of the EIS process in anything approaching a reasonable time frame.

Mr. Roland G. Robison  
May 3, 1990  
Page 2

### Types of Alternatives

We were pleased to note in the testimony filed on behalf of the Department at the April 26 hearing of the House Water and Power Subcommittee that the Secretary has confirmed his intent to have Reclamation study all reasonable alternatives to the current operation of Glen Canyon Dam, including structural and non-structural alternatives. As you know, we have been quite concerned that current staff efforts at the regional level have been focused solely on assessing impacts of operational changes at Glen Canyon Dam. Non-operational alternatives must also be assessed in order for all reasonable alternatives to be included in the EIS. We would hope that Reclamation would begin "staffing up" to consider these non-operational alternatives as soon as possible. In order to assist in developing your analysis of all alternatives, we are enclosing lists of these alternatives gleaned from our files and our records of the scoping process. Not all of these may turn out to be reasonable alternatives when examined, and we may have missed some. Nevertheless, the EIS process calls for a decisional screening of alternatives in order to develop a finite number for inclusion in the draft EIS and solicitation of further public comment. These lists are, in our view, a place to start.

### Combination of Alternatives

We continue to believe that the ultimate solutions to the varied problems that have been identified in the study area require combinations of alternatives in order to provide benefits to the varied and somewhat conflicting resource values already noted. We believe that an approach examining and comparing strategies for mitigating impacts and the relative costs of these strategies will quickly allow Reclamation to identify certain combinations that conflict and certain combinations that complement each other in addressing these impacts. It would be important to develop a matrix early on in the process that identifies which strategies address which areas, which of them are in conflict and which of them can be combined compatibly. This will not only promote intelligent analysis but will probably save a great deal of time in screening the wide variety and considerable number of suggestions you have already received.

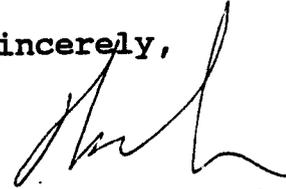
### Public Input

Finally, we would appreciate knowing what process you intend to employ to garner further public input on the development and analysis of strategies and alternatives. We think that it is vitally important that this process be conducted in an open and forthright manner in full public view and that communication with all affected interests be maintained at a high level.

Mr. Roland G. Robison  
May 3, 1990  
Page 3

Thank you for the opportunity to provide these additional comments.

Sincerely,



Robert S. Lynch  
Environmental Impact  
Statement Coordinator

RSL:psr  
Enclosure  
cc w/enc:  
cc:

Dennis Underwood, Commissioner of Reclamation  
Thaine Michie, CREDA President  
Cliff Barrett, CREDA Executive Director  
Environmental Studies Work Group

C10155

## Suggested Alternatives

### for Scoping the Glen Canyon Dam EIS

1. The "No Action" Alternative
  - a. 1000/3000 cfs minimum releases winter/summer limits.
  - b. 31,500 cfs maximum release limit.
  - c. No daily restrictions on variations within maximum and minimums.
  - d. Current ramping rates (hourly change limits) per WSCC Guidelines.
  - e. No restriction on ability of system to react to emergencies.
  
2. Operational Alternatives
  - a. Changes to low flow limits seasonally/annually/monthly.
  - b. Changes to maximum release limit seasonally/annually/monthly.
    - 1) Upward to maximum generating capability (33,200 cfs).
    - 2) Downward incrementally seasonally/annually/monthly.
  - c. Restrictions on daily variations seasonally/annually/monthly/weekly/daily.
  - d. Restrictions on ramping rates seasonally/annually/monthly/weekly/daily.
  - e. Restrictions on emergency response criteria.
  - f. Increments of a. through e. defined by limits of observable differences to flows/impacts from variations tested.
  - g. Changes to monthly water release volumes.
  
3. Non-operational Non-structural Alternatives
  - a. Alter fishing regulations for Lee Ferry fishery.
  - b. Alter trout stocking volume for Lee Ferry fishery.
  - c. Alter trout species/strains through selective stocking.
  - d. Enhance forage base in Lee Ferry fishery.
  - e. Mark channel above Lee Ferry.
  - f. Control striped bass and other potential chub predators.
  - g. Monitor Little Colorado River re water flows, quality.
  - h. Define and implement conservation measures for humpback chub in the Little Colorado River, coordinate with Upper Colorado River conservation efforts.
  - i. Alter the Colorado River Management Plan (NPS) for the Grand Canyon National Park.
  - j. Alter NPS management guidelines for the Glen Canyon National Recreation Area below Glen Canyon Dam.
  - k. Institute fee systems to support monitoring and research related to specific resources.
  - l. Identify and define monitoring programs concerning resources, actions and impacts that require further study to quantify.

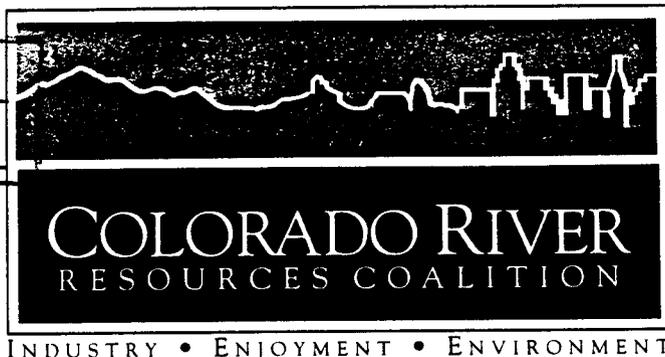
010155

4. Non-operational Structural Alternatives

- a. Re-regulating structure (below Glen Canyon Dam.
- b. Variable intake structure(s) at Glen Canyon Dam.
- c. Slurry pipeline from above Lake Powell to Glen Canyon Dam afterbay.
- d. Re-regulating dam on Little Colorado River above chub spawning area.
- e. New access road to Lee Ferry fishery to avoid 3-mile bar with new boat landing.
- f. Enhance low flow channel above Lee Ferry.
- g. Alter streambed areas where trout are trapped at low flows.
- h. Lower gravel bars used as spawning areas which are uncovered at low flows.
- i. Reconfigure beach slopes to facilitate water loading/unloading.
- j. Protect beaches with natural materials (rock, native vegetation).
- k. Rebuild beaches with river sediment.
- l. Establish new beaches in areas needed.

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CONT. # 7554  
ORDER # 20790



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Date	Initials	To
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Subs. Corresp. \_\_\_\_\_  
Date Ans'd \_\_\_\_\_

0185

STATEMENT OF THE COLORADO RIVER RESOURCES COALITION  
CONCERNING THE GLEN CANYON DAM ENVIRONMENTAL IMPACT STATEMENT  
SCOPING PROCESS

Washington, D.C.  
March 27, 1990

The Glen Canyon Dam is the heart of the Colorado River Storage Project system and helps supply vital power, water and recreational resources to residents of many rural regions of the Colorado River Basin states of Wyoming, Utah, Colorado, New Mexico, Nevada, Arizona and California. Until recently, there was no formal organization to represent the interests of these "end users" of Colorado River resources. On March 2, 1990 the Colorado River Resources Coalition was formed to represent the interests of not only those citizens who depend directly on resources provided by the Glen Canyon Dam, but also the entire population of 22 million residents of the seven Colorado River basin states who have come to rely on river resources as an important part of their daily lives.

Many have said that the issue of limiting fluctuations in river flow from the Glen Canyon Dam is a simple question of the affect of water flows on the pleasure and safety of 22,000 rafters below the dam and sandy beaches for them to use versus the interests of large power companies which supply

10 SOCIAL HALL AVE  
ALT LAKE CITY, UTAH  
4111  
21-350-3258

electricity to run air conditioners in Phoenix and Los Angeles. In reality, however, most Glen Canyon power recipients are not affluent urbanites who dwell in large metropolitan areas, but are residents of hundreds of rural communities and those who live on thousands of small farms in the upper Colorado River Basin. Glen Canyon power is distributed to these customers by either consumer-owned utilities or rural electric cooperatives that make no profit and deliver the electricity at cost.

In addition to power generation, important water issues are also directly linked to the operation of the Colorado River. The nations driest states lie in the Colorado River Basin and depend on the river as a vital water resource. In the upper Colorado River region, small farms and rural communities depend on the river as a major source of this scarce and much-needed resource. Some of the most productive fruit and vegetable growing areas in the nation are located along the lower Colorado River and rely heavily on the river as an important irrigation supply.

With an understanding of how Colorado River resources are allocated and how they are used, it becomes clear that the Glen Canyon issue is not simple. The present operation of the river at Glen Canyon is a complex web of interwoven needs, agreements and compromises that have been worked out over many decades. The present use of the Colorado River is already a compromise between the full development potential of the river and justifiable environmental concerns. Because of environmental issues, many

elements of the overall plan for the Colorado River, such as the Echo Park, Marble Canyon and Hualapai dams have not been pursued. Therefore, the Glen Canyon Dam and its current operation represent an important compromise and balancing of all the issues involved.

The Colorado River supplies the rural communities and farmers in the surrounding area with a basic necessity of civilized and modern living. The mandate of "electric power . . . as a servant of the people" of rural America was established by President Franklin Roosevelt in 1936 with the creation of the Rural Electrification Administration. Through the establishment of rural electric cooperatives and other consumer-owned electric utilities, Glen Canyon Dam power users are under heavy obligations to repay the federal government for the development of the dam. As a result, these power recipients depend on an adequate and timely supply of power from the generating system for which they are currently paying.

Colorado River water users in these rural regions are also under similar obligations to repay development costs of the Colorado River water projects. Changes in water flows and power supplies could have a negative spill-over effect for water users as well as power consumers. Many irrigation projects are currently paid for, in part, from power revenues.

Reasonably-priced power and water delivered when they are needed are vital to the economic development of the rural areas served by these projects. Any developments that would affect

power rates could have a severe negative impact on the farms and communities in this area, many of which are in economic trouble.

When examined in this context, it is apparent that any changes in the operation of river will have the greatest economic impact on people of low to middle income levels who reside in the rural areas and depend most heavily on river resources. An interesting contrast evolves when the economic status of the majority of recipients of Colorado River resources is compared with the income level of consumers of white-water rafting trips down the Grand Canyon. The rafting companies who operate in the canyon are a multi-million dollar industry. It becomes clear that those who use the canyon for recreational purposes and pay (or are paid) \$1,500 to \$2,000 per river trip are largely a wealthy minority who want to take control of the river at the cost of a very large majority of moderate means who depend on river resources for their every-day sustenance.

The present management program for the use and flow of the waters of the Colorado has been studied, negotiated and agreed upon over the past hundred years. It has been just eight months since Interior Secretary Manuel Lujan, Jr. called for the development of a comprehensive Environmental Impact Statement to study this complex, comprehensive management program. Yet, there are already those who are calling for changes in operations before the EIS is completed.

This is patently out of line for several important reasons. First, the scientific studies done to date do not support the assumption that the existing operations are solely responsible

for degradation of the beaches in the canyon. The value of changing the pattern of flows has not been scientifically established.

Second, the research that is being done to establish the affects of varying water-flow patterns requires the ability of the research teams to vary the patterns during these test periods so the comparative results of water scheduling can be properly examined and documented. Premature and arbitrary changes in operation would preclude this vital part of the EIS process.

Third, the changing of the present power-generation program without making a complete set of alternative plans for providing the peaking power that the river now provides jeopardizes the electrical power supply of the West during its highest demand periods. If any such changes are eventually to be made, they must be made in concert with an overall plan to accommodate the needs of all people of the area.

Fourth, a scientific, open and public process is now under way for considering all of the possible options for the management of the river and the consequences of those options. This legislatively-designed process is a good, fair system. It would not be appropriate for Congress at this point to substitute an arbitrary change in that process by substituting its judgement for that of those who have been given the responsibility of studying the issue and making sound, scientifically-, sociologically- and ecologically-considered decisions.

Another factor that must be considered in the development of the EIS is the cost and environmental impact of alternative

energy sources if power production at Glen Canyon Dam is reduced. The burning of coal or other fossil fuels is expensive and could have a detrimental impact on the air quality and other aspects of the environment.

The Colorado River Resources Coalition asks the Bureau of Reclamation to consider the complexity of all the issues involved when conducting its study for the Glen Canyon Dam Environmental Impact Statement. The operation of Glen Canyon Dam is a many-faceted operation that involves an intricate system of interconnected relationships. Recipients of Colorado River resources, who have few good choices or alternatives if their supply of water or power is negatively affected, must be given adequate consideration. The development of an accurate and objective Environmental Impact Statement and the alternatives that it incorporates is a complex undertaking with vast implications for the West and indeed for the entire country.

We realize there are important issues dealing with the ecology and natural resources of the canyon as they are affected by Glen Canyon dam operations. Obviously, these do need to be carefully addressed in the EIS process.

The Coalition will do everything it can to help the Bureau do this job well.

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May 2, 1990

Glen Canyon Dam Environmental  
Impact Statement  
U.S. Bureau of Reclamation  
P.O. Box 11568  
Salt Lake City, Utah 84147

Dear Sirs:

This letter is submitted on behalf of the Colorado River Water Conservation District, the principal water policy body for Colorado, west of the Continental Divide and north of the San Juan Mountains. The purpose of the letter is to provide comments on the scope of the Glen Canyon Dam Environmental Impact Statement (EIS).

It is imperative that a clear purpose for the EIS be established from the outset, and that a proposed Federal Action be identified to focus and direct the studies in being conducted for the EIS. This EIS is an outgrowth of the Glen Canyon Environmental Studies (GCES) which were initiated in 1982, and have continued since that time. The lack of a clear objective has hampered Reclamation's ability to take the data generated from those studies and generate a decision document. In Secretary Lujan's July 27, 1989 news release announcing that an EIS would be prepared, it was stated that the EIS would focus on impacts "on the downstream environmental and ecological resources of the Glen Canyon National Recreation Area and the Grand Canyon National Park." We agree that the scope should be limited geographically, but want to ensure that the impacts of any potential changes on both Lake Powell and Lake Mead be fully evaluated. Both of these reservoirs have significant water storage, compact delivery and recreation use features, and it is imperative that the scope, although limited to the power operations, assess the secondary impacts.

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Glen Canyon Dam Environmental  
Impact Statement  
U.S. Bureau of Reclamation  
May 2, 1990  
Page Two

As stated in Reclamation's March 1990 "Background Paper" on the EIS, Glen Canyon Dam's impacts on the downstream resources in the Glen Canyon National Recreation Area and in the Grand Canyon National Park are due primarily to daily and weekly fluctuations in power plant operations. Thus, the EIS should emphasize the analysis of the impacts of these daily and weekly power operations. Monthly and annual water operations fall out of the domain of the power operations, lie well within the historic (pre-development) flow ranges, and are governed by interstate compact requirements. If, for any reason, these operations are examined, then a baseline must be assumed which requires protection of the water conservation storage at Lake Powell for compact development purposes.

With respect to the alternatives to be studied, we urge that a full range of structural and non-structural alternatives be examined, with the "no action" alternative being existing power operations. The structural alternatives to be examined should include, among other things, the possibility of a regulating reservoir below Glen Canyon Dam and the potential of pumped storage within the CRSP system to provide the lost "peaking power" capacity. An assessment of the environmental impacts, costs, and permitting issues associated with these alternatives should be conducted. The non-structural alternatives should include not only changes in power operations (with its associated changes in demand management), but also changes in the other "man-made" activities which may be adversely affecting the environmental and ecological resources downstream of Glen Canyon Dam (e.g., stocking of non-native fish species, fishing regulations, allocation of permits for float trips and camping trips in the Grand Canyon, relocation of rest sites and camping sites, and dispersment of users, etc.). The addition of selective withdrawal "risers" to the upstream face of Glen Canyon Dam has been proposed as a way to mitigate the impacts of the cold releases on the native fishes in the Grand Canyon. The effects of this action on water quality and evaporation in both Lake Powell and Lake Mead must be fully evaluated.

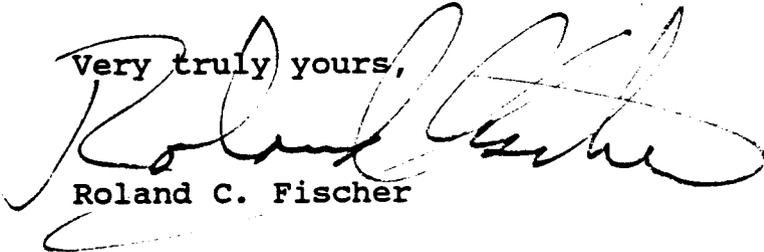
Evaluation of the "no action", structural, and non-structural alternatives must consider economic and social, as well as environmental, impacts. The River District urges Reclamation to be mindful of the multiple benefits to diverse beneficiaries which are provided through the existence of Glen Canyon Dam. There will, inevitably, be tradeoffs among competing interests and demands which must be made. It is imperative that the EIS fully disclose all of these tradeoffs, so that any Secretarial decision is made through information, not emotion.

Glen Canyon Dam Environmental  
Impact Statement  
U.S. Bureau of Reclamation  
May 2, 1990  
Page Three

In summary, the River District wishes to reiterate that the EIS should concentrate on the impacts of **daily and weekly power operations** on the environment downstream of Glen Canyon Dam. Alternatives which go beyond this should be configured such that seasonal and annual water deliveries are not impacted, and should be evaluated in their impacts to Lake Powell and Lake Mead. Further geographic expansion would only serve to obfuscate the key issues, and undesirably lengthen the time frame necessary to complete the EIS.

Thank you for the opportunity to comment on the scope of the Glen Canyon Dam EIS. We will be closely following this process.

Very truly yours,



Roland C. Fischer

10536

-63-

# Columbus Electric Cooperative, Inc.

P.O. BOX 631 / DEMING, NEW MEXICO 88031  
Telephone (505) 546-8838 or 546-8839

April 20, 1990

The Honorable Manuel Lujan, Jr.  
Secretary of the Interior  
Room 6151  
C Street between 18th & 19th Streets, N.W.  
Washington, D.C. 20240

RECEIVED SECRETARY OF THE INTERIOR OFFICIAL FILE	
MAY 02 '90	
Date	7/5

Dear Secretary Lujan,

Columbus Electric Cooperative, Inc. is a small rural electric distribution cooperative serving sparsely populated southwestern New Mexico.

With less than two consumers per mile of line, Columbus Electric has in the past and continues to serve our rural people reliable electric power at reasonable cost.

Columbus Electric is a full power requirements member of Plains Electric Generation and Transmission Cooperative, Inc. As such, Columbus is one of the beneficiaries of power generated at the Colorado River Storage Project at Glen Canyon Dam.

We are very concerned that the management of this essential resource will be severely impaired by the demands of a relatively few environmental extremists that have proposed immediate operating restrictions on Glen Canyon Dam. Columbus Electric has always been sensitive to environmental concerns; many of our members are farmers and ranchers who have very real economic, traditional and social ties to a healthy physical environment. Life here is hard enough without further burdening our troubled economic realities with reactionary controls and disastrous legislation.

We appeal to you to use the same good common sense you have always shown in your many years of distinguished public service. We are not wealthy people, nor are we large in number. Please don't allow our very real problem with this situation to go unnoticed.

Thank you for your wise representation.

Respectfully,



M.D. Fletcher  
General Manager

007356

MDF/ds

cc: Sen. Jeff Bingaman  
502 Hart Building  
Washington, D.C. 20516

Rep. Joe Skeen  
1007 Loneworth Building  
Washington, D.C. 20516

**Continental Divide Electric Cooperative, Inc.**  
CONT. # 70015448  
FLDR # 20691  
P. O. BOX 1087  
GRANTS, NEW MEXICO 87020

TELEPHONE 285-6656

COMMUNITY OWNED  
COMMUNITY BUILT  
COMMUNITY BUILDER

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April 19, 1990

The Honorable Manuel Lujan, Jr.  
Secretary of the Interior  
Room 6151  
C Street between 18th and 19th Streets, N.W.  
Washington, D. C. 20240

Honorable Manuel Lujan Jr.:

The Glen Canyon Dam is the heart of the Colorado River storage system and helps supply vital power, water and recreational resources to many rural residents in the State of New Mexico as well as other surrounding states. As one of those 22 million "end users" who depend on resources provided by the Glen Canyon Dam respectfully request that when decisions are made concerning the management of the Glen Canyon Dam, we are not forgotten.

Environmental extremists are claiming water released from the dam are damaging downstream environment of the Grand Canyon. They are therefore pushing for limiting options to operational changes in connection with the Glen Canyon Dam Environmental Impact Statement (EIS) that is currently being prepared by the Bureau of Reclamation.

Many have said that the issue of limiting fluctuations in river flow from the Glen Canyon Dam is a simple question of the affect of water flows in the pleasure and safety of 22,000 rafters below the dam and sandy beaches for them to uses versus the interest of large power companies which supply electricity to run air conditioners in Phoenix and Los Angeles. In reality, however, most Glen Canyon power recipients are not rich urbanites, but residents of hundreds of rural communities such as the area in around Grants, New Mexico, who are served by a rural electric cooperative (Continental Divide Electric), that makes no profit and only purpose is to provide a basic necessity of civilized and modern living. The mandate of "electric power . . . as a servant of the people" of rural America was established by President Franklin Roosevelt in 1936 with the creation of the REA. Glen Canyon Dam power users are under heavy obligations to repay the federal government for the development of the dam. As a result these power recipients depend on an adequate and timely supply of power from the generating system, for which they are currently paying.

Colorado River water users in these rural areas are also under similar obligations to repay development cost of the Colorado River Projects. Change in the water flows and power supplies could have a negative expect for water users as well as power consumers. Many irrigation projects are currently paid for, in part, from power revenues.

Reasonably-priced power and water delivered when they are needed are vital to the economic development of rural areas like Grants, New Mexico. Any developments that would affect power rates could have a severe negative impact on communities in this area, all of which are in economic trouble.

When examined in this context, it is apparent that any changes in the operation of the river will have the greatest impact on people of low to middle income levels, who reside in the rural areas and depend most heavily on river resources.

The present management program for the use and flow of the waters have been studied, negotiated and agreed upon over the past 100 years. It was just a few months ago that you called for the development of a comprehension Environmental Impact Statement to study the complex management program. Yet there are those who are already calling for changes in operations before the Environmental Impact Statement is completed.

This is out of line because the scientific studies done to date do not support the assumption that the existing operations are solely responsible for degradation of beaches in the canyon. Premature and arbitrary changes in operation would preclude the vital part of the Environmental Impact Statement process.

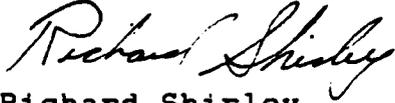
Also the changing of the present power-generation program without making a complete set of alternative plans for providing peaking power that the river now provides jeopardizes the electric power supply of the West during the highest demand periods.

A scientific, opened and public process is now under way for considering all the possible options for management of the river. The process is a good and fair system. It would not be appropriate for Congress to substitute arbitrary changes in the process of substituting its judgment for that of those who have been given the responsibility of studying the issue and making sound, scientifically-, sociologically-and ecologically- considered decisions.

Thank you for taking the time to read and consider the above concerns.

Sincerely,

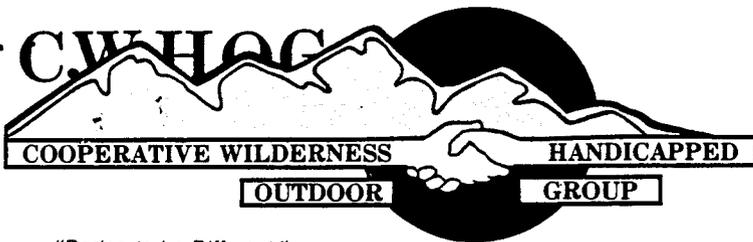
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COOPERATIVE, INC.



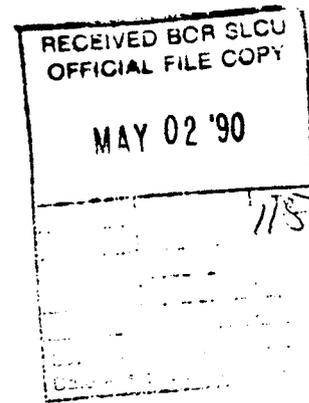
Richard Shirley  
Administrative Assistant

RS/cvs

cc: Dennis B. Underwood  
Roland G. Robinson  
The Honorable Morris K. Udall  
The Honorable Don Young  
The Honorable George Miller  
The Honorable Denny Smith  
The Honorable Bill Richardson  
The Honorable Pete Domenici  
The Honorable J. Bennett Johnston  
The Honorable James A. McClure  
The Honorable Bill Bradley  
The Honorable Conrad Burns  
The Honorable Jeff Bingaman



"Daring to be Different."



April 17, 1990 90018455  
CONF #  
FILE # 28990

Manuel Lujan  
Secretary of the Interior  
Department of the Interior  
18th & C Street  
Washington D.C., 20240

Dear Mr. Lujan:

RE: Glen Canyon Dam Environmental Impact Statement

As your staff prepares the EIS for the Glen Canyon Dam, it is important that they take under consideration the needs of disabled Americans.

River running is an important recreational activity which allows individuals with disabilities the mobility that is restricted in other areas of life. Over the past nine years, several hundred disabled have learned kayaking and rafting through the C.W. HOG program alone. This doesn't count the hundreds of others involved in other programs or learning such skills on their own. At the same time, we have found that river running is a highly potent form of therapy, and we expect it to continue to grow in popularity among special populations.

A run through the Grand Canyon represents the pinnacle experience in river running among the public as a whole and among disabled in particular. Our group has taken two trips down the Colorado with a majority of participants having disabilities.

There is no doubt that Glen Canyon Dam has an adverse effect on the Grand Canyon and the riparian environment. The peaking load operation of the dam causes steep banks and erodes beaches and in some cases prevents shore access altogether by special populations. Rapid flow reductions in the river leave boats parked high on mud flats, further adding the barriers faced by the disabled.

Our philosophy is one where the disabled prepare and work to meet natural obstacles by adapting themselves, not by adapting nature. But the problems on the Grand Canyon are not caused by nature. In natural rivers, long gradually sloped beaches are formed by seasonal reductions in water volumes, ideal for disabled access.

EARL POND STUDENT UNION

IDAHO STATE UNIVERSITY

C07396



P. O. Box 8118

Pocatello, Idaho 83209

Phone: 208-236-3912

Page 2  
4/17/90

In summary, we are concern about the operation of Glen Canyon Dam and how continued release practices prevent access to the Grand Canyon by an important part of the nation's population. Please keep us advised on the progress of your work.

Sincerely,



Ron Watters, Administrator  
C.W. HOG

RW/ks

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**ORIGINAL**

UTAH 20 IRON  
 REA PROJECT

**DIXIE - ESCALANTE RURAL ELECTRIC ASSOCIATION, INC.**

(801) 439-5311 • BERYL, UTAH 84714

April 11, 1990

Glen Canyon Dam Environmental Impact Statement  
 U.S. Bureau of Reclamation  
 P.O. Box 11568  
 Salt Lake City, Utah 84147

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Gentlemen,

Several issues, in my opinion, are pertinent to the GCD-EIS process:

1. Rules of operation for Glen Canyon Dam have been long established for the benefit of the American people, now it appears pressure is being brought to bear by environmental groups to alter the basic rules of operations. As if it weren't bad enough of some groups trying to change the rules in the middle of the game, the electrical ratepayers end up being the ones to pay for the EIS.

We have heard a great deal from river running interests as to how they would like to operate GCD but have they helped underwrite the costs of operation, the compilation of the EIS or other factors dealing with GCD or the Colorado River?

2. Some issues being raised by environmental groups do not consider the fact that no project can be all things to all people, the Bureau of Reclamation must recognize ANY change will adversely affect some interest group.

3. Once this EIS has been completed will the American public be subjected to additional onslaughts of environmental abuse or will the controversies be quieted?

In respect to the scoping process:

1. Weighted priorities need to be considered when evaluating alternatives for operations of the dam. For example, how valuable is it to provide sand bars for tourists and river runners to sleep on as opposed to providing millions of people with electricity from a non-polluting and renewable source?

2. The operation of GCD and the ecological future of the Grand Canyon area need to be considered based solely on factual data. Some environmental groups play to the emotional side of issues but that approach should have no place in the final determination of the environmental studies being conducted.

Thank you very much for the opportunity of providing input into your scoping process.

Sincerely,

M. Royce Jones  
 Director of Public Relations and Economic Development  
 145 West Brigham Road  
 St. George, Utah 84770  
 (801) 673-3297

006270



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Wirehand # 70990  
FLDR # \_\_\_\_\_

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UTAH 20 IRON  
REA PROJECT

# DIXIE - ESCALANTE RURAL ELECTRIC ASSOCIATION, INC.

(801) 439-5311 • BERYL, UTAH 84714

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Date	Initials	To
		715

Initials: \_\_\_\_\_  
Date: \_\_\_\_\_

11 April, 1990

Glen Canyon Dam Environmental Impact Statement  
U.S. Bureau of Reclamation  
P.O. Box 11568  
Salt Lake City, Utah 84147

Dear Sirs:

I am Mical "J" Terry, a consumer of the power that flows from the Glen Canyon Project, and also an engineer who works for Dixie Escalante R.E.A., Inc., a power cooperative which supplies power to some 4,000 residents and farmers of the southwestern Utah area.

In my position with the cooperative, I work quite extensively in the C&RE area, helping consumers to more efficiently use the valuable resource that we have access to through the Glen Canyon Project. We spend a lot of time and money going into individuals homes to assist them in lowering their demand for electricity, and to aid them in lowering their overall consumption of the resource. We have an extensive water heater load-shedding program which lowers our demand for peaking power at critical times.

We also install, at little or no cost, load management systems in the homes of those who have demand problems. Dixie Escalante operates on demand rates in all rate classes. This in itself is a conservation tool which encourages more efficient use of such a valuable resource. Many of the systems we install are microprocessor based systems which manage their total power usage. This enables them to lower their power costs, and assists us in lowering our overall demand requirements during peak times.

We also assist farmers with pump efficiency, and encourage development of more efficient ways to irrigate their crops through sprinkler application and other cost effective measures.

The reason for the above recitation is to point out that despite the views of many people who are responding to this E.I.S., the power companies are doing much to conserve and make proper use of this resource. Many think that by raising the price of the resource is the only way to effect conservation, but we know this to not be true. Rate structures can do this as well as anything. People appreciate the resource available, and feel they have paid the costs for many years now and have earned the right to its continued use.

We also realize and support the effort to effectively look at all the issues affecting the E.I.S., and hope that if changes need

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to be made in the operation of the dam, that those who benefit from those changes will bear their fair share of the financial burden. Many people enjoy the benefits of that national treasure and the resources it supplies, but think power should pay all the costs because of the "lucrative business" in which they are involved. This seems to be a very short-sighted view based on the fact that we distribute the power at no profit to our consumers. Many of those we serve are in an economically depressed area or business, and cannot stand additional costs that would be created as a result of the changes desired by many special interest groups who propose changes to benefit their own businesses which turn great profits for them and their associates. Furthermore, the proposals to drain the lake and tear down the dam would result in one of the greatest losses this society could suffer.

The effects of varying water flows on the environment have been addressed in many forums. These have been given the blame for the degradation of the ecosystem in the canyon with no mention about the ill effects of all those who visit the interior of the canyon as tourists in varying forms. These people, who do much of the complaining, seem to have as much of an effect on the ecosystem and its well being as any other group or individual. I too appreciate the grandeur of that marvelous phenomenon of nature, but also realize the importance of its products: power, water, recreation, and sports, as well as many others. The ability to harness that tremendous river, control the floods, and conserve the water for times of greater need has been a great blessing to the Western United States. The byproduct may be power, but it pays most of the costs for all those who enjoy, including the tourists.

I support Western its efforts to fairly evaluate the E.I.S: in relation to all issues connected to that facility, and trust that all parties will be dealt with in a just manner. I appreciate the opportunity to address those issues I feel are pertinent, and hope to stay involved in the process.

Sincerely,



Mical "J" Terry  
Engineering & Planning

- 72 -

CONT. #

90-18127

ORIGINAL

RECEIVED BY MAIL  
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FLDR #

20990

WRITTEN COMMENT

APR 19 '90

GLEN CANYON DAM ENVIRONMENTAL IMPACT STATEMENT

P10300 SCOPING  
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In addition to (or instead of) verbal comments at this public meeting, we invite you to submit written comments on your concerns about issues and policy options for the operation criteria for the Glen Canyon dam, including operational, structural, and non-structural considerations. The purpose of this phase of the environmental impact statement (EIS) process is to identify the range of issues that should be addressed in the EIS. Your written comments will assist the Bureau of Reclamation in identifying the scope of issues to be addressed in the development of the EIS.

Please also indicate your name, address, and affiliation (if any) so that we may keep you informed of Glen Canyon EIS developments.

Name (please print) Evan J. Woodbury -  
Affiliation (if any) Alpic-Escalante Rural Electric Assn, Inc  
Address 2505 S. 3220 E, St. George, Utah 84770  
(801) 673-2420

Comments on Glen Canyon EIS issues: We all desire to protect the environment and enhance this world that we live in. We must decide which of the possibilities available are most important in the overall picture. Electricity is one of the most essential uses that we have and let's have as much use as we can without polluting the environment that we live in.

The life style of a good many thousands of our people is more important than a few hundreds or a few thousands.

It is power that pays the cost of most of the benefits derived from Glen Canyon Dam.

Comments on Possible Policy Options: and there is no pollution.  
Water power is by far the best way to extract electrical energy, no pollution of our environment what so ever.

007275

(Over)

This electrical power pays for the dam, its operation and makes some of these other uses possible that could not be properly conducted before the dam construction.

There is no doubt that the present operation of the flow from the dam causes some problems that would be better avoided, but all things can not be both ways.

It is important that we do what we can to keep pollution down in this world of ours that is rapidly becoming over polluted.

Evan J. Woodbury  
25055. 3220 E.  
St. George, Utah 84770  
(801) 673-4210

Written comments on the scope of the Glen Canyon Environmental Impact Statement are welcome and will be accepted at the meetings or by mail until April 16, 1990. Written comments should be addressed to:

Glen Canyon Dam Environmental Impact Statement  
U.S. Bureau of Reclamation  
P.O. Box 11568  
Salt Lake City, Utah 84147

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# DIXIE - ESCALANTE RURAL ELECTRIC ASSOCIATION, INC.

(801) 439-5311 • BERYL, UTAH 84714

**C10057**

25 April 1990

Glen Canyon Environmental Impact Statement  
U S Bureau of Reclamation  
P O Box 11568  
Salt Lake City, Utah 84147

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Dear Sirs;

I am general manager for a rural electric cooperative and consider myself to be an environmentally conscientious person. The company that I work for has spent millions of dollars protecting the environment. It is my sincere opinion that the Glen Canyon Dam is a facility which greatly protects the environment of the canyon. Were it not for the dam, the floods of 1983 would have had a devastating effect on the canyon.

The proposed interim flows are not compatible with the demand of power users. If the proposed interim flow becomes a reality, it will adversely affect the cost of power thereby causing economic impacts to all public power users and to the region's economy. I would strongly suggest that the proposed interim flow not be put into effect for the above reason, and also because interim flows degrade the scientific studies of the EIS and presupposes the outcome of the studies. The integrity of the EIS process must be upheld by consideration of 'normal' operations.

If power costs increase, relative to the threat of the proposed interim flow, there would be a serious threat to the competitiveness of public power. With power from the CRSP, as a part of the blended cost of power, we have been able to maintain a competitive status, but without it that status is definately threatened.

I ask that the EIS process be fully open, and that solutions be effective, balanced, and based on scientific evidence.

Sincerely,  
R. Leon Bowler

General Mgr.

APR 25 '90

WRITTEN COMMENT

GLEN CANYON DAM ENVIRONMENTAL IMPACT STATEMENT

SCOPING

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CONT. # \_\_\_\_\_

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In addition to (or instead of) verbal comments at this public meeting, we invite you to submit written comments on your concerns about issues and policy options for the operation criteria for the Glen Canyon dam, including operational, structural, and non-structural considerations. The purpose of this phase of the environmental impact statement (EIS) process is to identify the range of issues that should be addressed in the EIS. Your written comments will assist the Bureau of Reclamation in identifying the scope of issues to be addressed in the development of the EIS.

Please also indicate your name, address, and affiliation (if any) so that we may keep you informed of Glen Canyon EIS developments.

Name (please print) CRAIG A. CLARK  
 Affiliation (if any) DIXIE ESCALANTE R E A DIRECTOR  
 Address P O BOX 65  
NEW CASTLE, UTAH 84756

Comments on Glen Canyon EIS issues: The issues of concern on the Glen Canyon EIS seem to be that the operation of the power plant at the dam is destroying the Grand Canyon ecosystem and the beaches along the river where the river rafters camp; disturbing the white water rafting, and spoiling a blue ribbon trout fishery, and among other things making a profit from the generation of power from power plant at the dam.

None of these things would be possible or in existence if the dam were not there.

It is because the dam is there that the rafters have a river they can raft on. Before the dam was constructed rafting as we know it today was not possible. The river fluctuated wildly from in excess of 100,000 CFS in spring floods to a low of less than 3,000 CFS in fall and winter.

Accusations are made that the river is being "devastated for the sake of profit"

Comments on Possible Policy Options: by the generation of power. The power revenues are what pay for the dam, while the river runner concessionaires are making the big profits from the river and paying none of the costs.

Because the dam is there the fishermen have a blue ribbon trout stream that was not in existence before. Trout could not live in the warm muddy water.

Because the dam is there the ecosystem in the bottom of the Grand Canyon has been enhanced and stabilized. If there is any damage to the ecosystem it is from too many people tramping around in the canyon. Congressman Millers statements that the operation of the dam is causing the river to ruin the Grand Canyon by scouring out its bottom is unfounded and ridiculous, how does he think the canyon was made, the river with its natural wild fluctuating flows made the canyon, how can it ruin it?

Because of the dam we have the magnificent Glen Canyon Recreation Area and the beautiful Lake Powel that is enjoyed by hundreds of thousands of people.

Where are our "priorities"? Why should we be forced to appease a small group of radical environmentalists and a few profit oriented river rafters that come along 27 years after the dam is built and want to change the operation at the expense of hundreds of thousands of power users. Congress has just passed a Clean Air bill. It would be ludicrous to cut back on the generation of the environmentally cleanest and the most non consumptive hydro power, and make up the difference with coal fired air poluting alternatives. It is absolutly imperative that we make the maximum use of hydro generating capacity.

The control of the river and the operation of its several dams are mandated by compacts and laws dating back for several decades to 1922. These laws and regulations termed "the law of the river" affect millions of people in several states in the upper and lower Colorado river basins. Have we come to the point where the recreation of a small group of extremists is more important than the needs of society?

If the outcome of this EIS dictates modifying the peaking power generation then the recreation interests should pay the full cost of the lost generating capacity. If this EIS dictates that mitigating sturctures be built then the full cost of such structures should be born by the ones causing the structures to be built and the ones benefiting from the changes, namely the river rafters and the recreationists. This is only fair and reasonable. I see no logical or rational reason to change the operation of the dam and power plant.

*Graig A. Clark*  
Director, Dive Escalante REA.

Written comments on the scope of the Glen Canyon Environmental Impact Statement are welcome and will be accepted at the meetings or by mail until April 16, 1990. Written comments should be addressed to:

Glen Canyon Dam Environmental Impact Statement  
U.S. Bureau of Reclamation  
P.O. Box 11568  
Salt Lake City, Utah 84147

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April 26 1990

A written Comment on the Glen Canyon Dam Environmental Impact Statement (E.I.S.)

Dear Sirs,

Just a few thoughts on the E.I.S.  
Please keep in mind that we are dealing with much of the economy of the western state.

As Pres. of the Board of Dixie Escalante R.E.A. and a farmer who's irrigation depends on low cost power, which come from W.A.P.A., it is very important to keep the management of the dam as it is.

Please keep in mind we are the best fed nation in the world. This all comes from farmers who are efficient in their farming operations. If the environmentalist keep attacking the farmers & ranchers they will be ~~standing~~ standing in line to buy a loaf of bread instead of running the river.

The Grand Canyon is very important to everyone, but so is the power generation. Farmers is hurting to, and fast becoming extinct also.

6484

We encourage you to allow W.A.P.A.  
to manage this resource to the best  
of everyone's benefit.

Sincerely

Darwin Hulet Pres of D E R E A  
Box 195  
New Castle, vt 84756

Mrs ReVoe Hulet

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an international treasure without equal. The Colorado River, with its beaches, fish and riparian habitat, is the heart of the canyon. It both needs and deserves protection for future generations.

The EIS needs to focus on the tradeoff between the environmental benefits and the economic impacts of changing operations of the dam. The process should be completed in a timely manner and not be encumbered by evaluating structural alternatives such as building a re-regulation dam or performing beach augmentation to prevent loss of sand. Such additional considerations would cause unwarranted delay in meeting environmental objectives. If they eventually turn out to have independent merit, they can always be factored into future amendments to the operating regulations.

It is true that impacts to the value of power generation are in fact likely to occur if Glen Canyon Dam is operated for the benefit of downstream resources. It should be noted, however, that there would be no loss in the total amount of electricity produced. Some of the electricity would be produced at different times, causing Western Area Power Administration and its customers to make changes to their operations. These changes could take many forms. Such changes are by no means limited to construction of more fossil-fuel-burning power plants.

Replacement cost for loss of capacity at Glen Canyon Dam due to any change in operations should be estimated on a least-cost basis, which gives full consideration to conservation and other demand-side measures for ameliorating power losses. The GCES "Prototype" study, which explored methods for evaluating the cost to power users of changing operations, only considered building fossil fuel burning plants to replace any loss of capacity. Such limitations, if carried through the EIS process, not only could lead to a mistaken assessment of the true consequences of changing operations, but also could lead to unnecessary air pollution, including acid rain, contribution to global warming through emission of carbon dioxide, and/or increased reliance on foreign oil.

It is therefore both environmentally and economically important that energy efficiency, load management and alternative energy sources be given full consideration in cost estimates due to any change in operations. If a potential change of operations would result in loss of firm capacity, then the costs should be estimated for replacing that capacity by conservation measures as well as by building new fossil fuel-burning-capacity. The extra effort required to perform utility-specific analyses would be well invested due to potentially significant dollar savings and decreased pollution.

Such alternatives to building more thermal generating capacity should include but not be limited to:

#### Energy efficiency

Retrofitting or replacing electric hot water heaters to operate on solar power when available.

Retrofitting or replacing commercial and industrial lighting with more efficient lighting, including compact fluorescent lamps, high-efficiency fluorescent lamps, tungsten halogen lamps, and infrared-reflecting-film lamps.

Use of electronic controls to reduce lighting needs.

Reduction of space conditioning energy requirements through insulation, infiltration reduction, low emissivity windows, storm windows, etc.

Rebate programs for customers who purchase energy efficient appliances and motors, including heating, ventilation and air-conditioning equipment.

#### Load Management

Implementation of varying prices according to time of day for electricity used for ground water pumping. Equipment to pump water off-peak may be more cost effective than building new generating capacity.

Implementation of varying time-of-day use charges for other categories of customers as well, corresponding to the varying cost of producing electricity on- or off-peak.

#### Alternative Sources

Cogeneration: Assess suitable industrial sites which might be converted to cogeneration facilities.

Solar: Utility scale solar power is currently a commercial option in southern California.

EDF stands ready to assist the Bureau of Reclamation, the Western Area Power Administration and others in making appropriate evaluations of these economic factors. Thank you again for this opportunity to comment.

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To: Glen Canyon Environmental Impact Statement  
U.S. Bureau of Reclamation  
P.O. Box 11568  
Salt Lake City, Utah 84147

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Statement: Of Flowell Electric Association, Inc.  
Star Route Box 180 - 495 North 3200 West  
Fillmore, Utah 84631

For: The Environmental Impact Statement of Glen Canyon Dam

I attended the March 21, 1990 public meeting for comments on the scope of the Glen Canyon Environmental Impact Statement. From the comments at the meeting it is evident that there are several diverse interests in the operation of Glen Canyon Dam. All interests need to be addressed in the EIS and a proper importance placed on them for the best general good of the people as a whole. We sympathize with the burden of the work you have to do but we also have confidence in the EIS process and those who work on it, and that a satisfactory and rational balance will be maintained for the operation of Glen Canyon Dam.

Flowell Electric Association is a small rural electric cooperative serving customers in East Millard County. We have 357 total customers, 207 farm Residential customers and 150 electric irrigation pump services. Our farms are mostly small family farms and dependent on irrigation to raise their crops. The local economy of the area is largely dependant on the farm income for its vitality. This makes the cost of electricity for pumping a life or death issue for our whole service area.

We have purchased CRSP power since the completion of the project and it is the stable source of power that has kept the cost of power for irrigation affordable over the years.

To illustrate this point below is a table showing our 1989 wholesale power costs from Flowell's power suppliers:

	Colorado River Storage Project Power	Deseret Generation & Transmission Power
KWH's Used	11,206,046	6,416,591
Demand Charges	\$66,500	\$351,648
Energy Charges	\$56,030	\$152,669
Wheeling	\$11,651	\$ 66,528
Other Charges	\$ 7,299	(\$153,803) Incentive Rate Credit 1 year only
Total Cost	\$141,480	\$417,042
Average Cost per KWH	1.26c	6.50c
Average Cost per KWH both Source	3.2c	

You can see the consequences to Flowell if the CRSP power source is curtailed because of drastic changes in river flows through Glen Canyon Dam which would drastically change the power produced or drastically change the cost per kwh to satisfy or fund special interest functions. For each 1% reduction in CRSP power costs Flowell \$9969. To replace 100% of our CRSP power would cost \$996,930 and would be a 281% increase in the cost of power over 1989.

If we translate these costs to the customers - Retail rates would go up to a average cost of 10.87c per kwh or an increase of 200%. Our average Residential - Farm customer uses 1500 kwh's per month, with culinary water systems being a large requirement of rural farms. The average customer would have a monthly power bill of \$163 with many in the \$250 to \$700 a month range. But the increase in irrigation costs would force the irrigators to convert to diesel fuel and the loss of the irrigation load for Flowell and probably many farms would be abandoned.

There is a need for conservation of power so it is not wasted but conservation cannot replace all the energy needed to produce food and other necessities of life for the people in rural Utah. If CRSP power is reduced to an insignificant power source the effect will be seen to the economy of Utah and in the whole western United States.

In conclusion we believe the continued operation of Glen Canyon Dam to maximize the production of power both for the end retail user and production of revenue for the government to cover the authorized repayments and other public benefits including recreation, fishing, boating, and national parks. The benefits of maximum production of power are of the utmost importance and hope that they will be properly evaluated in the Glen Canyon Environmental Impact Statement.

Respectfully Submitted:

Board of Directors  
Flowell Electric Association, Inc.





FRIENDS  
OF THE  
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Testimony of  
Friends of the River Foundation  
and Friends of the River Inc.  
on the

Scope of the  
Glen Canyon Dam  
Environmental Impact Statement

March 27, 1990  
Washington D.C. Public Hearings  
Prepared by: Kevin Wolf, Senior Staff

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Friends of the River thanks the Secretary of the Interior for ordering that the Bureau of Reclamation finally begin the long needed and much asked for Environmental Impact Statement (E.I.S.) on their operation of Glen Canyon Dam as a peak load power facility. We look forward to helping make this E.I.S. the high quality document the Grand Canyon deserves.

The recent five year report from the Glen Canyon Environmental Studies (GCES) put to rest the issue of whether the Dam was causing damage downstream in the National Park. All sides agree that operating the Dam as a peak load power facility damages, perhaps permanently, the environment downstream. This damage includes erosion of beaches, population losses of fish and wildlife and, in possible violation of the National Endangered Species act, the endangerment of the threatened native Humpback Chub. And river recreation is seriously degraded, with accompanying increased safety risks.

The scientists studying the problem are fairly united in their belief that the less the river floods over time and the less it fluctuates on a daily basis, the better will be the environmental health of the river corridor. One of the most significant objectives of the E.I.S. will be to provide the public with the information needed to choose between various Dam operation strategies. Achieving that goal requires that the lead agencies research and answer the following questions, and provide analysis of the following Alternatives:

**QUESTIONS**

1. If Glen Canyon Dam, which is presently operated to maximize peak load power production, was operated under a "base load" schedule, how much more base load power could be produced? If this increased base load power was used to offset coal, a major regional source of base load power, how much less sulfur dioxide and particulates would be produced? The burning of coal at the Navajo Power Plant is the major source of pollution in the Grand Canyon National Park.
2. In analyzing the economic impacts of a "base load" power alternative and

other non-peak load maximizing Alternatives, please answer the following

- a. How much of the present peak load power production is used to pump water to farms and agricultural water districts? How much of this pumping could be done during off-peak hours?
- b. How much does it presently cost recipient utilities to purchase Glen Canyon Dam peak load and off-peak power? List all federal subsidies - such as subsidized interest rates, and long pay back periods - that effect power rates. Examine what the cost of the power would be without any subsidies. What would the rate be if it were sold on the "free market".
- c. What would be the effect on energy use if Glen Canyon Dam power was sold at a non-subsidized "market" rate? How price sensitive is power use? Most studies show that when power is not subsidized it is used more efficiently. Could the resulting estimated energy savings make up for the decreased peak load power production? What are regional market rates for power? (Presently the government sells Glen Canyon power for less than one cent per kilowatt hour. This is around one fourth of market wholesale rates in the regional area.

3. In analyzing the alternative sources for peak load power, if the dam was converted to a "base load" facility, please answer the following:

- a. How much energy do the recipient utilities use per person/business/farm? How does this compare to other utilities in the same area that pay market rates for power?
- b. If the Bureau of Reclamation took the annual amount of federal dollars in the subsidy of Glen Canyon power and invested it in helping recipient utilities purchase highly efficient water pumps, major appliances and other high energy use machines, how much energy could be saved?
- d. How could peak load management programs be improved to make up for the potential lost peak load power?
- e. How else might this loss of peak power be made up by renewable, non-thermal sources of energy?

4. How can the Glen Canyon and Hoover Dam operating criteria be changed to allow for increased protection to the river corridor in between?

#### ALTERNATIVES

A. Document the downstream damage that accompanies each flow release schedule. Provide an economic analysis of how much power sale revenues the government and recipient public utilities would receive from each Alternative schedule. Analyze what schedule would be the best for the downstream environment.

B. Analyze operation of the Dam as a "base load" power facility with seasonally adjusted high and low flow releases in a schedule that maximizes the downstream values. "Base load" means that water is released through the

turbines to generate power on a steady, even basis night and day. "Seasonally adjusted" means that base load releases might be higher or lower in a different month depending on the seasonal needs of downstream fish, wildlife, beaches and recreation. The first five years of Grand Canyon Environmental Studies indicates that this Alternative would be best for the downstream environment.

C. Analyze a "Sand Slurry Pipeline" alternative that brings sand from the far end of Lake Powell around Glen Canyon Dam and deposits it into the Colorado River downstream. How could this help solve the long term need to resupply the river with some of the sand that is presently trapped behind Glen Canyon Dam? How could the dam be operated to maximize the protection and rejuvenation of the downstream environment with sand and silt being added back into the natural system?

D. Analyze operating the dam with a greater degree of downstream flood control protection. The Grand Canyon Environmental Studies documented that uncontrolled "flood events" heavily damage the downstream environment. Glen Canyon Dam is presently operated such that uncontrolled "flood events" will occur on the average of every 20 years. The E.I.S. should analyze how greater flood protection (40, 50, 70, and 100 year intervals between "flood events") would increase protection for the downstream environment and what its impact would be on energy and water production.

#### ADDITIONAL COMMENTS

Regarding the overall E.I.S. process, we make the following comments:

1. Remove the Bureau of Reclamation as lead agency in the E.I.S. They are too historically and emotionally attached to operating the dam as a peak load power facility. Make the Department of the Interior the leader of the process with the National Park Service, Fish and Wildlife, the Western Area Power Authority and the Bureau equal players.
2. Give the E.I.S. team an additional year to produce the draft and final E.I.S. We see the Bureau's present completion date of December 1991 as unrealistic given the complexity and detail of the research and analysis needed to do a thorough E.I.S. Worse, we believe the Bureau has promised this unlikely finish date as a way to deter Congress from legislating interim flow protection for the Grand Canyon.
3. Use the Secretary of the Interior's discretionary powers to grant immediate relief for the Canyon from the peak load fluctuations during the duration of the E.I.S. Ensure, as best as possible, that there will be little or no more damage done to the fisheries, beaches and wildlife downstream while the Environmental Impact Studies continue.

The Grand Canyon is truly one of the world's greatest wonders. Our nation's commitment to its health and long term protection are measures of our commitment to future generations and to our fragile planet. We are not so desperate for the income from the peak load power, nor so bereft of alternative sources for replacing this power that we should risk harming the heart and soul of the Grand Canyon National Park. Our national heritage is at stake.

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Mr. Roland G. Robison, Director  
Upper Colorado River Region  
Bureau of Reclamation  
U.S. Department of the Interior  
P.O. Box 11568  
Salt Lake City, UT 84147

Dear Mr. Robison:

My name is Isabell Barlow and I am a cooperative member of the Garkane Power Association which provides electric service to communities in Southeastern Utah.

Garkane is a member of the Intermountain Consumer Power Association. ICPA administers power from the Colorado River Storage Project for rural electric cooperatives and municipal electric utilities in Utah, Wyoming, Colorado, Arizona and Nevada.

We are extremely concerned about HR 4498, a bill being introduced by Congressman George Miller of California and Congressman Wayne Owens of Utah. The bill insists that an emergency condition exists on the Colorado River and that we must change the operation of the river immediately by altering interim flows before grave damage is done.

We refute this argument as follows:

1. Three studies are being conducted in this regard: GCES phase 1, GCES phase 2 and an EIS. ICPA supports and is paying for these studies in power rates. We think an EIS that properly follows NEPA will arrive at a correct scientific conclusion regarding the way the river is being managed.
2. Immediate interim flows would distort and impede a proper EIS.
3. Scientific data gathered to date as part of the Glen Canyon Environmental Studies (GCES) did not find that an emergency exists which requires action at this time.
4. A recently published draft report of the U.S. Fish and Wildlife Service noted a number of environmental benefits existing because of the dam, namely a flourishing population of Bald Eagles, Peregrine Falcon and Willow Fly-Catchers. The eagles and falcons are

attracted by the large trout population which also did not exist before the dam.

5. The 22,000 rafters and boaters who float down the river each year complain about the degradation of beaches. However, a National Park Service study of 227 beaches in the Grand Canyon over the last 10 years concluded that there was a 34 percent decrease in small campsites, a 84 percent increase in medium campsites and a 10 percent decrease in large campsites. Hardly a devastation of emergency proportion.

6. So who is harmed? Not Wildlife, not fisheries, not beaches.

Only public power who is also being asked to pay for the studies.

Please use your influence to stop the interim flow regimes.  
Please do not change management of the river without reason.

Thank you,

*Isabell Barlow*  
PO Box 187  
Colorado City AZ  
86021

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**Grand Canyon River Guides**  
P.O. Box 1934  
Flagstaff, AZ 86002  
(602) 779-1526

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**Glen Canyon Environmental Impact Statement**  
**Scoping Session**  
**Phoenix, AZ**  
**March 14, 1990**

- Good evening. My name is Tom Meedy and I am speaking tonight on behalf of Grand Canyon River Guides.
- Grand Canyon River Guides is an organization of professional river guides in Grand Canyon. Many of our 200 guide members have worked in the Canyon for more than 20 years. Together we represent a cumulative total of over 2000 years of first-hand experience to changes on the Colorado River.
- We are vitally interested in the longterm well being of the Colorado River of Grand Canyon. Two years of study is not enough time to completely understand a system as complex as this.
  - The preferred alternative of this Environmental Impact Statement must include the directive and funding for an ongoing monitoring program that will allow operations at Glen Canyon Dam to be finetuned to meet the evolving needs of the Colorado River.
  - And it should implement new operating criteria as soon as possible to eliminate further damage to downstream resources.
- There is no doubt that a change is in order. Operations of Glen Canyon Dam over the past 25 years have had serious negative impacts on the downstream resources in Grand Canyon.
  - Native fishes gone forever.
  - Devastating flood releases.
  - Extreme daily fluctuations.
  - Half of the pre-dam beaches eroded away.
  - And high releases, even within the dam's present generating capacity, carry valuable sediments downstream and out of the system forever.
- In 1988 the Bureau of Reclamation's own Glen Canyon Environmental Studies identified these impacts and recommended flow modifications to mitigate them. But operations at Glen Canyon Dam have not changed and the damage continues at this very moment.
- We are in favor of operational alternatives, adopting water releases from the dam which will enhance the downstream resources. But we do not favor structural solutions. Holding dams, armoring beaches, etc. are to be examined if, and only if, operational solutions are shown to be completely unworkable.
- In the pursuit of operational solutions we support the effort underway in this EIS to study the effects of low, steady, and fluctuating flows. These are critical to understanding the total system. But we also urge that the following flow modifications be included in the scope of studies:

- **Limit peak generating flows to 20,000cfs to allow more sediment to accumulate in the system make more camping beaches available.**
- **Careful flood releases that could energize and redeposit main channel sediments to the beaches.**
- **But will this two year study find an answer to our questions? Will the preferred alternative's flow releases benefit these resources over time? We think not. In reality we cannot even confidently predict needs of the near future. Had this EIS been done in 1980, there would have been no mention of the Bald Eagle, the symbol of America and an endangered species. For there were no residents prior to that time. But in the early 80's a healthy trout population at a small tributary in the Canyon began attracting a few birds. This year dozens of Bald Eagles are wintering there. Changes in this system must be monitored and operations of the Dam must be flexible enough to adapt to such changes.**
- **There are positive aspects to the existence of Glen Canyon Dam. We recognize the value of water storage and power production. However Glen Canyon Dam is being operated for water and power resources only. Consideration must be given to downstream resources. This is a neglected concept, not a new one.**
- **The Colorado River Basin Act, passed by Congress in 1968, established operating criteria for Glen Canyon Dam. It stated that the generation and sale of electrical power shall be incidental to the storage of water, controlling of flooding, providing for basic public outdoor recreation facilities, and improving conditions for fish and wildlife. And this isn't any ordinary stretch of river, this is Grand Canyon National Park!**
- **And improving downstream resources won't adversely affect power generation either. Electrical generation is determined by the volume of water, not the manner in which it is released. A steady, year round flow will produce as much electricity as fluctuating flows.**
- **The Colorado River is a complex system. Integrating the diverse and dynamic demands will not be easy. The answer will not appear at the end of this EIS. This system is constantly changing and operations must be monitored, managed, adjusted, and remonitored.**
- **Our preferred alternative is one that creates a flexible management program that integrates and enhances all the resources of Glen Canyon Dam and the Colorado River of Grand Canyon. And these operational changes must be implemented as soon as possible.**
  - Thank you very much.

*Tom Meedy*

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FLDR # 20990

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GLEN CANYON DAM ENVIRONMENTAL IMPACT STATEMENT

SCOPING HEARING TESTIMONY

by  
**Jim Ruch, Executive Vice President  
GRAND CANYON TRUST**

March 15, 1990 - Flagstaff, Arizona

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I - Introduction

The Grand Canyon Trust appreciates the initiation of the Environmental Impact Statement on Glen Canyon Dam operations, and this opportunity to contribute to the scoping process.

II - The Issue

The present operation of Glen Canyon Dam as a load following - peaking power facility is causing serious and irreparable damage to the resource and recreational values of the Grand Canyon. A change in dam operations is required to avoid or minimize these impacts.

III - History and Background

Despite the 1956 and 1968 Colorado River Project Acts under which Glen Canyon Dam was built and is operated, which give priority to fish and wildlife and recreational values, current operations subjugate these values to the maximization of peaking power production. Starting in 1982, with the generator upgrade, the Dept. of the Interior has been "studying" the impacts of dam operation on downstream environmental and recreational resources.

Those Glen Canyon Environmental Studies, and reviews of those studies, have documented serious damage that is occurring in the Grand Canyon to environmental and recreational values. They also state that operational changes would mitigate that damage.

Based on mounting public concern and the demands of Arizona's congressional delegation led by Senator John McCain, the Secretary of the Interior ordered in July of 1989, the preparation of an EIS to help determine what changes in the operation of Glen Canyon Dam should be made to protect the downstream environment.

## IV - Substantive Scoping Issues

Impacts to the following resource values must be addressed and resolved in the EIS. It is essential that the resolution of these impacts not be treated separately, but that a preferred alternative be developed which addresses the avoidance and minimization of the these impacts, both short term and cumulative, in an integrated plan for dam operations.

1. Beach erosion and loss.
2. Degradation of a stable and healthy riparian ecosystem including soils, vegetation, fish and wildlife values.
3. Threats to endangered species, particularly the humpback chub.
4. Decline of the trout fishery, including impacts on recruitment, productivity, quality and fishability.
5. Impairment of the unique and extraordinary wild and natural quality of the recreational experience along the Colorado River in Grand Canyon National Park, both for river floaters and hikers.

Operational, rather than structural approaches to resolving these impacts should be given priority. Proposals to solve these problems by building concrete platforms in lieu of camping beaches, or by building additional dams in the canyon, are contrary to the purposes for which the Grand Canyon National Park was established by Congress. They are not reasonable alternatives and should not be considered in the EIS. This does not exclude all structural considerations. Alternative peaking power facilities such as the Spring Canyon pumped storage project ought to be included. The feasibility of sediment augmentation deserves analysis. However, the underlying values of the resources of the Canyon and the irreplaceable experience they provide must be paramount in the development of alternatives.

Even those structural alternatives that may reasonably be considered are likely to require additional environmental analysis and legislation before they could be constructed. The resulting delay could further degrade the resources of the Canyon. Therefore consideration of any such measures must include immediate operational changes to provide the maximum interim protection.

Operating alternatives for Glen Canyon Dam should take into account the dynamic nature of the River and flows from the Upper Basin. Changes from year to year, required to provide releases in accordance with the "law of the river", should be based upon:

A. criteria which will optimize environmental and recreational values downstream in an integrated way relative to projected annual inflows; and,

B. effective participation in the annual operating decision by the fish and wildlife, recreation, and environmental interests of the basin states.

Further, the preferred alternative in the EIS should assure the continuance of a sound, scientific, interdisciplinary program to monitor the condition of fish and wildlife, environmental and recreational resources in the canyon; and must use that information in refining criteria and operational decisions in the future.

#### V - Procedural Issues

##### 1. EIS time frame.

The original EIS announcement proposed that the Draft EIS be completed by the end of 1991, with a final decision late in 1992. In keeping with the need to get on with a decision in a timely manner while providing sufficient time to prepare a scientifically based, sound document on which an appropriate decision could be based, that was a reasonable approach. The subsequent change which calls for completion of the Final EIS and a decision by the end of 1991 is not reasonably possible. It will shortcut both the research and data gathering effort, the development of reasoned recommendations, and adequate interagency and public review, comment and consideration. The target for final EIS and decision completion should be changed back to the end of 1992.

##### 2. Research flows.

A request for flows needed to complete the minimum field studies for an adequate EIS has been proposed. These flows must be assured immediately along with a guarantee of such additional flows as may be discovered to be necessary for research during the study period. Once sufficient studies have been completed, pending the final dam operation decision by the Secretary of the Interior, a flow regime which is based on the best knowledge

available at that time, to protect the resource values of the Grand Canyon, within the "law of the river", should be implemented and maintained until the final decision is placed in effect.

### 3. Western Area Power Administration EIS.

WAPA is required to prepare an EIS on the impacts of power marketing, and thus dam operations, throughout the Colorado River storage project area, and has indicated that EIS will be initiated in the summer or fall of 1990. The relationship and coordination between that process and the Glen Canyon Dam EIS must be clearly expressed.

### 4. Interagency coordination.

Effective communication and involvement of the Federal Cooperating Agencies is essential to the success of this EIS effort, as is the involvement of the Arizona Game and Fish Department under the provisions of the Fish and Wildlife Coordination Act. The working relationships of these agencies in the EIS process needs to be publicly stated in an operating memorandum of understanding to assure effective involvement. The decision by the Bureau of Reclamation to not grant cooperating agency status to the Arizona Game and Fish Department is not proper. That agency is legally responsible for the fish and wildlife resources affected by the project, and is centrally involved in research and data gathering. Cooperating agency status should be granted at once.

## VI - Economics and Intentions

The Grand Canyon Trust, a regional, non-profit organization advocating the responsible conservation of the natural resources of the Colorado Plateau, applauds the Secretary of the Interior and the Bureau of Reclamation for recognizing the damage being caused to the resources of the Grand Canyon by the operation of Glen Canyon Dam, and for initiating this EIS to determine and implement changes to protect those resources. However, The decision to initiate an EIS does not, in itself, protect anything. Because of the importance of the ultimate decision about dam operations we have two particular areas of concern. The first deals with the approach to the economics of power production; the second with the attitude and real intentions of the Bureau of Reclamation.

First, from an economic standpoint, operational changes which reduce the availability of peaking power from Glen

Canyon Dam, (although not the total amount of power that can be produced) could increase the cost of power to preference right public power customers. That is perfectly appropriate for two reasons:

1. The costs of protecting the environment should be borne by those who are benefitting by the actions that degrade the environment. Such costs clearly fall within the criteria that call for setting the lowest possible rates consistent with sound business practices.

2. The present rates charged by WAPA constitute a subsidy to public power users who are paying significantly less than other utilities and power users in the west. It is not appropriate for such a subsidy to be provided at the expense of the loss of the resource values of the Grand Canyon. It is certainly not fair to ratepayers with private and investor-owned utilities throughout the west who are paying realistic rates for the cost of doing business.

Secondly, while we fully support the public intent of the Secretary's decision to act, there is a growing concern about the Bureau of Reclamation's actions. These include:

1. The Bureau dropped its intent to: "develop a set of environmental criteria that will be used by the Department of the Interior during the development of the Annual Operating Plan for the operation of Glen Canyon Dam." This important change occurred without comment between the October 27 Federal Register notice of intent to prepare a draft EIS and the February 23 announcement of scoping hearings.

2. The Bureau's rejection of the request by the Arizona Game and Fish Department to serve as a cooperating agency.

3. The changes in language in the public "background paper" that were ordered by the Commissioner of Reclamation because of complaints by CREEDA, the public power lobbying organization. These changes included placing significantly greater emphasis on "structural" alternatives.

4. The inordinate difficulty Reclamation has had in putting an EIS team together with 4 different team leaders before the hearings.

5. The delay by Reclamation and WAPA in assuring study flows needed for the vital research program.

No one of these issues is an overwhelming indictment of the Bureau's approach, in itself. Taken together, however, they begin to form the basis of real concern. Our intention is to work in a positive way with the Bureau to solve a serious problem, and we would like to feel confident about the direction the Bureau is going and the quality of their efforts.

#### VII - Conclusion

So, in conclusion we believe that the issue and the direction to be taken are clear, and we urge the Bureau to act accordingly. The destruction and degradation of the Grand Canyon that is occurring, along with the resource values that need protection, are known. They are being specifically identified in this EIS scoping process. The additional information that is needed to protect these resources most efficiently and effectively must be gathered in a sound, scientifically valid manner. The EIS should put forward a preferred alternative that provides an integrated plan of protection for the resources. And, finally, the operation of Glen Canyon Dam must be changed as expeditiously as possible in accordance with that plan.

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APR 25 '90

Date	Initials	To
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Subs. Corresp.		
Date Ans'd		

Martin Litton's  
**GREAT RIVER JOURNEYS**

P.O. Box 7538, Menlo Park, California 94026  
 Telephone 415/854-6616

16 April 1990

Glen Canyon Dam Environmental Impact Statement  
 Bureau of Reclamation  
 125 South State Street  
 P. O. Box 11568  
 Salt Lake City, Utah 84147

**610039**

Ladies and Gentlemen:

I have been closely related to the Colorado River in the Grand Canyon since 1939. Since Glen Canyon Dam went into operation, I have carefully observed the effects it has wrought on the River's riparian zone (including sand beaches) throughout the Canyon.

By far the greater part of the material of which the banks and beaches were composed before 1963 is now gone, as you must know.

The principal reason for this depletion is not the occasional occurrence of high volume in the river over sustained periods (there has been only one such period, actually, during which the dam did not contain the flow), but the more insidious, more subtle, less noticed daily rise and fall of water.

Thus, on most days of the year, the banks and beaches are soaked, to become soft and heavy and weakened. Then the level of the water is lowered at a rapid and extremely unnatural rate, so that the water inside the banks (which have been transformed into a mushy goo) rushes out and down into the river, creating newly eroded gullies every time, into which the wet upper levels of the banks collapse under the simple force of gravity.

Anyone passing along the river can observe this process and its effects at any time. Unlike the former annual ebb and flow, the daily tide allows no opportunity for the banks to be stabilized through natural processes. The cracking, sagging, and slumping of the banks, with the consequent steady creeping of the lost material into the bed of the river to be carried downstream, is not violent or spectacular, but it is by far the major factor in the loss of beaches and of plant and animal riparian habitat.

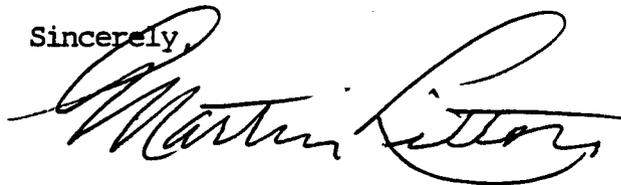
This effect will be alleviated only by the establishment of steady flows, rising gradually in the spring and summer and declining gradually to a winter low, with no discernible daily fluctuations. My testimony before the House Subcommittee on National Parks in 1982 is still to the point, with minor modifications in statistics possible because of subsequent events.

To most Americans, the Grand Canyon is infinitely more important than peaking power out of Glen Canyon Dam--especially in view of the fact that the peaking power can be obtained just as efficiently, if not more so, from Hoover Dam. When I asked Mr. David Crandall, former Regional Director of Reclamation in Salt Lake City, why the peaking power in question was not to be produced by Hoover, he replied that it was certainly true that from the point of view of all Americans, production at Hoover Dam would be much preferable, but then the

credit for the added revenue would go into the Lower Basin account and would not show in the Upper Basin's ledger. Clearly, he was being honest, but...

What a reason for destroying the integrity of the Grand Canyon!

Sincerely,

A handwritten signature in cursive script that reads "Martin Litton". The signature is written in dark ink and is positioned to the right of the word "Sincerely,".

Martin Litton

C10040<sup>39</sup>

# FEDERATION OF WESTERN OUTDOOR CLUBS

Established for Mutual Service and for the Promotion of the Proper Use, Enjoyment and Protection of America's Scenic, Wilderness and Outdoor Recreation Resources

1981 - 1982



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## STATEMENT OF MARTIN LITTON, PRESIDENT OF THE FEDERATION OF WESTERN OUTDOOR CLUBS, BEFORE THE HOUSE INTERIOR AND INSULAR AFFAIRS SUBCOMMITTEE ON PUBLIC LANDS AND NATIONAL PARKS, FEBRUARY 4, 1982.

I am Martin Litton, President of the Federation of Western Outdoor Clubs, which is a federation of 42 organizations with an aggregate membership of approximately 300,000 persons.

Our position is that relatively short-term issues such as superficial upkeep, "development," and the presence or absence of visitor facilities are not the most pressing problems facing the national parks. These issues are rather easily addressed when compared to the long-range specters of insufficient physical area to withstand future visitor impact, of boundaries inadequate to provide for a measure of ecological integrity, and of a national park system poorly shielded by the Interior Department against external threats, some of them from within the Department itself.

In view of the limited time today, I shall address just one of those issues--the plight of the Colorado River in Grand Canyon National Park.

The life artery--indeed, the very architect--of the most celebrated natural feature of this planet is being methodically, capriciously, needlessly destroyed by the Interior Department's Bureau of Reclamation at the direction of the Western Area Power Administration in direct contravention of the spirit if not the letter of national park law. The issue is "peaking-power" generation, whereby water released through Glen Canyon Dam surges crazily through the Grand Canyon at volumes which commonly range between 3,000 and 25,000 cubic feet per second in a 24-hour period and may actually go from 1,000 cfs to 32,000 cfs and back

again in the course of a single day.

Without having observed the river's patterns in the Canyon for a period of 30 years, as I have, one might find it difficult to comprehend the extent of the devastation. The ongoing effects and the prospects for the future have been described by scientific authorities in various fields, but if you remember the ever-so-gradual rise and ebb of the undammed river from season to season, the vistas along the stream as it coursed majestically around and past the succession of broad beaches swept clean and clear of foreign plants by the annual tide, the shade of vigorous stands of thick-boled honey mesquite thriving along the upper limit of that once-a-year irrigation, resident Canada geese taking their downy goslings for that first swim away from the security of those anchored nests afloat on the steady current, the human voyagers confident in the knowledge that the level of the next day's river would not vary more than an inch or two from that of yesterday's--if you remember these things and more, some of the present appraisals of the effects of operational methods at Glen Canyon Dam must seem weak and timid indeed.

In the past quarter-century the Congress has consistently defended elements of the national park system against the construction of new major dams within their borders. Teamed with intermountain senators and representatives, the Bureau of Reclamation and its one-time overseer, former Secretary of the Interior Douglas McKay, affirmed flatly that there could be no development of the Upper Colorado River Basin, and no implementation of the Colorado River compact among the states, without the erection and operation of Echo Park Dam, in Dinosaur National Monument. Congress did not believe that, and eliminated Echo Park Dam once and for all.

Again, the Bureau of Reclamation pressed for two dams--so-called Marble and Bridge Canyon, or Hualapai--in the Grand Canyon, as essential to full utilization of the Colorado. Congress--including, eventually, some of the Arizona members who had endorsed the idea--did not believe that either, and showed its distrust of dammers by placing both damsites in Grand Canyon National Park.

Now we are faced with a different sort of problem, one which we should have anticipated but did not. Most concerns about dams have been related to upstream effects--what would be lost by inundation. We could readily point out what would be drowned under reservoirs hundreds of feet deep above Echo Park and the proposed Grand Canyon dams. (Not much was done to save Glen Canyon from flooding, partly because it did not have the automatic constituency enjoyed by national parks.) We could point to the horrible example of Hetch Hetchy and elicit, worldwide, a resounding "Never again!" We knew how Hoover Dam had flooded the lower 40 miles of the Grand Canyon; but until Glen Canyon Dam was closed in 1964 we gave little thought to what the operation of the power plant might do to the entire 277 miles of the Canyon downstream from it.

No harm was seen in the promise that Glen Canyon Dam would tend to steady the flow of the river, would extend the season of river travel, and so on. That promise, however, proved to be empty. Over the ensuing years, the Bureau of Reclamation has increasingly perceived itself to have obligations to provide "benefits" to

just about anything and everything except Grand Canyon National Park and the public which may be inspired by it. Although this agency likes to call itself "a water company, not a power company," it attempts to justify its existence with power revenues, hence its emphasis on "peaking power," which commands a higher price from the purchasing utility than "base load," a steady flow of energy.

Obviously, there is no way to get more power out of the Colorado River at Glen Canyon than is already being generated there. In fact, the present generators have nearly three times as much capacity as can be utilized; in other words, the full, steady flow of a river with more than double the volume of the Colorado would easily be accommodated by Glen Canyon's turbines, each of which presently stands idle more than half of the time because there is not the water to turn them without depleting Lake Powell. Actually, almost two-thirds of the generating capacity of Glen Canyon Dam could be removed permanently without the loss of so much as a kilowatt in an entire year's operation, if Glen Canyon Dam were used solely as a base-load plant.

Still, the Bureau came up with the idea of adding capacity to the present plant by installing two extra generators in the old bypass tunnels. The purpose was to increase revenue to the government with the sale of more of the higher-priced peaking power. After much public disapproval was expressed, and the Bureau's supporting figures shown to have been full of errors anyway, Interior's rationale for abandoning the project was "to help the President meet his budget goals"!

Without the scrutiny aroused by that outrageous proposal, we the people might not have examined other ongoing schemes--such as rewinding the present generators to accommodate higher peaks (and of course lower and longer "valleys").

We might not have been sufficiently alarmed at the creeping turnaround emerging in the established pattern of mismanagement of the river. The normal flows of the Colorado were high in spring and summer and low--once as low as 700 cubic feet per second--in autumn and winter. Confirming a trend that has already begun, the Bureau's published forecasts for future flows must shock everyone who has any regard for the Grand Canyon: Two of the months of naturally high flows--May and June--are already being deprived of most of their river and are slated to remain among the months of lowest volumes, because the Bureau of Reclamation perceives its new political "obligation" to be the heating of prospective oil-shale towns with electricity generated by dropping Lake Powell through Glen Canyon Dam at about three times the volume now proposed for spring and early summer!

Although attached Exhibit A will show that supposedly anticipated demands are largely fictitious or imaginary, we are more concerned with the way things are than the way they might be in 2000 or 2020 if Burec's claimed clairvoyance is to be believed. The Bureau says peaking power is needed, and we will not argue the point. But it is not needed at Glen Canyon Dam. It can be obtained at Hoover Dam with no perceptible effect on artificial Lake Mojave, immediately downstream. It can be obtained by load management throughout the present system. And while BuRec speaks of 12 to 24 hours to bring thermal power on line, the large utility companies that peak with it every day speak of 30 to 40 minutes.

Although the economies in numbers of operating personnel at a base-load hydropower plant have not been brought into the picture, we are willing to concede that some sacrifice of net revenue could result from making Glen Canyon Dam's releases more compatible with the purposes for which Grand Canyon National Park exists. But sacrifices must be made on one side or the other or both, and too much of the Grand Canyon's integrity has been sacrificed already. We may well ask which is the more important--a mere convenience to the Western Area Power Administration and the Bureau of Reclamation and their associates, or the future of not only the Grand Canyon but our entire national park ethic.

The time has come for the Congress to set appropriate standards with landmark legislation. Specific flows of the Colorado River into the Grand Canyon must be ordered by law. The Bureau of Reclamation can adjust its affairs around statutory flows as shown below--certainly more easily than it has had to readjust its thinking to the complete losses of favorite projects to which it had tied its long-term planning. Flows moderated to save the Grand Canyon experience will not return the river to its natural condition, but will afford a nearer-to-natural aspect consistent with full utilization of the Glen Canyon power plant while providing for substantial winter flows not only for power generation but for other uses of the river, including that of trout spawning, which depends on a 90-day period of steady flow. These figures, which set certain specific limits, still have ample flexibility built into them to accommodate extraordinary circumstances. They have been worked out with the cooperation of a number of interested parties, including the Arizona Department of Game and Fish and the Western River Guides Association, as well as Friends of the River and the River Defense Fund of the American Wilderness Alliance. They are adopted by the Organizing Committee of the Trust for the Grand Canyon, now in the process of incorporation.

We do not demand a natural river in the Grand Canyon, but we Americans have already yielded up too much of our heritage; this is the ultimate compromise:

Monthly divisions of the Colorado River entering the Lower Basin through Grand Canyon National Park, to deliver to the Lower Basin not less than 8.25 million acre-feet per year, averaged in ten-year increments as required by law.

January.....	Not more than 5,000 cfs, to yield approximately	305,753 af
February*.....	Not more than 5,000 cfs, to yield approximately	276,161 af
March.....	Not more than 5,000 cfs, to yield approximately	305,753 af
April.....	Not less than 14,811 cfs, to yield approximately	875,670 af
May.....	Not less than 16,456 cfs, to yield approximately	1,004,372 af
June.....	Not less than 16,667 cfs, to yield approximately	936,300 af
July.....	Not less than 16,667 cfs, to yield approximately	1,019,177 af
August.....	Not less than 16,667 cfs, to yield approximately	1,019,177 af
September.....	Not less than 16,456 cfs, to yield approximately	973,972 af
October.....	Not less than 14,811 cfs, to yield approximately	904,520 af
November.....	Not more than 5,000 cfs, to yield approximately	292,624 af
December.....	Not more than 5,000 cfs, to yield approximately	305,753 af

\*Slightly lower cfs in leap years

The bill to enact this proposal into law will meet some objections; we ask you to consider the demonstrated credibility of the objectors. You will be told that under

the constraints imposed here, contractual obligations to customers cannot be met; we ask you to examine the propriety of the contracts. The Bureau of Reclamation will claim that efficient operation of Glen Canyon Dam as a base-load facility under the mandatory guidelines indicated is impossible; we ask you to remember who claimed that development of the Colorado River would be impossible without Echo Park Dam.



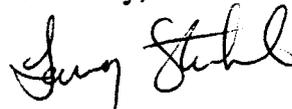
problem. Keep in mind that your client, under the guise of the BOR, is really the public.

Finally, by whom have you been directed to limit your research to downstream impacts? What recourse does the public have to this individual? Does the BOR intend to institute a separate program to consider upstream impacts unrelated to downstream resources? This does not seem like it would be a cost effective approach. As taxpayers, we hope the BOR will be responsive to our concerns.

Although we probably would have 30 years ago, the HCRR is not currently advocating eliminating the dam. The dam is now a fact of life and many of the upstream and downstream impacts can no longer be mitigated. It is our desire to ensure minimization of those impacts that still can be mitigated.

Thanks again for your timely response. We look forward to a continued dialogue as the GCES and EIS progress and to meeting you and the BOR staff at the public scoping meeting in Denver.

Sincerely,



Larry Stuhl, President  
High Country River Rafters

P.O. Box 709  
Golden, Colorado 80402

Home: (303) 526-2426  
Work: (303) 980-3639

cc:

~~XXXXXXXXXXXX~~  
David Wegner

ORIGINAL

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MAR 14 '90

Date	Initials	To
		4/3

David Wegner  
 Glen Canyon Environmental Impact Statement (GCD-EIS)  
 U.S. Bureau of Reclamation  
 P.O. Box 11568  
 Salt Lake City, Utah 84147

Dear Mr. Wegner:

The following comments are made by:

Representing:

Larry Stuhl (Lawrence Alan Stuhl)  
 338 Parkview Avenue  
 Golden, Colorado 80401

High Country River Rafters (President)  
 P.O. Box 709  
 Golden, Colorado 80402

The High Country River Rafters (HCRR) is an organization of private boaters based in Golden, Colorado. The HCRR support the current efforts designed to consider the environmental impacts of operation of Glen Canyon Dam. We would like to emphasize that although we are dedicated to the safe, recreational use of river resources, our primary concern in conservation of those river resources and the natural ecosystems. We submit the following comments as representatives of the private boating community.

Comment 1: It is our understanding that the public input meetings are intended as a means to develop the scope of the GCD-EIS. However, the Format and Ground Rules guidelines distributed by the Bureau of Reclamation (BOR) indicate that the public should confine their comments to "the scope of the Glen Canyon EIS". It seems from this statement and from past correspondence, that the BOR has already judged the scope of the EIS and that public input will be disregarded if inconsistent with the predetermined scope. If the Glen Canyon EIS has been prejudged to exclude the upstream effects of the dam, than the public has been denied the opportunity for meaningful input and the process will be inherently biased. The exclusion of upstream effects as results of the mere existence of the dam as opposed to operation of the dam is arbitrary and capricious.

Comment 2: One of the operating criteria of the dam includes hydraulic head developed by the reservoir behind the dam. Certainly power generating capacity would be drastically changed if the operating reservoir depth were 50 feet instead of 650 feet. Reservoir depth is absolutely part of the operating criteria for the dam. The extreme water depths result in temperature horizons developing within the reservoir. The temperature gradients adversely impact the downstream environment including wildlife and recreation. The Glen Canyon Environmental Studies intend to look at a variable intake structure as a means to mitigate adverse impacts; however, that study described in a recently letter from Dr. Patten failed to include studies of the adverse impacts of cold water caused by the operation of Glen Canyon Dam. It is not the intent of the HCRR to advocate elimination of the dam nor drastic reduction in the level of Lake Powell; however, the downstream impacts of the cold water environment on native fisheries and recreation must be studied or the EIS will be fatally flawed and ignore the greatest negative impact of the dam. The GCD-EIS must look at the impacts of cold water to be able to judge the need for and effectiveness of a variable intake structure.

Comment 3: If for administrative or other reasons it is impractical to include both upstream

and downstream effects of the dam in one EIS, the BOR should undertake two separate EISs and develop mitigative measures that are consistent for both upstream and downstream environments. Upstream impacts that should be considered include diminished recreational opportunities in Canyonlands due to backwaters, loss of inundated geological, cultural, and historical features, and impacts to wildlife and vegetation due to fluctuating reservoir level.

Comment 4: The greatest downstream impact of Glen Canyon Dam is the cold water environment. Five of eight native fish species have been eliminated from the canyon including three of four threatened or endangered species as a result of the cold water and reduced sediment load. The EIS should endeavor to determine the water optimum temperature for native fish and find mitigative measures to achieve optimum temperatures. The EIS should consider studies and mitigative measures that would allow for reintroduction of expatriated native fish species. Cold water resulting from operation of Glen Canyon Dam also adversely impacts recreational opportunities within the Grand Canyon and creates unwarranted risks of hypothermia and increased risk of drowning. These impacts should be studied and mitigative measures developed. The effect of cold water on the Grand Canyon environment should also be studied. Have non-native vegetation or wildlife that prosper near the cold water environment created adverse environmental impacts on native vegetation of wildlife? In this study, compare the environments of Stillwater or Cataract Canyons with the Grand Canyon.

Comment 5: Much emphasis of the GCD-EIS should be focused on the impacts of sediment depletion and means to mitigate those impacts. Most of your commenters will likely include beach degradation as a major concern. The HCRR also feel this is a negative impact that requires immediate action. The BOR should maintain steady interim flows of a minimum of 5,000 cfs until such time as the GCD-EIS finds a more appropriate flow regime. Our members have seen noticeable beach degradation even within the last ten years. Comparison of current day photographs with photographs taken during the Powell expeditions show stunning differences in beach topography. The GCD-EIS should study not only beach erosion, but also beach sedimentation processes. Mitigative measures should be developed that not only prevent further erosion but that provide a depositional environment. Augmentation of the suspended load in the river is imperative to this end.

Comment 6: Following a Grand Canyon river trip from May 25 to June 10 1988, the trip leader requested a listing of Glen Canyon Dam releases during that period. Releases were as low as 1,200 cfs. This is inconsistent with the 5,000 cfs minimum dam discharges described in the "FACTUAL INFORMATION" leaflet recently distributed by the BOR. Why were actual discharges below the prescribed minimum? How often do below minimum discharges occur? The GCD-EIS should develop mitigative measures to ensure that all discharges are equal to or in excess of the minimum 5,000 cfs. During that same trip, our group measured water temperatures at Lees Ferry and in Marble Canyon as low as 42°F. Air temperatures at the time were in excess of 100°F. This is also inconsistent with the water temperature of 50°F claimed in the "FACTUAL INFORMATION" leaflet. The GCD-EIS should study the temperature of waters from dam releases and develop mitigative measures to ensure discharges are at temperatures that are optimum for native fisheries and for recreation.

Comment 7: Fluctuating flows not only adversely impact beach sedimentation, these flows also adversely impact the safety of recreational boating. The unpredictable flow often cause boats to become hung up of rocks or stranded on beaches when flows change over night.

This often forces boaters to fall behind schedule and navigate rapids at hazardous water levels. The GCD-EIS should evaluate these impacts and seek mitigative measures to minimize these impacts. Mitigative measures may include steady flows or developing a structured fluctuating flow schedule and predictive models that will allow boaters at any location in the Grand Canyon to know when, where, and how much flows will change. For this second mitigative measure to be effective, boaters would need to be given the scheduled releases for the period three week subsequent to their launch date and they would need to have a copy of the predictive model.

Comment 8: Although the trout fishery within the Glen Canyon Area Recreation Area is a desirable impact of the dam, this exotic trout fishery has been established to the detriment of the native fisheries. It is not the desire of the HCRR to disregard this important trout fishery; however, the non-native fishery must be secondary to the native fisheries.

Comment 9: River salinity has increased over 37 percent since the dam began operations. The causes, effects, and measures necessary to offset this increased salinity should be included in the GCD-EIS.

Comment 10: The effects of group size on degradation of beaches should be included in the GCD-EIS. A model should be developed to represent the relationship between group size, fluctuating flows, and steady flows. The study should recommend a maximum group size to minimize erosion. Any recommendations could be implemented as "nonstructural changes" to the NPS River Management Plan for the Grand Canyon.

Comment 11: We believe the time frame in which this study is to be completed is unreasonably short. There is no advantage to limiting the study to ensure publication of the Final EIS by December 1991. A thorough field program to collect data will take a minimum of two years. The first year (Phase I) should include all studies identified prior to the first field program. The second year (Phase II) should include studies designed to fill data gaps and any additional studies identified subsequent to the initial field program. Following completion of the field programs a minimum of one year should be allowed to ensure thorough assessment of all pertinent data and to allow time for writing of the Draft EIS. The HCRR recommend the time frame for completion of the EIS be as follows:

May 1990 - May 1992: Phase I and Phase II data collection;

Jun 1992 - Jun 1993: Preparation of the Draft EIS;

Jul 1993 - Sep 1993: Public comment period on Draft EIS;

Oct 1993 - Jun 1994: Preparation of the Final EIS; and

Jul 1994 - Sep 1994: Dispute period.

The environmental and recreational communities, believe it is essential this EIS be thorough and unfettered by administrative limits. This is one of the biggest and most important EIS ever undertaken and should not be restricted by artificial deadlines.

Comment 12: Mitigative measures involving downstream structural features such as a reregulation dam, beach retaining walls, and sediment augmentation structures are generally

undesirable. However, it is preferable to minimize downstream damages by incorporating structural features as a last resort. The HCRR would vigorously oppose construction of retaining walls along beaches within the Grand Canyon or any other features that reduce the wilderness experience in the Grand Canyon. A reregulation dam and sediment augmentation structure would be acceptable provided both structures are out of sight from the Lees Ferry area. A reregulation dam should create as shallow a reservoir as possible to maximize warming of regulated waters but still provide damping of flow fluctuations.

In addition to a variable intake structure, the GCD-EIS should consider additional measures to warm regulated waters closer to temperatures found under natural conditions. Such measures may include collecting waste heat from operations of Glen Canyon Dam or Navajo Power Plant. Other alternatives may involve enhancing warm air contact with the water by aeration or spraying the dam releases into the air.

Comment 13: What errors occurred during the EA undertaken prior to the rewinding of the generators in 1980 that allowed for a conclusion that a FONSI was justified when so many adverse impacts are so clearly evident? How can the oversights be avoided in this EIS?

In summary, the issues of greatest concern in approximately the order of greatest importance (greatest to least) are:

- (1) Adverse impacts on native fisheries, Grand Canyon ecosystems, and recreation resulting from the cold water environment created by the operation of Glen Canyon Dam;
- (2) Adverse impact of beach erosion and depletion resulting from trapping of sediment and fluctuating flows caused by operation of Glen Canyon Dam and from use of human use of beaches;
- (3) Disproportionate and inappropriate emphasis on exotic fish species relative to threatened and endangered fish species;
- (4) Adverse impacts resulting from actual flow and temperature regimes being inconsistent the prescribed operations;
- (5) Inadequate time frame for completion of a thorough EIS;
- (6) Failure of the BOR to commit to guaranteed interim flows designed to ensure protection of the resources during the EIS;
- (7) Degradation of water quality (increased salinity) resulting from operation of Glen Canyon Dam;
- (8) Predetermination of the scope of the GCD-EIS by the BOR that has precluded the opportunity for meaningful public input; and
- (9) Adverse upstream impacts resulting from the operation of Glen Canyon Dam.

The High Country River Rafter's encourage the GCD-EIS to consider the impacts of operational, structural, and non-operational mitigative measures. The following should be

the emphasis of any mitigative measures:

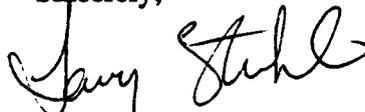
- (1) Measures should restore a warm water environment conducive to recovery of native fisheries; threatened and endangered species already eliminated from the canyon should be reintroduced; and risks of hypothermia during recreational activities should be minimized.
- (2) Measures should ensure that the erosional/depositional environments in all parts of the Grand Canyon results in no net loss of beaches within any section of the Grand Canyon. Emphasis is added here to ensure beaches are not lost in the Marble Gorge even though downstream sections have net depositional environments.
- (3) Negative impacts of human use on beach degradation and fisheries should be minimized to the extent possible through limitations to group size and a catch-and-release program.
- (4) Measures designed to remedy temperature or erosional problems should not negatively impact the "wilderness" experience of the Grand Canyon.

To these ends, the HCRR would support:

- (1) Variable intake structures to use surface water from Lake Powell for power generation and water releases;
- (2) Systems providing waste heat recovery, water aeration, sediment augmentation, and reregulation dams within the Glen Canyon Recreation Area (out of sight from Lees Ferry);
- (3) Steady flow regimes no lower than 5,000 cfs;
- (4) Limitations on group size, including guides, as low as 16 for both the commercial and the private sectors; and
- (5) Catch-and-release of all fish species.

Again the HCRR support the ongoing efforts and we request to be kept informed directly and involved to the extent possible throughout the process.

Sincerely,



Larry Stuhl, President  
High Country River Rafters

P.O. Box 709  
Golden, Colorado 80402

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RECEIVED BOR SLCU  
OFFICIAL FILE COPY

MAY 02 '90 April 29, 1990

Date	Initials	To
		115

David L. Wegner  
Bureau of Reclamation  
Upper Colorado Regional Office  
P.O. Box 11568  
Salt Lake City, Utah 84147

Dear Mr. Wegner:

Please consider the following comments regarding your recent memorandum on the Glen Canyon Environmental Studies; please also include the comments in this letter as supplemental to those submitted at the scoping meeting in Denver on March 13. I have attached a revised version of my original letter with some editorial corrections. The attached revision should take precedence over the original letter.

→ this will be added to original  
14/5/90

We are concerned that the "team" does not include representatives of the private boating community but is heavily weighted with power interests. There is a serious conflict of interest due to the large contingency of CREDA representatives at the GCES meetings given that Clifford Barrett is the Executive Director of that organization. We question the ability of BOR to be impartial given Mr. Barrett's former position with BOR. In addition, Mr. Barrett may have had access to information not available or easily accessible to the general public. We recommend you select a member from the private boating community for your team and limit CREDA to only a representative through WAPA.

If it is not physically possible at this time to achieve releases of 31,500 cfs for the study, please allow flexibility in the schedule to allow studies to occur when the physical possibility presents itself. Likewise with other flow regimes; if any research flow is disrupted, please require the flow regime to be reexamined when steady flows can be provided.

The 1,000 cfs research flows should be retained. Attached are hourly flow records obtained from the BOR following a river trip May 25 - June 10, 1988. Highlighted in blue are 75 flow readings between 3,000 and 5,000 cfs; highlighted in yellow are 57 flow readings less than 3,000 cfs including one flow of only 1,270 cfs. One-hundred thirty-two of 408 (32 percent) flow readings over a 17 day period were below the 5,000 cfs "minimum" WAPA claims to maintain. It appears that the cost of low flows is acceptable to WAPA only when those flows are convenient to WAPA. Part of the purpose of the EIS and the complementary GCES is to give equal consideration to non-power, non-economic related impacts of dam operation. Please require WAPA to maintain the minimum 5,000 cfs flows with the exception of the EIS research flows; maintaining 5,000 cfs flows should offset the cost of research flows including the 1,000 cfs flow. Please include the attached flow records as part of the public record in the EIS scoping process.

We support the USGS research program that will take the time necessary to complete their studies. We request that all study groups be allowed the latitude to extend their research as necessary.

We request the USGS/AGF/NPS water quality studies be supplemented with studies to

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assess the impact on water quality of abandoned uranium, asbestos, and other mines, of "developments" such as at Phantom Ranch and on the Havasupai reservation, and of human recreational use within the canyon including boaters, hikers, and mule concessionaires.

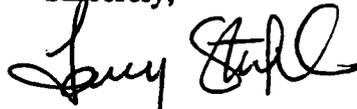
The research emphasis on the exotic cold water fishery prevalent in only 15 miles of a 270+ mile system is inordinate. Research efforts should concentrate on the native warm water fisheries with emphasis on identifying mitigative measures to allow reintroduction of fish species that have disappeared from the canyon following the construction of the dam. We share the AGF and FWS concerns regarding the contract BOR is contemplating with respect to the endangered fish.

Please define your abbreviations (S.E.S.D., GLCA, ICPA, PAPA, HBRS, FFF, AFGD, ADWR).

Does Dr. Patten believe the flow modifications proposed are acceptable?

Please keep us informed of and allow us the opportunity for meaningful input on future issues impacting the Grand Canyon and other river resources. Please consider these comments supplemental to the previous comments (attached).

Sincerely,



Larry Stuhl, President  
High Country River Rafters  
P.O. Box 709  
Golden, CO 80402

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U.S. BUREAU OF RECLAMATION  
GLEN CANYON POWERPLANT  
WATER RELEASES

(24.42615)

TIME	LAKE ELEVATION	TAIL WATER ELEV.	HOURLY GROSS HEAD	TURBINE DISCHARGE C.F.S.	HOURLY GENERATION	RIVER FLOW C.F.S.	SPILLWAY DISCHARGE C.F.S.	HOLLOW JETS C.F.S.
PREV.	3686.80	3136.08	550.72	8647	354			
0100	3686.83	3134.99	551.84	6375	261			
0200	3686.85	3133.99	552.86	5777	214			
0300	3686.87	3133.70	553.17	5714	193			
0400	3686.87	3132.62	554.25	3053	125			
0500	3686.87	3132.78	554.09	3278	134			
0600	3686.89	3132.71	554.18	3078	126			
0700	3686.87	3133.38	553.49	4906	164			
0800	3686.88	3136.52	553.36	9697	397			
0900	3686.90	3137.07	549.32	11138	456			
1000	3686.91	3137.18	549.73	10321	425			
1100	3686.94	3138.59	548.55	15654	559			
1200	3686.96	3138.52	548.44	14900	610			
1300	3686.97	3138.27	548.77	13239	542			
1400	3686.97	3137.79	547.92	15291	626			
1500	3686.97	3139.46	547.51	17343	710			
1600	3686.96	3139.57	547.39	18002	737	-	153,371	
1700	3686.94	3139.82	547.12	18491	757			
1800	3686.96	3139.92	547.04	18588	761			
1900	3686.99	3138.81	548.18	14973	613			
2000	3687.00	3139.13	547.87	15242	624			
2100	3687.01	3139.66	547.35	17880	732			
2200	3687.01	3139.56	547.45	17709	725		256254	✓
2300	3687.02	3138.57	548.45	18047	616			
2400	3687.02	3137.46	549.56	11407	467			
TOTAL	8848645	7529105	1319540	282708				
AVG. ELEV.	3686.94	3137.13	549.81	//////		//////	//////	//////
RELEASES C.F.S.				11780	//////			
RELEASE A.F.				23560	//////			
INFLOW A.F.				56560				
PREV. MID. LAKE STORAGE A.F.				22,935,000				
PRES. MID. LAKE STORAGE A.F.				22,968,000				
GROSS GENERATION KWH				11,574,000				
RATE OF GENERATION KWH/A.F.				491.26				
OVERALL EFFICIENCY (%)				87.2				

A.F. = AVG. C.F.S. X 2  
 KWH/A.F. = GROSS GEN. A.F.  
 + 33  
 EFF. % = KWH/A.F. / (1.025 X AVG. HEAD)

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TIME	LAKE ELEVATION	TAIL WATER ELEV.	HOURLY GROSS HEAD	TURBINE DISCHARGE C.F.S.	HOURLY GENERATION	RIVER FLOW C.F.S.	SPILLWAY DISCHARGE C.F.S.	HOLLOW JETS C.F.S.
PREV.	3687.02	3137.46	549.56	11407	467			
0100	3687.01	3134.40	552.61	5569	228			
0200	3687.02	3133.29	553.73	3921	163			
0300	3687.02	3132.87	554.15	3517	144			
0400	3687.04	3132.34	554.70		104			
0500	3687.05	3132.80	554.25		121			
0600	3687.06	3133.07	553.99	3664	150			
0700	3687.07	3134.64	552.43	5667	232		27894	
0800	3687.06	3136.75	550.31	8891	364			
0900	3687.07	3138.89	548.98	13557	555			
1000	3687.08	3138.47	548.61	13959	551			
1100	3687.10	3138.27	548.83	13703	561			
1200	3687.11	3138.41	548.70	12068	535			
1300	3687.13	3138.39	548.74	13508	553			
1400	3687.14	3139.27	547.27	16683	683			
1500	3687.14	3139.63	547.51	17733	726		138,496	
1600	3687.12	3140.08	547.04	18613	762			
1700	3687.12	3140.21	546.91	20347	833			
1800	3687.12	3140.12	547.00	19150	784			
1900	3687.12	3139.88	547.24	18808	770			
2000	3687.12	3139.95	547.17	18901	651			
2100	3687.14	3139.50	547.64	17001	646			
2200	3687.14	3139.71	547.43	18124	742		266440	✓
2300	3687.14	3139.07	548.12	15828	648			
2400	3687.15	3136.97	550.18	11016	451			
TOTAL	8849027	7529613	1319414	293284				
AVG. ELEV.	3687.09	3137.34	549.75					
RELEASES C.F.S.				12220				
RELEASE A.F.				24,440				
INFLOW A.F.				44,440				
PREV. MID. LAKE STORAGE A.F.				22,968,000				
PRES. MID. LAKE STORAGE A.F.				22,988,000				
GROSS GENERATION KWH				12,007,000				
RATE OF GENERATION KWH/A.F.				491.28				
OVERALL EFFICIENCY (%)				87.2				

A.F. = AVG. C.F.S. X 2  
 KWH/A.F. =  $\frac{\text{GROSS GEN.}}{\text{A.F.}}$   
 EFF. % =  $\frac{\text{KWH/A.F.}}{1.025 \times \text{AVG. HE}}$

563.49

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WATER RELEASES

24.42615

TIME	LAKE ELEVATION	TAIL WATER ELEV.	HOURLY GROSS HEAD	TURBINE DISCHARGE C.F.S.	HOURLY GENERATION	RIVER FLOW C.F.S.	SPILLWAY DISCHARGE C.F.S.	HOLLOW JETS C.F.S.
PREV.	3687.15	3136.97	550.18	11,016	451			
0100	3687.14	3133.79	553.35	4006	164			
0200	3687.14	3134.17	552.97	5423	222			
0300	3687.16	3133.61	553.55	7348	178			
0400	3687.16	3134.15	553.01	5178	212			
0500	3687.17	3135.25	551.72	6986	286			
0600	3687.18	3134.37	552.81	5936	243			
0700	3687.19	3134.50	552.69	5349	219		37,226	
0800	3687.19	3135.30	551.89	6693	274			
0900	3687.18	3136.96	552.22	10,870	445			
1000	3687.19	3137.28	549.91	11,285	462			
1100	3687.19	3137.55	549.64	10,974	446			
1200	3687.22	3137.04	549.18	12,238	501			
1300	3687.25	3139.02	548.23	14,729	603			
1400	3687.24	3139.11	548.13	16,268	666			
1500	3687.23	3139.16	548.07	16,707	684			
1600	3687.22	3139.10	548.12	16,341	669		153,251	
1700	3687.22	3139.42	547.80	17,147	702			
1800	3687.22	3139.16	548.06	16,585	674			
1900	3687.24	3138.43	548.81	14,411	590			
2000	3687.24	3138.23	549.01	13,630	558			
2100	3687.25	3138.69	548.56	14,827	607			
2200	3687.26	3138.52	548.74	14,753	604		244,604	
2300	3687.27	3136.93	550.34	9795	401			
2400	3687.26	3136.04	551.22	8793	360			
TOTAL	8849301	7528678	1320623	263192				
AVG. ELEV.	3687.21	3136.95	550.26					
RELEASES C.F.S.				10965				
RELEASE A.F.				21930				
INFLOW A.F.				38930				
PREV. MID. LAKE STORAGE A.F.				22,988,000				
PRES. MID. LAKE STORAGE A.F.				23,005,000				
GROSS GENERATION KWH				10,775,000				
RATE OF GENERATION KWH/A.F.				491.34				
OVERALL EFFICIENCY (%)				87.1				

$A.F. = AVG. C.F.S. \times 2$   
 $KWH/A.F. = \frac{GROSS GEN.}{A.F.}$   
 $EFF. \% = \frac{KWH/A.F.}{1.025 \times AVG. HE}$

564.02

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GLEN CANYON POWERPLANT  
WATER RELEASES

24.42615

TIME	LAKE ELEVATION	TAIL WATER ELEV.	HOURLY GROSS HEAD	TURBINE DISCHARGE C.F.S.	HOURLY GENERATION	RIVER FLOW C.F.S.	SPILLWAY DISCHARGE C.F.S.	HOLLOW JETS C.F.S.
PREV.	3687.26	3136.04	551.22	8793	360			
0100	3687.28	3134.77	552.51	6229	255			
0200	3687.27	3131.57	555.76		52			
0300	3687.28	3132.04	555.24		104			
0400	3687.28	3132.46	554.82		117			
0500	3687.28	3132.40	554.87		119			
0600	3687.29	3132.50	554.79		122			
0700	3687.30	3132.50	554.80		121			
0800	3687.30	3132.78	554.32	3566	146		25,306	
0900	3687.31	3135.06	552.25	6888	282			
1000	3687.32	3135.36	551.96	7303	299			
1100	3687.34	3135.40	551.94	7352	301			
1200	3687.35	3135.41	551.94	7401	302			
1300	3687.37	3135.42	551.95	7377	302			
1400	3687.37	3135.42	551.95	7303	299			
1500	3687.39	3135.43	551.96	7352	301			
1600	3687.39	3135.73	551.66	7548	309		23,830	
1700	3687.39	3136.20	550.89	4038	370			
1800	3687.40	3136.57	550.83	4111	373			
1900	3687.41	3135.46	551.95	7816	320			
2000	3687.41	3135.36	552.05	7401	303			
2100	3687.41	3135.64	551.77	7572	310			
2200	3687.43	3135.82	551.61	8109	332		132877	
2300	3687.43	3135.20	552.23	7132	292			
2400	3687.44	3133.01	554.43	3762	154			
TOTAL	8849644	7522795	1326849	143771				
AVG. ELEV.	3687.35	3134.50	552.85					
RELEASES C.F.S.				5990				
RELEASE A.F.				11980				
INFLOW A.F.				38980				
PREV. MID. LAKE STORAGE A.F.				23 005 000				
PRES. MID. LAKE STORAGE A.F.				23 032 000				
GROSS GENERATION KWH				5 886 000				
RATE OF GENERATION KWH/A.F.				491.32				
OVERALL EFFICIENCY (%)				86.7				

A.F. = AVG. C.F.S. X 2  
 KWH/A.F. =  $\frac{\text{GROSS GEN.}}{\text{A.F.}}$   
 EFF. % =  $\frac{\text{KWH/A.F.}}{1.025 \times \text{AVG. HEAD}}$

566.67

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U.S. BUREAU OF RECLAMATION  
GLEN CANYON POWERPLANT  
WATER RELEASES

DATE \_\_\_\_\_

24.42615

TIME	LAKE ELEVATION	TAIL WATER ELEV.	HOURLY GROSS HEAD	TURBINE DISCHARGE C.F.S.	HOURLY GENERATION	RIVER FLOW C.F.S.	SPILLWAY DISCHARGE C.F.S.	HOLLOW JETS C.F.S.
PREV.	3687.44	3133.01	554.43	3762	154			
0100	3687.44	3132.50	554.94	<del>2156</del>	121			
0200	3687.44	3132.39	555.05	<del>2131</del>	120			
0300	3687.45	3132.57	554.88	<del>2131</del>	120			
0400	3687.46	3132.41	555.05	<del>2121</del>	118			
0500	3687.47	3132.52	554.95	<del>2115</del>	111			
0600	3687.49	3132.49	555.00	<del>2156</del>	121			
0700	3687.49	3132.15	555.34	<del>2413</del>	10			
0800	3687.49	3133.41	554.08	4323	177			
0900	3687.49	3134.16	553.33	5349	219			
1000	3687.49	3135.23	552.26	7401	303			
1100	3687.49	3135.26	552.23	7377	302			
1200	3687.49	3135.35	552.14	7548	309			
1300	3687.49	3135.62	551.27	7914	327			
1400	3687.49	3136.24	551.25	8745	358			
1500	3687.49	3135.43	552.06	7890	323			
1600	3687.49	3134.56	552.93	5618	230		81,975	
1700	3687.50	3135.29	552.21	7388	303			
1800	3687.51	3135.31	552.21	7388	303			
1900	3687.51	3135.32	552.20	7315	300			
2000	3687.65	3135.35	552.30	7339	301			
2100	3687.73	3135.33	552.40	7388	303			
2200	3687.70	3135.33	552.37	7339	301		126,132	
2300	3687.67	3135.07	552.60	6705	275			
2400	3687.60	3132.82	554.78	3145	129			
TOTAL	8850054	7522211	1327843	135982				
AVG. ELEV.	3687.52	3134.25	553.27					
RELEASES C.F.S.				5665				
RELEASE A.F.				11330				
INFLOW A.F.				36330				
PREV. MID. LAKE STORAGE A.F.				23 032 000				
PRES. MID. LAKE STORAGE A.F.				23 057 000				
GROSS GENERATION KWH				5 571 000				
RATE OF GENERATION KWH/A.F.				491.70				
OVERALL EFFICIENCY (%)				86.7				

A.F. = AVG. C.F.S. X 2  
 KWH/A.F. = GROSS GEN. A.F.  
 EFF. % = KWH/A.F. / 1.023 X AVG. HEAD

567.10

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U.S. BUREAU OF RECLAMATION  
GLEN CANYON POWERPLANT  
WATER RELEASES

24.38231

TIME	LAKE ELEVATION	TAIL WATER ELEV.	HOURLY GROSS HEAD	TURBINE DISCHARGE C.F.S.	HOURLY GENERATION	RIVER FLOW C.F.S.	SPILLWAY DISCHARGE C.F.S.	HOLLOW JETS C.F.S.
PREV.	3687.60	3132.82	554.78	3145	129			
0100	3687.60	3132.64	554.96	3048	125			
0200	3687.59	3132.50	555.09		123			
0300	3687.57	3132.52	555.05		117			
0400	3687.61	3132.53	555.08		120			
0500	3687.63	3132.53	555.10		120			
0600	3687.65	3132.53	555.12		120			
0700	3687.70	3132.53	555.17		120			
0800	3687.73	3133.83	553.90	4389	180		24993	
0900	3687.69	3135.45	552.24	7168	294			
1000	3687.66	3135.52	552.14	7266	295			
1100	3687.63	3135.56	552.07	7363	302			
1200	3687.63	3135.56	552.07	7315	300			
1300	3687.65	3135.57	552.08	7339	301			
1400	3687.76	3135.55	552.21	7290	299			
1500	3687.78	3135.54	552.24	7339	301		76,073	
1600	3687.81	3135.54	552.27	7315	300			
1700	3687.75	3135.53	552.22	7266	298			
1800	3687.76	3135.53	552.23	7266	298			
1900	3687.74	3135.55	552.19	7315	300			
2000	3687.73	3135.54	552.19	7315	300			
2100	3687.73	3135.55	552.18	7315	300			
2200	3687.75	3135.55	552.20	7315	300		127,180	
2300	3687.77	3135.13	552.64	7046	289			
2400	3687.80	3132.75	555.05	3072	126			
TOTAL	8850472	7522703	1327769	137298				
AVG ELEV.	3687.70	3134.46	553.24					
RELEASES C.F.S.				5720				
RELEASE A.F.				11440				
INFLOW A.F.				41440				
PREV. MID. LAKE STORAGE A.F.				23 057 000				
PRES. MID. LAKE STORAGE A.F.				23 087 000				
GROSS GENERATION KWH				5 631 000				
RATE OF GENERATION KWH/A.F.				492.22				
OVERALL EFFICIENCY (%)				86.8				

A.F. = AVG. C.F.S. X 2  
 KWH/A.F. = GROSS GEN. A.F.  
 EFF. % =  $\frac{\text{KWH/A.F.}}{1.023 \times \text{AVG. HEAD}}$

567.07

097323

U.S. BUREAU OF RECLAMATION  
GLEN CANYON POWERPLANT  
WATER RELEASES

24. 38221

	LAKE ELEVA- TION	TAIL WATER ELEV.	HOURLY GROSS HEAD	TURBINE DISCHARGE C.F.S.	HOURLY GENERA- TION	RIVER FLOW C.F.S.	SPILLWAY DISCHARGE C.F.S.	HOLLOW JETS C.F.S.
PREV.	3687.80	3132.75	555.05	3072	126			
0100	3687.84	3132.54	555.30		122			
0200	3687.85	3132.50	555.35		119			
0300	3687.85	3132.50	555.35		121			
0400	3687.84	3132.50	555.34		119			
0500	3687.82	3132.49	555.33		121			
0600	3687.82	3132.36	555.46		117			
0700	3687.84	3132.86	554.98	3194	131			
0800	3687.86	3135.49	552.37	7363	302			
0900	3687.88	3135.54	552.34	7437	305			
1000	3687.89	3135.52	552.37	7339	301			
1100	3687.89	3135.52	552.37	7315	300			
1200	3687.90	3135.90	552.00	8046	330			
1300	3687.91	3135.76	552.15	7437	305			
1400	3687.93	3135.55	552.38	7559	310			
1500	3687.95	3135.55	552.40	7388	303			
1600	3687.98	3135.88	552.10	7680	315			
1700	3687.99	3137.47	550.52	10777	442		99065	✓
1800	3688.00	3136.97	551.03	10119	415			
1900	3688.00	3136.39	551.61	8388	344			
2000	3688.01	3135.76	552.25	7851	322			
2100	3688.01	3135.95	552.06	7510	308			
2200	3688.00	3136.46	551.54	9436	387		142369	✓
2300	3688.00	3135.52	552.48	6925	284			
2400	3688.01	3134.59	553.42	6364	261			
TOTAL	8851.007	7523.757	1327.250	155658				
AVGE. ELEV.	3687.92	3134.90	553.02					
RELEASES C.F.S.				6485				
RELEASE A.F.				12970				
INFLOW A.F.				43970				
PREV. MID. LAKE STORAGE A.F.				23,087.000				
PRES. MID. LAKE STORAGE A.F.				23,118.000				
GROSS GENERATION KWH				6,384,000				
RATE OF GENERATION KWH/A.F.				492.21				
OVERALL EFFICIENCY (%)				86.8				

A.F. = AVG. C.F.S. X 2  
 KWH/A.F. =  $\frac{\text{GROSS GEN.}}{\text{A.F.}}$   
 + 31  
 EFF. % =  $\frac{\text{KWH/A.F.}}{1.023 \times \text{AVG. HEAD}}$

566.85

007323

WATER RELEASES

24. 38231

TIME	LAKE ELEVATION	TAIL WATER ELEV.	HOURLY GROSS HEAD	TURBINE DISCHARGE C.F.S.	HOURLY GENERATION	RIVER FLOW C.F.S.	SPILLWAY DISCHARGE C.F.S.	HOLLOW JETS C.F.S.
PREV.	3688.01	3134.59	553.42	6364	261			
0100	3688.05	3132.76	555.29	3097	127			
0200	3688.06	3132.66	555.40		119			
0300	3688.08	3132.62	555.46		121			
0400	3688.08	3132.63	555.45		121			
0500	3688.08	3132.60	555.48		120			
0600	3688.08	3133.01	555.07	3365	138			
0700	3688.07	3134.01	554.06	4925	202		23114	
0800	3688.08	3135.21	552.87	6949	225			
0900	3688.10	3135.82	552.29	7924	325			
1000	3688.10	3136.69	551.41	8680	356			
1100	3688.11	3138.09	550.02	13166	540			
1200	3688.12	3138.16	549.96	12630	518			
1300	3688.13	3137.93	550.20	12581	516			
1400	3688.15	3138.02	550.13	12484	512			
1500	3688.17	3137.99	550.18	12313	505			
1600	3688.18	3138.06	550.12	12411	509		122,252	
1700	3688.20	3138.44	549.76	13752	564			
1800	3688.21	3138.40	549.81	13630	559			
1900	3688.22	3138.08	550.14	12557	515			
2000	3688.22	3137.85	550.37	11825	485			
2100	3688.22	3138.35	549.87	13654	560		187670	
2200	3688.22	3137.94	550.28	13166	540			
2300	3688.22	3135.78	552.44	7583	311			
2400	3688.23	3133.53	554.70	3755	154			
TOTAL	88,515.38	75,264.63	13,250.75	212,174				
AVG. ELEV.	3688.14	3136.03	552.11					
RELEASES C.F.S.				8840				
RELEASE A.F.				17680				
INFLOW A.F.				51680				
PREV. MID. LAKE STORAGE A.F.				23,118,000				
PRES. MID. LAKE STORAGE A.F.				23,152,000				
GROSS GENERATION KWH				8702,000				
RATE OF GENERATION KWH/A.F.				492.19				
OVERALL EFFICIENCY (%)				87.0				

A.F. = AVG. C.F.S. X 2  
 KWH/A.F. =  $\frac{\text{GROSS GEN.}}{\text{A.F.}}$   
 EFF. % =  $\frac{\text{KWH/A.F.}}{1.025 \times \text{AVG. HEAD}}$   
 +34 565.91

U.S. BUREAU OF RECLAMATION  
GLEN CANYON POWERPLANT  
WATER RELEASES

DATE \_\_\_\_\_

24-38231

TIME	LAKE ELEVATION	TAIL WATER ELEV.	HOURLY GROSS HEAD	TURBINE DISCHARGE C.F.S.	HOURLY GENERATION	RIVER FLOW C.F.S.	SPILLWAY DISCHARGE C.F.S.	HOLLOW JETS C.F.S.
PREV.	3688.23	3133.53	554.70	3755	154			
0100	3688.24	3135.52	552.72	7363	302			
0200	3688.26	3132.99	555.27	3340	137			
0300	3688.28	3132.66	555.62		102			
0400	3688.31	3132.77	555.54		116			
0500	3688.32	3132.67	555.65		114			
0600	3688.32	3132.74	555.58	3023	124			
0700	3688.32	3133.12	555.20		120		24893	
0800	3688.33	3135.55	552.78	7071	290			
0900	3688.33	3135.67	552.66	7412	304			
1000	3688.33	3135.77	552.56	7388	303			
1100	3688.34	3136.96	551.38	9631	395			
1200	3688.39	3137.07	551.27	10387	426			
1300	3688.37	3137.62	550.75	11021	452			
1400	3688.38	3137.82	550.56	11923	489			
1500	3688.39	3137.78	550.41	12289	504		102,015	
1600	3688.41	3138.04	550.37	12898	529			
1700	3688.42	3138.32	550.10	13069	536			
1800	3688.43	3138.32	550.11	13898	570			
1900	3688.43	3138.52	549.91	14020	575			
2000	3688.43	3138.34	550.09	13410	550			
2100	3688.44	3138.52	549.92	14215	583		183525	
2200	3688.45	3138.09	550.36	14312	587			
2300	3688.46	3136.19	552.27	8192	336			
2400	3688.47	3133.75	554.72	4901	201			
TOTAL	88,520.80	75,265.00	13,255.80	210,930				
AVG. ELEV.	3688.37	3136.04	552.33					
RELEASES C.F.S.				8790				
RELEASE A.F.				17580				
INFLOW A.F.				52580				
PREV. MID. LAKE STORAGE A.F.				23,152,000				
PRES. MID. LAKE STORAGE A.F.				23,187,000				
GROSS GENERATION KWH				8651,000				
RATE OF GENERATION KWH/A.F.				492.09				
OVERALL EFFICIENCY (%)				86.9				

A.F. = AVG. C.F.S. X 2  
 KWH/AF. =  $\frac{\text{GROSS GEN.}}{\text{A.F.}}$   
 +35  
 EFF. % =  $\frac{\text{KWH/AF.}}{1.025 \times \text{AVG. HE}}$   
 566.14

WATER RELEASES

\* 24.38231 / 24.32846

TIME	LAKE ELEVATION	TAIL WATER ELEV.	HOURLY GROSS HEAD	TURBINE DISCHARGE C.F.S.	HOURLY GENERATION	RIVER FLOW C.F.S.	SPILLWAY DISCHARGE C.F.S.	HOLLOW JETS C.F.S.
PREV.	3688.47	3133.75	554.72	4901	201			
0100	3688.48	3133.12	555.36	3999	164			
0200	3688.48	3132.65	555.83	3048	125		* 7047	
0300	3688.50	3132.68	555.82	3261	134		* 24.32846	
0400	3688.51	3132.70	555.81		122			
0500	3688.52	3132.69	555.83	3112	128			
0600	3688.52	3132.68	555.84	3042	125			
0700	3688.54	3132.97	555.57	3310	136			
0800	3688.56	3135.66	552.40	7496	308		30240	
0900	3688.56	3135.63	552.93	7618	313			
1000	3688.56	3135.70	552.96	7448	306			
1100	3688.56	3136.63	551.93	9005	370			
1200	3688.56	3136.96	551.60	10027	412			
1300	3688.56	3136.97	551.59	10320	424			
1400	3688.58	3137.63	550.95	11682	480			
1500	3688.61	3137.85	550.76	12291	505			
1600	3688.64	3138.47	550.17	13508	555			
1700	3688.65	3138.32	550.33	13337	548			
1800	3688.67	3138.15	550.52	13873	570			
1900	3688.68	3136.91	551.77	10490	431			
2000	3688.68	3136.88	551.80	10076	414			
2100	3688.68	3136.66	552.02	9200	378			
2200	3688.67	3136.41	552.26	8835	363		177950	
2300	3688.69	3135.44	552.25	6790	279			
2400	3688.70	3133.13	555.57	3505	144			
TOTAL	88526.16	75252.89	13273.27	188245				
AVG. ELEV.	3688.59	3135.54	553.05					
RELEASES C.F.S.				7845				
RELEASE A.F.				15690				
INFLOW A.F.				52690				
PREV. MID. LAKE STORAGE A.F.				23,187,000				
PRES. MID. LAKE STORAGE A.F.				23,224,000				
GROSS GENERATION KWH				7767000				
RATE OF GENERATION KWH/A.F.				495.03				
OVERALL EFFICIENCY (%)				87.3				
						A.F. = AVG. C.F.S. X 2		
						KWH/A.F. = GROSS GEN. A.F.		
						+37 EFF. % = KWH/A.F.		
						1.025 X AVG. HEAD		
						566.88		

WATER RELEASES

24. 33846

TIME	LAKE ELEVATION	TAIL WATER ELEV.	HOURLY GROSS HEAD	TURBINE DISCHARGE C.F.S.	HOURLY GENERATION	RIVER FLOW C.F.S.	SPILLWAY DISCHARGE C.F.S.	HOLLOW JETS C.F.S.
PREV.	3688.70	3133.13	555.57	3505	144			
0100	3688.72	3133.87	554.85	4673	192			
0200	3688.72	3132.63	556.09	<del>2101</del>	120			
0300	3688.72	3132.55	556.17	<del>2229</del>	108			
0400	3688.74	3132.58	556.16	<del>2823</del>	116			
0500	3688.74	3132.49	556.25	3018	124			
0600	3688.76	3132.44	556.32	<del>2580</del>	106			
0700	3688.76	3132.46	556.30	<del>2556</del>	105			
0800	3688.77	3134.21	554.56	4965	204		26165	✓
0900	3688.79	3135.39	553.40	7350	302			
1000	3688.81	3135.32	553.49	6912	284			
1100	3688.81	3135.48	553.33	7521	309			
1200	3688.81	3135.54	553.27	7326	301			
1300	3688.81	3135.63	553.18	7569	311			
1400	3688.82	3136.90	551.92	10417	428			
1500	3688.83	3127.73	551.10	12169	500			
1600	3688.85	3127.95	550.90	12559	516		97988	✓
1700	3688.86	3132.27	550.59	12948	532			
1800	3688.88	3137.28	551.60	11682	480			
1900	3688.89	3135.41	553.48	7569	311			
2000	3688.89	3134.89	554.00	6304	259			
2100	3688.89	3135.30	553.59	7496	308			
2200	3688.88	3135.02	553.86	6815	280		150802	
2300	3688.89	3134.65	554.24	6109	251			
2400	3688.90	3133.00	555.90	3748	154			
TOTAL	88,531.54	25,236.99	13,294.55	160659				
AVG. ELEV.	3688.81	3134.87	553.94	6695				
RELEASES C.F.S.				13390				
RELEASE A.F.				81390				
INFLOW A.F.				23,187,000				
PREV. MID. LAKE STORAGE A.F.				23,255,000				
PRES. MID. LAKE STORAGE A.F.				6601,000				
GROSS GENERATION KWH				492.94				
RATE OF GENERATION KWH/A.F.				86.8				
OVERALL EFFICIENCY (%)								

$A.F. = AVG. C.F.S. \times 2$   
 $KWH/A.F. = \frac{GROSS GEN.}{A.F.}$   
 $EFF. \% = \frac{KWH/A.F.}{1.023 \times AVG. HEAD}$

567.79

097323

WATER RELEASES

24.33846

TIME	LAKE ELEVATION	TAIL WATER ELEV.	HOURLY GROSS HEAD	TURBINE DISCHARGE C.F.S.	HOURLY GENERATION	RIVER FLOW C.F.S.	SPILLWAY DISCHARGE C.F.S.	HOLLOW JETS C.F.S.
PREV.	3688.90	3133.00	555.90	3748	154			
0100	3688.90	3131.65	556.25	3213	132			
0200	3688.91	3131.11	556.80	<del>1996</del>	82			
0300	3688.94	3131.51	556.43	<del>2575</del>	118			
0400	3688.95	3131.31	556.64	<del>2088</del>	94			
0500	3688.97	3131.48	556.49	<del>2059</del>	108			
0600	3688.98	3131.34	556.64	<del>2059</del>	94			
0700	3689.00	3131.66	556.34	<del>2726</del>	112			
0800	3688.99	3134.35	554.64	5695	234		23731	✓
0900	3689.00	3135.45	553.55	8007	329			
1000	3689.00	3134.49	554.51	5817	239			
1100	3689.02	3135.20	553.82	7910	325			
1200	3689.01	3135.26	553.75	7204	296			
1300	3689.03	3135.27	553.76	7375	303			
1400	3689.04	3135.29	553.75	7521	309			
1500	3689.02	3135.27	553.75	7253	298			
1600	3689.01	3135.31	553.70	7277	299		82,071	✓
1700	3689.02	3135.33	553.69	7545	310			
1800	3689.05	3135.51	553.54	7740	318			
1900	3689.05	3135.31	553.74	7302	300			
2000	3689.05	3135.31	553.74	7302	300			
2100	3689.07	3135.31	553.76	7740	318			
2200	3689.10	3136.34	552.76	8056	331			
2300	3689.11	3136.73	552.38	10027	412			
2400	3689.11	3134.30	554.81	5695	234			
TOTAL	88,536.33	75,227.09	13,309.24	143,478				
AVG. ELEV.	3689.01	3134.46	554.55	//////	//////	//////	//////	//////
RELEASES C.F.S.				5980	//////			
RELEASE A.F.				11960	//////			
INFLOW A.F.				43960				
PREV. MID. LAKE STORAGE A.F.				23,255,000				
PRES. MID. LAKE STORAGE A.F.				23,287,000				
GROSS GENERATION KWH				5,895,000				
RATE OF GENERATION KWH/A.F.				492.89				
OVERALL EFFICIENCY (%)				86.7				

A.F. = AVG. C.F.S. X 2  
 KWH/AF. =  $\frac{\text{GROSS GEN.}}{\text{A.F.}}$   
 EFF. % =  $\frac{\text{KWH/AF.}}{1.025 \times \text{AVG. HEAD}}$

+32  
568.41

WATER RELEASES

2433846

TIME	LAKE ELEVATION	TAIL WATER ELEV.	HOURLY GROSS HEAD	TURBINE DISCHARGE C.F.S.	HOURLY GENERATION	RIVER FLOW C.F.S.	SPILLWAY DISCHARGE C.F.S.	HOLLOW JETS C.F.S.
PREV.	3689.11	3134.30	554.81	5695	234			
0100	3689.13	3132.61	556.52	<del>2121</del>	120			
0200	3689.12	3132.51	556.61	<del>2125</del>	121			
0300	3689.12	3132.43	556.64	3213	132			
0400	3689.14	3132.47	556.67	<del>2894</del>	123			
0500	3689.14	3132.55	556.59	3018	124			
0600	3689.15	3132.37	556.78	<del>2895</del>	117			
0700	3689.16	3132.52	556.64	3018	124		20957	✓
0800	3689.18	3135.20	553.98	6815	280			
0900	3689.20	3135.38	553.82	7375	303			
1000	3689.20	3135.39	553.81	7156	294			
1100	3689.20	3136.76	552.44	10952	413			
1200	3689.19	3137.28	551.91	11123	457			
1300	3689.19	3137.86	551.33	12072	496			
1400	3689.18	3138.18	551.00	13094	538			
1500	3689.19	3137.74	551.45	12267	504			
1600	3689.19	3138.02	551.16	12753	524		113,664	✓
1700	3689.20	3138.43	550.77	14116	580			
1800	3689.23	3138.56	550.67	14262	586			
1900	3689.21	3137.42	551.79	11585	476			
2000	3689.21	3136.30	552.91	2640	355			
2100	3689.23	3136.22	553.01	8299	341			
2200	3689.24	3135.72	553.52	2129	334		178,695	
2300	3689.24	3134.76	554.48	5111	210			
2400	3689.24	3133.55	555.69	4138	170			
TOTAL	2,254,047	7,525,024	1,329,024	187,944				
AVGE. ELEV.	3689.19	3135.43	553.76					
RELEASES C.F.S.				7,830				
RELEASE A.F.				15,660				
INFLOW A.F.				35,660				
PREV. MID. LAKE STORAGE A.F.				23,287,000				
PRES. MID. LAKE STORAGE A.F.				23,307,000				
GROSS GENERATION KWH				7,722,000				
RATE OF GENERATION KWH/A.F.				493.10				
OVERALL EFFICIENCY (%)				26.9				

A.F. = AVG. C.F.S. X 2  
 KWH/A.F. = GROSS GEN. + 20 A.F.  
 EFF. % =  $\frac{\text{KWH/A.F.}}{1.025 \times \text{AVG. HEAD}}$   
 567.60

24.33876

TIME	LAKE ELEVATION	TAIL WATER ELEV.	HOURLY GROSS HEAD	TURBINE DISCHARGE C.F.S.	HOURLY GENERATION	RIVER FLOW C.F.S.	SPILLWAY DISCHARGE C.F.S.	HOLLOW JETS C.F.S.
PREV.	3689.24	3133.55	555.69	4138	170	—	—	—
0100	3689.27	3132.97	556.30	3164	130			
0200	3689.28	3133.66	555.62	3894	160			
0300	3689.29	3132.70	556.59	3237	123			
0400	3689.29	3132.89	556.40	3237	133			
0500	3689.30	3133.13	556.17	3229	145			
0600	3689.29	3132.79	556.50	3237	120			
0700	3689.30	3133.81	555.49	3943	162			
0800	3689.31	3136.36	552.95	9200	378		32882	✓
0900	3689.33	3135.68	553.65	7886	324			
1000	3689.34	3136.91	552.43	9541	392			
1100	3689.35	3137.78	551.57	11634	478			
1200	3689.35	3138.43	550.92	13605	559			
1300	3689.36	3138.30	551.06	13897	571			
1400	3689.37	3137.44	551.94	11171	459			
1500	3689.36	3137.89	551.47	11853	427			
1600	3689.39	3137.86	551.53	12315	506		124,784	✓
1700	3689.37	3137.72	551.65	11244	462			
1800	3689.38	3138.34	551.04	13216	543			
1900	3689.37	3137.77	551.60	12096	497			
2000	3689.37	3137.61	551.76	11050	454			
2100	3689.38	3138.04	551.34	12534	515			
2200	3689.39	3138.33	551.06	13459	553		198,383	
2300	3689.41	3135.33	554.08	7204	296			
2400	3689.43	3132.47	556.96	208,045	101			
TOTAL	2854.429	7526.421	1.328,008	208,045				
AVG. ELEV.	3689.35	3136.01	553.34					
RELEASES C.F.S.				8,670				
RELEASE A.F.				17,340				
INFLOW A.F.				46,340				
PREV. MID. LAKE STORAGE A.F.				23,307,000				
PRES. MID. LAKE STORAGE A.F.				23,336,000				
GROSS GENERATION KWH				2,548,000				
RATE OF GENERATION KWH/A.F.				492.96				
OVERALL EFFICIENCY (%)				26.9				

$A.F. = AVG. C.F.S. \times 2$   
 $KWH/A.F. = \frac{GROSS GEN.}{A.F.}$   
 $EFF. \% = \frac{KWH/A.F.}{1.025 \times AVG. HEA}$

567.17

C07323

24.33846 / 24.29384

WED. JUN - 8 1988

TIME	LAKE ELEVATION	TAIL WATER ELEV.	HOURLY GROSS HEAD	TURBINE DISCHARGE C.F.S.	HOURLY GENERATION	RIVER FLOW C.F.S.	SPILLWAY DISCHARGE C.F.S.	HOLLOW JETS C.F.S.
PREV.	3689.43	3132.47	556.9	[REDACTED]	101	—	—	—
0100	3689.44	3132.85	556.59	3091	127			
0200	3689.44	3132.85	556.59	3188	131			
0300	3689.45	3132.87	556.58	3286	135			
0400	3689.46	3132.87	556.59	3164	130			
0500	3689.48	3133.00	556.48	3186	135			
0600	3689.48	3132.86	556.62	3234	137		19349	
0700	3689.50	3132.89	556.61	[REDACTED]	113			
0800	3689.50	3134.84	554.66	6195	255			
0900	3689.52	3134.32	555.20	5102	210			
1000	3689.53	3135.82	553.71	7677	316			
1100	3689.55	3138.35	551.20	14431	594			
1200	3689.55	3138.92	550.63	16787	691			
1300	3689.54	3138.71	550.83	14285	588			
1400	3689.54	3139.14	550.40	16131	664			
1500	3689.56	3139.04	550.52	15840	652			
1600	3689.57	3139.13	550.44	16131	664			
1700	3689.58	3139.46	550.12	17905	737			
1800	3689.58	3137.28	550.30	16228	668			
1900	3689.59	3139.75	550.84	15378	633			
2000	3689.58	3138.38	551.20	13745	574			
2100	3689.58	3138.77	550.81	14965	616			
2200	3689.59	3138.20	551.39	14188	584			
2300	3689.62	3135.92	553.70	8308	242		235,590 ✓	
2400	3689.62	3133.46	556.16	4106	169			
TOTAL	88548.85	75270.69	13278.17	239,696				
AVG. ELEV.	3687.54	3136.28	553.26	[REDACTED]				
RELEASES C.F.S.				9985	[REDACTED]			
RELEASE A.F.				19970	[REDACTED]			
INFLOW A.F.				48,970				
PREV. MID. LAKE STORAGE A.F.				23,336,000				
PRES. MID. LAKE STORAGE A.F.				23,365,000				
GROSS GENERATION KWH				9,865,000				
RATE OF GENERATION KWH/A.F.				493.99				
OVERALL EFFICIENCY (%)				87.17%				

A.F. = AVG. C.F.S. X 2  
 KWH/A.F. = GROSS GEN. / A.F.  
 EFF. % = KWH/A.F. / 1.025 X AVG. HEAD

493.99  
 567.09

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U.S. BUREAU OF RECLAMATION  
GLEN CANYON POWERPLANT  
WATER RELEASES

DATE

(24.29384)

TIME	LAKE ELEVATION	TAIL WATER ELEV.	HOURLY GROSS HEAD	TURBINE DISCHARGE C.F.S.	HOURLY GENERATION	RIVER FLOW C.F.S.	SPILLWAY DISCHARGE C.F.S.	HOLLOW JETS C.F.S.
PREV.	3689.62	3133.46	556.16	4106	169			
0100	3689.64	3132.91	556.73	3158	130			
0200	3689.65	3132.95	556.70	3595	148			
0300	3689.65	3132.66	556.99		120			
0400	3689.64	3132.84	556.80	3182	131			
0500	3689.63	3133.08	556.55	3644	150			
0600	3689.65	3133.04	556.61	3717	153			
0700	3689.66	3133.73	555.93	4251	175			
0800	3689.68	3136.36	553.32	8989	370		33451	✓
0900	3689.70	3136.03	553.67	8697	358			
1000	3689.73	3137.41	552.32	10349	426			
1100	3689.74	3138.85	550.89	14649	603			
1200	3689.75	3138.53	551.22	14479	596			
1300	3689.75	3139.37	550.38	16933	699			
1400	3689.75	3139.50	550.25	18463	760			
1500	3689.75	3138.82	550.93	15305	630			
1600	3689.76	3138.45	551.31	14819	610			
1700	3689.77	3138.40	551.37	13726	565			
1800	3689.77	3138.32	551.47	13896	572			
1900	3689.79	3137.71	552.08	12973	534			
2000	3689.80	3136.34	553.76	8163	336			
2100	3689.81	3136.98	552.82	9912	408			
2200	3689.82	3137.04	552.78	11151	459			
2300	3689.82	3135.20	554.62	6631	275		223647	
2400	3689.85	3133.34	556.51	3936	162			
TOTAL	88553.58	75267.86	13285.72	227593				
AVG. ELEV.	3689.73	3136.16	553.57					
RELEASES C.F.S.				9485				
RELEASE A.F.				18970				
INFLOW A.F.				53970				
PREV. MID. LAKE STORAGE A.F.				23,365,000				
PRES. MID. LAKE STORAGE A.F.				23,400,000				
GROSS GENERATION KWH				9,368,000				
RATE OF GENERATION KWH/A.F.				493.83				
OVERALL EFFICIENCY (%)				87.0%				

A.F. = AVG. C.F.S. X 2  
 KWH/A.F. =  $\frac{\text{GROSS GEN.}}{\text{A.F.}}$   
 EFF. % =  $\frac{\text{KWH/A.F.}}{1.025 \times \text{AVG. HEA}}$  493.83 / 567.41

U.S. BUREAU OF RECLAMATION  
GLEN CANYON POWERPLANT  
WATER RELEASES

(24.29384)

TIME	LAKE ELEVATION	TAIL WATER ELEV.	HOURLY GROSS HEAD	TURBINE DISCHARGE C.F.S.	HOURLY GENERATION	RIVER FLOW C.F.S.	SPILLWAY DISCHARGE C.F.S.	HOLLOW JETS C.F.S.
PREV.	3689.85	3133.34	556.51	3936	162			
0100	3689.87	3133.31	556.56	4106	169			
0200	3689.88	3132.98	556.90	3353	138			
0300	3689.87	3132.88	556.99	3158	130			
0400	3689.87	3132.90	556.97	3122	131			
0500	3689.87	3132.91	556.96	3110	128			
0600	3689.89	3132.95	556.94	3328	137			
0700	3689.90	3133.64	556.26	3814	157		24,051	
0800	3689.91	3135.81	554.10	4899	284			
0900	3689.92	3136.76	553.16	9572	394			
1000	3689.94	3137.96	551.98	11467	472			
1100	3689.96	3138.62	551.34	15208	626			
1200	3689.97	3138.65	551.32	14479	596			
1300	3689.97	3138.47	551.50	14673	604			
1400	3689.99	3138.47	551.52	13507	556			
1500	3689.99	3138.99	551.00	15208	626			
1600	3690.00	3139.06	550.94	15912	655			
1700	3690.02	3137.46	550.56	16860	694			
1800	3690.02	3139.47	550.55	17419	717			
1900	3690.03	3138.98	551.05	15645	644			
2000	3690.03	3139.20	551.83	14139	582			
2100	3690.04	3137.69	552.35	11491	473			
2200	3690.05	3137.49	552.56	11442	471			
2300	3690.05	3136.62	553.43	9062	373		237,034	
2400	3690.05	3133.25	556.80	3401	140			
TOTAL	88559.09	75275.52	13283.57	240,435				
AVGE. ELEV.	3689.96	3136.48	553.48					
RELEASES C.F.S.				10,020				
RELEASE A.F.				20,040				
INFLOW A.F.				52,040				
PREV. MID. LAKE STORAGE A.F.				23,400,000				
PRES. MID. LAKE STORAGE A.F.				23,432,000				
GROSS GENERATION KWH				9,899,000				
RATE OF GENERATION KWH/A.F.					493.96			
OVERALL EFFICIENCY (%)								87.190

A.F. = AVG. C.F.S. X 2  
 KWH/AF. = GROSS GEN. / A.F.  
 EFF. % = KWH/AF. 493.96 / 1.025 X AVG. H. 567.3

U.S. BUREAU OF RECLAMATION  
GLEN CANYON POWERPLANT  
WATER RELEASES

DATE JUN 11 1988  
SAT.

(34,29384)

TIME	LAKE ELEVATION	TAIL WATER ELEV.	HOURLY GROSS HEAD	TURBINE DISCHARGE C.F.S.	HOURLY GENERATION	RIVER FLOW C.F.S.	SPILLWAY DISCHARGE C.F.S.	HOLLOW JETS C.F.S.
PREV.	3690.05	3133.25	556.80	3401	140			
0100	3690.07	3133.40	556.67	4008	165			
0200	3690.10	3133.24	556.86	3863	159			
0300	3690.11	3132.84	557.27	3012	124			
0400	3690.11	3133.16	556.95	3798	144			
0500	3690.11	3132.31	556.80	3791	154			
0600	3690.12	3133.01	557.11	3474	143			
0700	3690.12	3133.06	557.06		116		24.714	
0800	3690.13	3135.44	554.69	6948	226			
0900	3690.14	3135.64	554.50	7288	300			
1000	3690.16	3135.64	554.52	7288	300			
1100	3690.18	3135.75	554.43	7458	307			
1200	3690.21	3135.87	554.34	7653	315			
1300	3690.24	3135.70	554.54	7361	303			
1400	3690.26	3135.70	554.56	7288	300			
1500	3690.26	3135.70	554.56	7288	300			
1600	3690.26	3135.70	554.56	7312	301			
1700	3690.25	3135.66	554.59	7410	305			
1800	3690.26	3135.69	554.57	7118	293			
1900	3690.26	3135.67	554.59	7410	305			
2000	3690.30	3135.69	554.61	7215	297			
2100	3690.31	3135.69	554.63	7434	306			
2200	3690.32	3135.67	554.66	7142	294			
2300	3690.34	3135.20	555.14	6827	281		140254	
2400	3690.34	3132.98	557.36	3353	138			
TOTAL	78564.97	75235.40	13329.57	144,207				
AVG. ELEV.	3690.21	3134.81	555.40					
RELEASES C.F.S.				6010				
RELEASE A.F.				12020				
INFLOW A.F.				57020				
PREV. MID. LAKE STORAGE A.F.				23,432,000				
PRES. MID. LAKE STORAGE A.F.				23,477,000				
GROSS GENERATION KWH				5,936,000				
RATE OF GENERATION KWH/A.F.					493.84			
OVERALL EFFICIENCY (%)								86.2%

A.F. = AVG. C.F.S. X 2  
 KWH/A.F. = GROSS GEN. / A.F.  
 EFF. % = KWH/A.F. / (1.025 X AVG. HE) = 493.8 / 569.29

David Wegner  
Glen Canyon Environmental Impact Statement (GCD-EIS)  
U.S. Bureau of Reclamation  
P.O. Box 11568  
Salt Lake City, Utah 84147

April 29, 1990

Dear Mr. Wegner:

The following comments are made by:

Representing:

Larry Stuhl (Lawrence Alan Stuhl)  
338 Parkview Avenue  
Golden, Colorado 80401

High Country River Rafters (President)  
P.O. Box 709  
Golden, Colorado 80402

The High Country River Rafters (HCRR) is an organization of private boaters based in Golden, Colorado. The HCRR support the current efforts designed to consider the environmental impacts resulting from the operation of Glen Canyon Dam. We emphasize that although we are dedicated to the safe, recreational use of river resources, our primary concern is conservation of those river resources and the natural ecosystems. We submit the following comments as representatives of the private boating community.

Comment 1: It is our understanding that the public input meetings are intended as a means to develop the scope of the GCD-EIS. However, the Format and Ground Rules guidelines distributed by the Bureau of Reclamation (BOR) indicate that the public should confine their comments to "the scope of the Glen Canyon EIS". It seems from this statement and from past correspondence, that the BOR has already judged the scope of the EIS and that public input will be disregarded if inconsistent with the predetermined scope. If the Glen Canyon EIS has been prejudged to exclude the upstream effects of the dam, than the public has been denied the opportunity for meaningful input and the process will be inherently biased. The exclusion of upstream impacts on the basis that those impacts are the result of the mere existence of the dam, as opposed to operation of the dam, is arbitrary and capricious.

Comment 2: The operating criteria of the dam include the hydraulic head developed by the reservoir behind the dam. Certainly power generating capacity would be drastically reduced if the operating reservoir depth were 50 feet instead of 650 feet. The extreme depth results in water temperature horizons developing within the reservoir. The cold water released from the dam adversely impacts the downstream environment including wildlife and recreation. The Glen Canyon Environmental Studies intend to look at a variable intake structure as a means to mitigate adverse impacts; however, that study described in a recently letter from Dr. Patten failed to include studies of the adverse impacts of cold water caused by the operation of Glen Canyon Dam. The adverse impacts of the cold water environment on native fisheries and recreation must be studied or the EIS will be fundamentally flawed and ignore one of the greatest impacts of the dam. The GCD-EIS must look at the impacts of cold water to be able to judge the need for and effectiveness of a variable intake structure.

Comment 3: If for administrative or other reasons it is impractical to include both upstream and downstream impacts of the dam in one EIS, the BOR should undertake two separate EISs and develop mitigative measures that are consistent for both upstream and downstream environments. Upstream impacts that should be considered include diminished recreational opportunities in Canyonlands due to backwaters, loss of inundated geological, cultural, and

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historical features, impacts to wildlife and vegetation due to fluctuating reservoir level, and the filling of the reservoir with sediment.

Comment 4: One of the greatest downstream impacts of Glen Canyon Dam is the cold water environment. Five of eight native fish species have been eliminated from the canyon, including three of four threatened or endangered species, as a result of the cold water and reduced sediment load. The EIS should endeavor to determine the optimum water temperature for native fish and find mitigative measures to achieve optimum temperatures. The EIS should include studies and identify mitigative measures that would allow for reintroduction of expatriated native fish species. Cold water resulting from operation of Glen Canyon Dam also adversely impacts recreational opportunities within the Grand Canyon and creates unwarranted risks of hypothermia and increased risk of drowning. These impacts should be studied and mitigative measures developed. The effect of cold water on the Grand Canyon environment should also be studied. Have non-native vegetation or wildlife that prosper near the cold water environment created adverse environmental impacts on native vegetation of wildlife? In this study, compare the environments of Stillwater or Cataract Canyons with the Grand Canyon.

Comment 5: Much emphasis of the GCD-EIS should be focused on the impacts of sediment depletion and means to mitigate those impacts. The BOR should maintain steady interim flows of a minimum of 5,000 cfs until such time as the GCD-EIS finds a more appropriate flow regime. Our members have seen noticeable beach degradation even within the last ten years. Comparison of current day photographs with photographs taken during the Powell expeditions show stunning differences in beach topography. The GCD-EIS should study not only beach erosion, but also beach sedimentation processes. Mitigative measures should be developed that not only prevent further erosion but that provide a depositional environment in all parts of the Grand Canyon including Marble Canyon. Augmentation of the suspended load in the river is imperative to this end. Unless the suspended load is augmented, it is inevitable that beaches will be permanently lost. A slurry line from the upper reaches of Lake Powell would enable the BOR to reintroduce dredged materials just below Glen Canyon Dam and thereby supplement the suspended load. This slurry would also help supply some warmer water to the Grand Canyon, help ensure minimum flows, and extend the useful life of Glen Canyon Dam by forestalling the filling of the reservoir with sediment. Research efforts should identify the minimum flow required to adequately transport the sediment within the Grand Canyon. Mitigative measures involving structural features downstream of Lee's Ferry are unacceptable. Suggestions to plane-off beaches, to build concrete platforms or retaining walls, to dredge within the Grand Canyon, or to construct new artificial beaches are completely unacceptable. Part of the intent of the EIS is to identify means to minimize human impacts on the natural environment, not to further impact that environment.

Comment 6: Following a Grand Canyon river trip from May 25 to June 10 1988, the trip leader requested a listing of Glen Canyon Dam releases during that period. Releases were as low as 1,270 cfs. This is inconsistent with the 5,000 cfs minimum dam discharges described in the "FACTUAL INFORMATION" leaflet recently distributed by the BOR. Why were actual discharges below the prescribed minimum? How often do below minimum discharges occur? The GCD-EIS should develop mitigative measures to ensure that all discharges are equal to or in excess of the minimum 5,000 cfs. During that same trip, water temperatures at Lees Ferry and in Marble Canyon were measured at 42°F. Air temperatures at the time were in excess of 100°F. This is also inconsistent with the water temperature of 50°F claimed in the "FACTUAL INFORMATION" leaflet. The GCD-EIS should develop mitigative measures to ensure discharges are at temperatures that are optimum for native fisheries.

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Comment 7: Fluctuating flows not only adversely impact beach sedimentation, these flows also adversely impact the safety of recreational boating. The unpredictable flow often cause boats to become hung up on rocks or stranded on beaches when flows change overnight. This often forces boaters to fall behind schedule and navigate rapids at hazardous water levels. The GCD-EIS should evaluate these impacts and seek mitigative measures to minimize these impacts. Mitigative measures may include steady flows or a structured fluctuating flow schedule and a predictive model that will allow boaters at any location in the Grand Canyon to know when, where, and how much flows will change. For this second mitigative measure to be effective, boaters would need to be given the scheduled releases for the period three week subsequent to their launch date and they would need to have a copy of the predictive model.

Comment 8: Although the trout fishery within the Glen Canyon Area Recreation Area is a desirable impact of the dam, this exotic trout fishery has been established to the detriment of the native fisheries. It is not the desire of the HCRR to disregard this important trout fishery, most of our members are also fishermen and women; however, the non-native fishery must be secondary to the native fisheries.

Comment 9: River salinity has increased over 37 percent since the dam began operations. The causes, effects, and measures to offset this salinity should be included in the GCD-EIS.

Comment 10: The impacts of large groups on degradation of beaches should be included in the GCD-EIS. A model should be developed to identify the relationship between group size, fluctuating flows, and steady flows. The study should recommend a maximum group size to minimize erosion. Any recommendations could be implemented as "nonstructural changes" to the NPS River Management Plan for the Grand Canyon.

Comment 11: We believe the time frame in which this study is to be completed is unreasonably short. There is no advantage to limiting the study to ensure publication of the Final EIS by December 1991. The previous high flow studies required more time than is currently being allowed. A thorough field program to collect data will take a minimum of two years. The first year (Phase I) should include all studies identified prior to the first field program. The second year (Phase II) should include studies designed to fill data gaps and any additional studies identified subsequent to the initial field program. Following completion of the field programs a minimum of one year should be allowed to ensure thorough assessment of all pertinent data and to allow time for writing of the Draft EIS. The Draft EIS should incorporate information from the previous high flow studies. The HCRR recommend the time frame for completion of the EIS be as follows:

- May 1990 - May 1992: Phase I and Phase II data collection
- Jun 1992 - Jun 1993: Preparation of the Draft EIS
- Jul 1993 - Sep 1993: Public comment period on Draft EIS
- Oct 1993 - Jun 1994: Preparation of the Final EIS
- Jul 1994 - Sep 1994: Dispute period

The environmental and recreational communities, believe it is essential this EIS be thorough and unfettered by administrative limits. This is one of the biggest and most important EISs' ever undertaken and should not be restricted by artificial deadlines.

Comment 12: Mitigative measures involving downstream structural features such as a

reregulation dam and sediment augmentation structures are generally undesirable. However, it is preferable to minimize downstream damages by incorporating structural features as a last resort. The HCRR would vigorously oppose construction of retaining walls along beaches within the Grand Canyon or any other features that reduce the wilderness experience in the Grand Canyon. A reregulation dam and sediment augmentation structures would be acceptable provided both structures are upstream and out of sight from the Lees Ferry area. A reregulation dam should create as shallow a reservoir as possible to maximize warming of regulated waters but still provide damping of flow fluctuations.

In addition to a variable intake structure, the GCD-EIS should consider additional measures to warm regulated waters closer to temperatures found under natural conditions. Such measures may include collecting waste heat from operations of Glen Canyon Dam or Navajo Power Plant. Other alternatives may involve enhancing warm air contact with the water by aeration.

Comment 13: What errors occurred during the EA undertaken prior to the rewinding of the generators in 1980 that allowed for a conclusion that a FONSI was justified when so many adverse impacts are so clearly evident? How can the oversights be avoided in this EIS?

In summary, the issues of greatest concern in approximately the order of importance (greatest to least) are:

- (1) Adverse impacts on native fisheries, Grand Canyon ecosystems, and recreation resulting from the cold water environment created by the operation of Glen Canyon Dam;
- (2) Adverse impact of beach erosion and depletion resulting from trapping of sediment and fluctuating flows caused by operation of Glen Canyon Dam and from human use of beaches;
- (3) Disproportionate and inappropriate emphasis on exotic fish species relative to threatened and endangered fish species;
- (4) Adverse impacts resulting from actual flow and temperature regimes being inconsistent the prescribed operations;
- (5) Inadequate time frame for completion of a thorough EIS;
- (6) Failure of the BOR to commit to guaranteed interim flows designed to ensure protection of the resources during the EIS;
- (7) Degradation of water quality (increased salinity) resulting from operation of Glen Canyon Dam;
- (8) Predetermination of the scope of the GCD-EIS by the BOR that has precluded the opportunity for meaningful public input; and
- (9) Adverse upstream impacts resulting from the operation of Glen Canyon Dam.

The High Country River Rafters encourage the GCD-EIS to consider the impacts of operational, structural, and non-operational mitigative measures. The following should be the emphasis of any mitigative measures:

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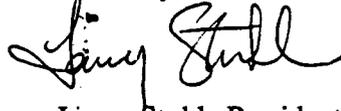
- (1) Measures should restore a warm water environment conducive to recovery of native fisheries; threatened and endangered species already eliminated from the canyon should be reintroduced; and risks of hypothermia during recreational activities should be minimized.
- (2) Measures should ensure that the erosional/depositional environments in all parts of the Grand Canyon results in no net loss of beaches within any section of the Grand Canyon. Emphasis is added here to ensure beaches are not lost in the Marble Gorge even though downstream sections may have net depositional environments.
- (3) Negative impacts of human use on beach degradation and fisheries should be minimized to the extent possible through limitations to group size, areas of visitation, and a catch-and-release program.
- (4) Measures designed to remedy temperature or erosional problems should not negatively impact the "wilderness" experience of the Grand Canyon.

To these ends, the HCRR would support:

- (1) Variable intake structures to use surface water from Lake Powell for power generation and water releases and a warm water slurry line with materials dredged from the upper reaches of Lake Powell;
- (2) Systems providing waste heat recovery, water aeration, sediment augmentation, and reregulation dams within the Glen Canyon Recreation Area (out of sight from Lees Ferry);
- (3) Steady flow regimes no lower than 5,000 cfs;
- (4) Limitations on group size, including guides, as low as 16 for both the commercial and the private sectors; and
- (5) Catch-and-release of all fish species and limitation on human visitations at critical native fisheries habitats such as the Little Colorado River.

Again, the HCRR support the ongoing efforts and we request to be kept informed directly and involved to the extent possible throughout the process. This is a revised version of the letter originally presented at the scoping meeting in Denver on March 13 and takes precedence over the original letter.

Sincerely,



Larry Stuhl, President  
High Country River Rafters  
P.O. Box 709  
Golden, Colorado 80402

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# IMPERIAL IRRIGATION DISTRICT

OPERATING HEADQUARTERS • P. O. BOX 937 • IMPERIAL, CALIFORNIA 92251

TS

10 April 1990

Glen Canyon Dam - Environmental Impact Statement  
U.S. Bureau of Reclamation  
C/O Mr. Roland Robison, Regional Director  
P.O. Box 11568  
Salt Lake City, UTAH 84147

Dear Mr. Robison:

Thank you for the opportunity to provide comments as part of the initial scoping process for the Glen Canyon Dam Environmental Impact Statement. Being an "end-user" of the Colorado River system, the Imperial Irrigation District is always concerned about potential impacts of upstream projects and processes on water supply, water quality, and power production. We also appreciate the complexity of the situation, and the diverse perspectives of the other water user groups, including recreational interests, National Park management, and other water managers.

Salinity, and potential salinity increases, continues to be an issue of vital concern to the Imperial Valley. Added to the complexity of water quality to Mexico and salt balance within the agricultural community are the efforts to maintain resource values associated with the Salton Sea. As indicated in your Factual Information pamphlet, average annual salinity in Lake Powell is currently about 600 parts per million (TDS?), and is expected to increase to 820 ppm by the year 2020. As part of our continuing effort to encourage economically justifiable salinity control in both Upper and Lower Basin States, we ask you to include an assessment of Glen Canyon Dam water storage and release patterns on water quality, including salinity, of Colorado River water.

I say water quality, rather than just salinity, because other issues are becoming equally important as time passes. Selenium in our Valley comes in with Colorado River water, along with low levels of pollutants discharged from upstream users. With the 1987 Amendments to the Federal Clean Water Act, and California's efforts to adopt an "Inland Surface Waters Plan," discharge to agricultural drains may be affected by the quality of our incoming water. Because of these impacts of upstream actions, we ask that all appropriate water quality issues be addressed.

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Mr. Roland Robison

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10 April 1990

Thank you again for the opportunity to comment, and we look forward to receiving a draft EIS for thorough review. If you have any questions, or would like additional information, please contact Dr. Randall K. Stocker (619-339-9426).

Sincerely,



CHARLES L. SHREVES  
General Manager

RKS:sc

cc Colorado River Board  
Metropolitan Water District  
Coachella Valley Water District

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P.C

# IMPERIAL IRRIGATION DISTRICT

OPERATING HEADQUARTERS • P. O. BOX 937 • IMPERIAL, CALIFORNIA 92251

AGM

April 30, 1990

The Honorable Roland G. Robison  
Upper Colorado Regional Director  
Bureau of Reclamation  
P. O. Box 11568  
Salt Lake City, UT 84147

Subject: Scope of the Glen Canyon Dam Environmental  
Impact Statement (EIS) and HR 4498

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MAY 02 '90

Date	Initials	
		115

Subj: Correct  
Date: Amend

Dear Mr. Robison:

Our attention has been brought to the relationship of the above-referenced scoping process and the proposed HR 4498 by Congressman George Miller of California. Being an "end-user" of the Colorado River system, the Imperial Irrigation District is always concerned about potential impacts of upstream regulatory reviews/environmental analyses and proposed legislation on water supply, water quality, and power production.

Management of the Colorado River and specifically in this instance the Glen Canyon Dam must not be tampered with until full studies and public comments are made regarding the impacts on: (1) full development of water resources in the Colorado River Basin, (2) power generation to meet peak demands and the cost of power, (3) repayment of Colorado River project development costs, (4) operation of the entire Colorado River system, and (5) water quality impacts including both salinity and toxic elements.

Please be very much aware that any attempt through the use of legislation such as HR 4498 to impose immediate operating restrictions should be prevented. To enter the summer months with a change in normal operations could sacrifice the stability of the economy of the entire region to satisfy other interests. This does not seem reasonable.

Imperial Irrigation District appreciates the opportunity to provide further comments (see enclosed April 10, 1990 letter to Regional Director Roland Robison) on the scope of the EIS, to express our concern regarding HR 4498, and to assure you our interest in being fully informed and involved in activities regarding the Colorado River.

Sincerely,

CHARLES L. SHREVES  
General Manager

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Enc.  
RAM:sg  
HR4498-2.LET

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Date Ans'd \_\_\_\_\_

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FLDR # 20990

April 25, 1990

Mr. Roland G. Robison, Director  
Upper Colorado River Region  
Bureau of Reclamation  
U. S. Department of the Interior  
P. O. Box 11568  
Salt Lake City, Utah 84147

**RE: Comments for Glen Canyon Dam Environmental Impact  
Statement Scoping**

Dear Mr. Robison:

Intermountain Consumer Power Association (ICPA) represents 39 municipal electric utilities, rural electric cooperatives, and water service districts serving a population of approximately 300,000 people living in Utah, Nevada, Colorado, Wyoming and Arizona. ICPA purchases approximately 20 percent of the electrical power and energy generated by the Colorado River Storage Project output that is marketed by the Western Area Power Administration. ICPA members are non-profit organizations that typically serve rural and agricultural areas. The price of CRSP power is an important component of the competitive vitality and the very existence of these small utilities. Therefore, any contemplated change to the CRSP resource creates ardent interest by all ICPA members.

ICPA attended and participated in the March 12, 1990 scoping meeting held in Salt Lake City. There is no question that the issues surrounding this process are complex and far reaching. They will require balancing the concerns advanced by differing segments of the public. ICPA appreciates the difficult task placed upon the Bureau of Reclamation in reviewing and analyzing the many comments and suggestions expressed in determining the course necessary to address those concerns. ICPA also appreciates the opportunity to submit the following comments concerning that process.

ICPA supports the EIS process and pledges its full attention to ensure that a thorough and comprehensive examination is made of all the issues surrounding operations of the Glen Canyon Dam and potential solutions to problems identified in the course of the study. CRSP power represents

007242

Mr. Roland G. Robison  
April 25, 1990  
Page 2

a significant resource to our membership and the EIS process must address all environmental and economic impacts of all acceptable alternatives developed including no impact. These impacts must not be limited to areas immediately below the dam, but also those affecting the socioeconomic well being of communities within the entire Colorado River Region.

While ICPA is supportive of the EIS process, we note that a significant portion of the costs to conduct these studies are being recovered through power revenues. In addition, proposed research flows designed to gather important scientific data relating to operations is expected to have enormous negative impacts to power generation at Glen Canyon Dam. We feel strongly that scientific data, as it relates to normal operating criteria, is critical to the final determination of the true nature of the impacts to the river and ecosystem below the dam. We argue that if the Bureau does not study these impacts during normal operations, an inadequate and incomplete study will have been conducted and the benefit of the EIS will have been subverted. The Bureau should resist any attempt to alter normal operating releases until such time sufficient data is gathered to determine appropriate alternative releases minimizing impacts to all concerned interests. To change operations before studies are completed would only provide incorrect data to use for the basis of determining the final EIS process product.

As we have reviewed the ongoing Glen Canyon studies for information gathering, we have noted a predisposition for results requiring changes in release flows. ICPA believes the EIS must environmentally and economically address all viable and reasonable alternatives. This includes all viable non-operational alternatives such as a re-regulating structure. Solutions addressed in the EIS must be cost effective, balanced and based on scientific evidence.

The EIS must reflect the multi-purpose aspects of Glen Canyon Dam by identifying the impacts of all canyon uses on the ecosystem and establishing what kind of contribution each purpose can make towards the solution of adverse impacts. During the process, many statements were made regarding the Grand Canyon's status as a natural wonder. That fact cannot be disputed. However, equity demands that the costs for maintaining and preserving that marvel should not be born by only a few users who are already responsible for cost recovery of the majority of CRSP. The Grand Canyon is a national treasure and its protective management should be the responsibility of the nation as a whole, shared by those interests receiving direct benefits, such as recreationists.

C07242

Mr. Roland G. Robison  
April 25, 1990  
Page 3

Consideration must also be given to the enhanced environment resulting from the placement of the dam. A draft Fish and Wildlife Service report indicates indisputable evidence that certain aspects of the riverine habitat below the dam have improved from pre-dam eras. Population of Bald Eagles, Peregrine Falcon, and Willow Fly Catchers are flourishing in the canyon where they did not exist before drawn by the plentiful trout fishing that was also a result of the dam. The public outcry has erroneously been focused on the so called devastating impacts presently occurring. Again, this perceived damage must be balanced against the real enhanced environment, superb trout fishing and spectacular rafting trips that have actually taken place since 1964.

We thank you again for this opportunity to express these views on behalf of our members. We look forward to further participation in the EIS process and stand ready to assist the Bureau of Reclamation in any way.

Sincerely yours,



Carolyn S. McNeil  
General Manager

CSM/ECR/yta

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CONT. # 90-21392

**IRRIGATION & ELECTRICAL DISTRICTS  
ASSOCIATION OF ARIZONA**

FLDR # 20990

H. GALE PEARCE  
PRESIDENT

SUITE 204  
2001 NORTH THIRD STREET  
PHOENIX, ARIZONA 85004-1472  
(602) 254-5908

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ASSISTANT SECRETARY-TREASURER

**010154**

May 3, 1990

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Mr. Roland G. Robison  
Regional Director  
Upper Colorado Regional Office  
U.S. Bureau of Reclamation  
P.O. Box 11568  
Salt Lake City, Utah 84147

Re: Scoping the Glen Canyon Dam Environmental Impact Statement

Dear Mr. Robison:

The Irrigation and Electrical Districts Association of Arizona (IEDA) is a member of the Colorado River Energy Distributors Association (CREDA). As such, we support the comments on the scoping of the Glen Canyon Dam EIS that have been submitted to you by CREDA as well as the prior statements and testimony given to you at the scoping meetings by CREDA. Given the path this process has taken to date, we wish to make two additional points for your consideration.

First, if you are extending the time frame for completion of the EIS, we urge you to push staff and consultants to complete their study efforts and analyses without extending the current research schedule. Human nature is such that, given more time to do a task, people tend to take the additional time. We think it would be a management mistake to allow the entire process to now automatically extend out to some new limit. Rather, we believe the extended time should be a safety valve to be scheduled into as events develop and data is recovered and analyzed.

Second, we are concerned that the scoping of the EIS may be considered by some to be a process of picking those things mentioned most often in comments or mentioned by the largest number of commentors. The National Environmental Policy Act requires that "all reasonable alternatives" be analyzed in the EIS. That is an objective standard, not a popularity contest. A thorough, rational assessment must be made. Nor can you favor, as some have suggested, operational alternatives over other types of alternatives and examine non-operational alternatives only if operational alternatives are found wanting. Doing so would not achieve the "reasonable" standard required by the law.

Mr. Roland G. Robison  
May 3, 1990  
Page 2

We hope that the ongoing public process and communication with interested parties will allow a continued dialogue on these issues. Thank you for the opportunity to comment on this important process.

Sincerely,



Robert S. Lynch  
Asst. Secretary/Treasurer

RSL:psr  
Enclosure  
cc w/enc:  
cc:

Dennis Underwood, Commissioner of Reclamation  
Thaine Michie, CREDA President  
Cliff Barrett, CREDA Executive Director  
Environmental Studies Work Group  
IEDA Members

NO. 500-60

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May 3, 1990

HAND DELIVERED

Mr. Roland A. Robison, Regional Director  
Upper Colorado Regional Office  
United States Bureau of Reclamation  
P. O. Box 11568  
Salt Lake City, Utah 84147

Re: Scoping the Glen Canyon Dam Environmental Impact Statement

Dear Mr. Robison:

Maricopa Water District (MWD) is a member of the Irrigation and Electrical Districts Association of Arizona (IEDA), the Arizona Municipal Power Users Association (AMPUA), and the Colorado River Energy Distributors Association (CREDA), and as such has actively followed the events leading to and the decisions to do an Environmental Impact Statement. MWD has also been involved in the scoping process through these associations. So, rather than provide duplicate comments, MWD hereby subscribes to and supports the positions taken by IEDA, AMPUA, and CREDA.

Thank you for the opportunity to participate and provide these comments.

Sincerely,

*Marilyn Brewer*  
Marilyn Brewer  
Manager, Financial Services

MB/sk

**MWD**

**METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA**

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April 2, 1990

Glen Canyon Dam-Environmental  
Impact Statement

U.S. Bureau of Reclamation  
P.O. Box 11568  
Salt Lake City, Utah 84147

Comments on Scoping of Glen Canyon Dam  
Environmental Impact Statement

The Metropolitan Water District of Southern California (Metropolitan) would like to take this opportunity to provide comments on the scoping of the Glen Canyon Dam Environmental Impact Statement (EIS). In its March 27, 1990 news release, the U.S. Bureau of Reclamation (Reclamation) indicated that the deadline for providing written public comments was extended to May 4, 1990. Metropolitan is responsible for meeting the supplemental water requirements of over 14 million people and the economy which supports them on the coastal plain of Southern California. In 1989, Colorado River water was used to meet 50 percent of the supplemental water requirements in Metropolitan's service area. As such, Metropolitan has great interest in this vital source of water supply.

Secretary of the Interior Manuel Lujan's July 27, 1989 news release announcing the EIS, and subsequent notices in the Federal Register, indicate that the EIS is to address impacts of Glen Canyon Dam operations "on the downstream ecological and environmental resources within the Grand Canyon National Park and the Glen Canyon National Recreation Area." Metropolitan concurs that the geographical scope of the EIS should be limited to Glen and Grand Canyons. A more extensive geographical scope, as some have suggested, would necessitate a longer process, unnecessarily introducing a vast number of tangential issues and concerns, and encumber the process with additional complex legal and institutional issues. Metropolitan believes that this would be inappropriate.

Some have also suggested that the EIS should examine all aspects of the operation of the Colorado River Storage Project, not just operations at Glen Canyon Dam. The operation of the other Colorado River Storage Project storage units and of the participating projects does not contribute to the within-the-month fluctuations in power operations at Glen Canyon Dam which are of interest in

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Glen Canyon Dam-Environmental  
Impact Statement

-2-

April 2, 1990

this case. Furthermore, such an expansion of the scope of the EIS would inevitably delay its completion. Given the desirability of expeditiously completing the EIS, it would be counterproductive to expand the scope to include operations at other Colorado River Storage Project facilities.

Furthermore, some have urged that the EIS and the Western Area Power Administration's (Western) EIS concerning the post-1989 power marketing criteria be merged. These two efforts are distinct and separate and should remain so. While there is certainly some relationship between the two documents and they should be carefully coordinated, they deal with substantially different matters. Combining those documents would again defeat the purpose of expeditiously completing the EIS. Therefore, Reclamation and Western should prepare separate documents.

As is indicated by Reclamation's March 1990, "Background Paper" on the EIS, Glen Canyon Dam's impacts on the downstream ecological and environmental resources of the Grand Canyon National Park and the Glen Canyon National Recreation Area arise primarily from within-the-month fluctuations in power plant operations. Consequently, the EIS should focus on an analysis of the impacts of within-the-month power operations.

In contrast, monthly and annual release schedules are distinct from power operations and are governed by interstate compact requirements. Although such analyses would not be pertinent in Metropolitan's judgement, should the EIS examine any aspect of annual reservoir operations, then storage behind Glen Canyon Dam and releases to meet compact obligations must be preserved.

With respect to the analysis of alternatives, human activities which are presently affecting the natural environment of Glen and Grand Canyons, and current power operations, that is existing minimum and maximum flow rates and existing ramping rates, should be considered to be the "no action" alternative. Metropolitan believes it to be imperative that a full range of both structural and non-structural alternatives to the "no action" alternative then be examined, subject to the condition that all alternatives must be in compliance with interstate compact requirements.

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Glen Canyon Dam-Environmental  
Impact Statement

-3-

April 2, 1990

The non-structural alternatives examined should include not only changes in power operations but also changes in the current institutional and management arrangements for other human activities that may be adversely affecting the downstream environmental and ecological resources of Glen and Grand Canyons. For example, Arizona Game and Fish Department regulations with respect to trout fishing, National Park Service permitting practices for recreational boating and camping on beaches, dispersion of rafters in the Grand Canyon, and vegetation management on beaches could play a role. The structural measures to be examined should include the possibility of a reregulating structure below Glen Canyon Dam, which could have the potential for minimizing impacts on environmental and recreational resources without sacrificing economical power generation and repayment revenues to the federal treasury.

In addition to environmental impacts, evaluation of the "no action" and structural and non-structural alternatives should consider economic and social impacts. Glen Canyon Dam provides multiple benefits to diverse beneficiaries. The EIS should, therefore, analyze trade-offs between the various alternatives and weigh and compare their benefits and costs. Since the Secretary of the Interior's ultimate decision on any new power operating criteria for Glen Canyon Dam must necessarily include an understanding of these trade-offs, this is a critical aspect which the EIS should address.

Metropolitan appreciates this opportunity to comment on the scope of the EIS.

Very truly yours,

  
Duane L. Georgeson  
Assistant General Manager

JPM:gn

cc: Mr. Gerald R. Zimmerman  
Executive Director  
Colorado River Board of California  
107 S. Broadway, Room 8103  
Los Angeles, California 90012-4663

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MAY 7 '90

WRITTEN COMMENT  
GLEN CANYON DAM ENVIRONMENTAL IMPACT STATEMENT

SCOPING **C10122**

In addition to (or instead of) verbal comments at this meeting, we invite you to submit written comments on your concerns about issues and policy options for the operation criteria for the Glen Canyon dam, including operational, structural, and non-structural considerations. The purpose of this phase of the environmental impact statement (EIS) process is to identify the range of issues that should be addressed in the EIS. Your written comments will assist the Bureau of Reclamation in identifying the scope of issues to be addressed in the development of the EIS.

Please also indicate your name, address, and affiliation (if any) so that we may keep you informed of Glen Canyon EIS developments.

Name (please print) ANITA ROCHELLE  
Affiliation (if any) MOTHERS FOR CLEAN WATERS  
Address 3232 W. CAMERON #120  
PHOENIX AZ 85017

Comments on Glen Canyon EIS issues: \_\_\_\_\_

IT IS CRITICAL THAT THOROUGH STUDIES BE DONE  
TO PROTECT THE ENTIRE ECO-SYSTEM, INCLUDING  
RIPARIAN VEGETATION, RIPARIAN BIRDS,  
NESTING HABITAT, AND INTER RELATIONSHIP  
OF SPECIES (EAGLE/TROUT) (PEREGRINE/SWIFT).  
HUMPBACK CHUB MUST BE PROTECTED AND  
RECOVERY PROGRAM STARTED. EXISTING  
STUDY FLOWS DO NOT ALLOW ENOUGH  
TIME FOR SUFFICIENT ANALYSIS FOR  
A MANAGEMENT DECISION TO BE MADE  
ON ALTERNATIVES

Comments on Possible Policy Options: \_\_\_\_\_

IMMEDIATELY REDESIGN STUDY FLOWS AS  
PER SCIENTIFIC COMMUNITY'S RECOMMENDATIONS.  
GRANT A2 G+ F FULL CO-OPERATOR STATUS.

(Over)

STATEMENT OF POSITION  
MOTHERS FOR CLEAN WATERS, INC.

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The rapid flow changes that are occurring daily on the Colorado River endanger the personal safety of the people on the river; the rafters, the fishermen, the recreationalists. They cause the fish to be stranded and die, and they erode the beaches and camping areas of the most magnificent canyon in the world. Does it have to be this way? Absolutely not. Yet despite massive public protest, and numerous lawsuits at the expense of private citizens, the dam even as we meet tonight is being operated solely for power. It is not being operated for the benefit of all resources, as is dictated by the Operating Criteria authorized by Congress. The production of power was to be incidental to all other purposes, including fish and wildlife protection. As a mother, I am tempted to propose an alternative tonight in much the same way I sometimes pose an alternative to my children. What I say to them is, "Cut it out!"

There is one important difference, though. My children are smart enough to listen to me. The Bureau of Reclamation is not listening to a primary concern of the American public - and that is the protection of the Grand Canyon. I would like to express my extreme frustration with this entire situation. I have the sense that some bureaucrats may have forgotten that it is the American taxpayer that pays their salaries. We need not have ever arrived here. We need not have already done so much damage.

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And my frustration is that I still do not see the Bureau honoring their obligations to the American public.

One of the most blatant demonstrations of the Bureau's skewed purposes is the artificially proscribed time frame of this Environmental Impact Study. My understanding is that the EIS, the Environmental Impact Study, is intended to be an instrument for public participation. The first public scoping meeting was held only three days ago. How then can we already have a schedule of study flows? Study flows need to represent the concerns brought forth during scoping, not be decided upon ahead of time. The Bureau's own technical team has repeatedly protested that this one year schedule of study flows is unquestionably inadequate. We need more time to study the critical life cycles at stake. Yet apparently the opinion of their own experts is falling on deaf ears. To dictate the length of the study in advance, instead of allowing the senior scientist, Dr. Patton from A.S.U., to design the best studies for the concerns brought forth in scoping, is wholly improper. We will not accept another botched study as was done on Mount Graham. We insist upon an immediate extension of the time frame to at least December of 1992.

A recent poll of Arizona residents found that fully 98% favor protection of the environment. The Bureau tells us that to protect the Grand Canyon the cost of electricity will rise. My question is, how much and to whom? Arizona utilities use Glen Canyon power to meet only 5% of their annual need. Much of the

power generated at Glen Canyon is sold as subsidized power that is used to grow surplus crops, such as cotton. The American taxpayer is subsidizing surplus crops to be grown in the arid Southwest where exorbitant amounts of water and energy are needed to irrigate. At the same time, a portion of our hard-earned tax dollar is paying farmers in water rich states not to grow these same crops. Irrigation farmers pay a penny per kw. You and I pay 9 or 10 cents/kw. As a case in point, the average income for cotton farmers in Arizona is \$205,000. I don't think we would be causing undue hardship to increase the cost of subsidized electricity by a mere two percent for the sake of the Grand Canyon.

But what are the costs of letting the degradation in the Grand Canyon continue? How do you assess loss of revenue? Our tourist industry in Arizona produced \$5.5 billion dollars in 1989. How do you evaluate all the benefits to Arizona's support businesses such as restaurants, service stations, airlines, etc? What are the consequences of having our tourists go back to their home states (and even to other countries) and grumble about having had a lousy trip? From this perspective, there is no question that the Grand Canyon is worth far more than the minor inconvenience of adjusting our power arrangements.

Thus, preserving the Grand Canyon Eco-System is a priority not only for environmental reasons, but for economic ones as well. Fishing hours at Lee's Ferry have declined 32% from 1983-1988. Rapidly fluctuating flows can negatively impact rafting

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values by as much as 30%. We make more money on our tourism industry in Arizona than on agriculture and mining combined - we must take good care of this resource.

It is essential that this EIS develop alternatives for the entire Grand Canyon Eco-System. These alternatives need to be systems based. We do not need another dam! It would be a shame to only address the symptoms of the problem, just the fishery, or just the beaches, and still run the risk of losing the whole ball game. However, if we attend to the entire eco-system, with an interest to balancing and enhancing the delicate inter-relationships that exist there, we will concurrently improve the rafting, the fishing, the recreation, and protect the endangered species. Water must be thought of in terms of the chains of life it supports. What we do to one part of the chain affects the whole. Just as nations prosper as a result of economic diversity, so does an eco-system benefit from biological diversity.

In addition, we insist that the EIS include in its management considerations equal representation of all resources in the on-going decision making procedures of dam operations. It is inconsistent with the intent of Congress for operations to be decided solely by Western Area Power Administration and/or the Bureau. Also, the Department of the Interior has a responsibility to the American public to honor the requirements of the Fish and Wildlife Cooperating Act immediately. The current course of action, ignoring this Act, is unacceptable. We

also insist that the co-operating agencies, namely The National Park Service and the U.S. Fish and Wildlife Service, be fully co-operating partners in reviewing and assessing the comments made at these alternative scoping meetings. We insist that all the co-operating agencies be full co-operating partners in the finalization of the alternatives for the determination of the preferred alternatives.

Finally, we insist that Arizona Game & Fish, the most expert resource available, immediately be given full cooperating status. To deny them that is unconscionable, and at cross purposes to the intent of this EIS. Our government was founded by the people and for the people; we will not accept having a select few make decisions behind closed doors. It is time for the stewardship of our resources to be administered by the people and for the people as well.

Anita Rochelle, President  
3232 W. Camelback Rd #120  
Phoenix, AZ 85017

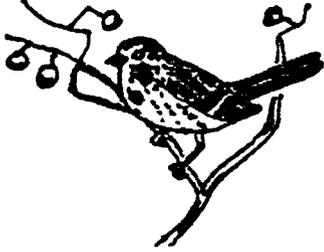


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AUDUBON SOCIETY



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Secy. Manuel Lujan,  
Dept. of Interior  
Washington, D. C.

Dear Secretary Lujan,

On behalf of the nearly one thousand members  
of this chapter of National Audubon, we wish  
to express concern on the  ~~Glen Canyon Environmental~~  
Impact <sup>Statement</sup> ~~For~~ <sup>In</sup> particular, we support an

integrated program that is more consistent  
of all downstream habitat and animal life.  
We ask you to please consider all the ramifications  
of any action taken.

Thank you.

Sincerely,  
Harry Zimmerman, Pres

CONT. # 9-7

FLBA #

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Montana • Utah • Wyoming

0780



# National Audubon Society

ROCKY MOUNTAIN REGIONAL OFFICE

4150 DARLEY, SUITE 5, BOULDER, COLORADO 80303 (303) 499-0219

March 28, 1990

Mr. David L. Wegner  
GCES Program Manager  
Bureau of Reclamation  
P.O. Box 11568  
Salt Lake City, UT 84147

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Dear David,

Thank you for sending our office the Draft Glen Canyon Environmental Studies: Research Flow Package. This particular issue is an extremely high priority subject to the Audubon members nationally, not just in the Colorado River Basin.

Data being assembled by a variety of interests together with your studies clearly shows that the present operation of Glen Canyon, to maximize the production of peaking electrical power, is damaging the resources of the Grand Canyon; the beaches, endangered fishes, the trout fishery, the riparian ecosystem along the bottom of the canyon and the quality of recreational boating.

We urge an integrated alternative in the EIS that protects all the values of the Grand Canyon; an alternative that will reduce the impacts and will fully mitigate the environmental damage. No one is asking to "pull the plug" on the production of public power. But the way the water flows through the dam, and produces power, must be managed to protect the environmental and recreation values downstream. These priorities, rather than the "Primacy of Power" doctrine that has dictated dam management up till now, must govern the EIS process. Additionally, any mandated changes on flows from Glen Canyon Dam will require flow modifications from the upstream power producing dams in the Colorado River Storage Project, including, Flaming Gorge on the Green River. Such potential modifications are not going to be studied and they must.

We urge that an integrated alternative be developed for the EIS which avoids and reduces impacts to the National Park, to beaches along the river, to wildlife habitat, to endangered species and to the trout fishery. Maximizing electrical power production at the cost of these resources was not what the dam was built for and is not an acceptable alternative.

The artificial deadline for completing the final EIS by the end of 1991 is unrealistic; particularly since the Bureau has already taken seven months to get started. We ask for the deadline to be extended immediately to December of 1992, and for the proper flows to be provided for the needed research.

AMERICANS COMMITTED TO CONSERVATION



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- 159 -

We urge that a Colorado River Storage Project wide integrated EIS be produced at this time. The Project is operated as a system and it makes no sense to study one part at the expense of the others. The Green River flow problem may be increased by default and absent adequate study.

The Grand Canyon is an international resource which deserves thoughtful stewardship. Our Society looks forward to working towards that goal with your agency.

Respectfully,



Robert K. Turner  
Regional Vice President

RKT:AA

CONT. # 90-7559  
FLDR # 26970

70<sup>th</sup>  
NPCA  
ANNIVERSARY

# National Parks and Conservation Association

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Testimony of

David J. Simon

At a scoping hearing on the environmental impact statement  
being prepared on the operation of the Glen Canyon Dam

March 27, 1990  
Washington, D.C.

Good afternoon, my name is David J. Simon. I serve as the natural resources coordinator for the National Parks and Conservation Association (NPCA), a 100,000-member citizens organization founded in 1919 that works to promote, protect and improve our national park system.

Thank you for the opportunity to provide input to the scoping process for the Glen Canyon Dam environmental impact statement (EIS) now under preparation. NPCA does plan to submit additional written scoping comments by the April 15, 1990 deadline, so I shall restrict this testimony comments to a few key issues that deserve particular emphasis.

First and foremost, NPCA believes that the EIS should accurately reflect and describe the binding legal requirements that must be satisfied in managing park resources, and the legal responsibilities with which the Secretary of the Interior must comply in the preparation of this EIS and any decisions made in response to it.

Some 70 years after its passage, the National Park Service Organic Act remains the definitive statement of the purposes of the parks and the mission of the National Park Service, which is under the direct supervision of the Secretary. The Organic Act states that the National Park Service is to:

promote and regulate the use of the federal areas known as national parks, monuments, and reservations hereinafter specified, . . . by such means and measures as conform to the[ir] fundamental purpose . . . to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such a manner and by such means as will leave them unimpaired for the enjoyment of future generations. (16 U.S.C. 1 et. seq.)



1015 Thirty-First Street, N.W., Washington, D.C. 20007-4406  
Telephone (202) 944-8530 • Fax (202) 944-8535

-161-

Moreover, when controversy over resource damage to Redwood National Park arising outside the park's boundaries resulted in a series of lawsuits in the late 1970s, Congress reaffirmed and clearly reinforced the "unimpaired" standard and gave specific direction to the Secretary of the Interior to act affirmatively to protect units of the national park system. In amending the Organic Act, Congress directed that:

The authorization of activities shall be construed and the protection, management, and administration of these areas shall be conducted in light of the high public value and integrity of the National Park System and shall not be exercised in derogation of the values and purposes for which these various areas have been established, except as may have been or shall be directly and specifically provided by Congress. (Redwood National Park Expansion Act, Section 101(b), P.L. 95-250, 16 U.S.C. 1a-1; emphasis added).

In fact, the legislative record that accompanied this law states that "The Secretary has an absolute duty, which is not to be compromised, to fulfill the mandate of the 1916 Act to take whatever actions and seek whatever relief as will safeguard the unit of the National Park System." [*Sierra Club v. Andrus*, 487 F. Supp. 443 (D. D.C. 1986), quoting S. Rep. No. 95-528, 95 Cong. 1st Sess. 9 (Oct. 21, 1977)].

In the specific matter of the operation of the Glen Canyon Dam, NPCA would point out that the Colorado River Basin Project Act of 1968 did not put all uses of the river on equal footing. In fact, that Act relegated the generation of electrical power last and incidental among priorities:

This program is declared to be for the purposes, among others, of regulating the flow of the Colorado River; controlling floods, improving navigation; providing for the storage and delivery of the waters of the Colorado River for the reclamation of lands, including supplemental water supplies; and for municipal, industrial, and other beneficial purposes; improving water quality; providing for basic public outdoor recreation facilities; improving conditions for fish and wildlife; and the generation of electrical power as an incident of the foregoing purposes. (emphasis added.)

The legal standards for park protection, as well as the laws pertaining to the management of the Colorado River, give priority to national park protection. Thus; NPCA believes that without dilution, the preparation of this EIS, and the choice of a preferred alternative, must be framed in terms of and evaluated against the "nonderogation" standard for protection of national park resources and the affirmative legal requirements the Secretary of the Interior-- who supervises the Bureau of Reclamation, the National Park Service, and the Fish and Wildlife Service--must comply with in exercising his protective responsibilities. The Secretary has a legal duty to operate Glen Canyon Dam so as to protect Grand Canyon National Park. This responsibility is defined by the National Park Service Organic Act, as amended, and by similar law, and extends further than mere administrative compliance with the National Environmental Policy Act (NEPA) in the preparation of the EIS.

With this framework explicitly in place, NPCA believes that the environmental impact statement should consider, among others, the following issues and resource concerns (NPCA notes this does not represent an inclusive listing of subjects):

1. In defining the affected area, the EIS should evaluate both upstream and downstream areas from the dam. The project area should include the aquatic, terrestrial, and riparian zones of the Colorado River, not only between Glen Canyon Dam and Lake Mead (inclusive of Grand Canyon National Park), but also extending upstream into Glen Canyon National Recreation Area (GCNRA) and Canyonlands National Park, and into Colorado River tributaries. GCNRA is obviously impacted by changing lake levels resulting from the operation of the dam, and Canyonlands National Park, especially the Cataract Canyon area, may also be affected.

2. The EIS should evaluate the impacts (and impacts relating to all the alternatives for operation) of the dam on the environmental and recreational resources above and below the dam. Since the closure of the dam in 1963, the Colorado River has been drastically altered, with daily fluctuations in releases made primarily in response to hydropower production goals. This has resulted in dramatic changes in the river ecosystem, including displacement of warmwater fisheries, alteration of the sediment load of the river, habitat degradation, etc. In addition, recreational uses have been impacted by the large fluctuations in flows.

NPCA believes that the EIS should include assessments of the following types of resources:

**Aquatic Resources:** algae and zooplankton production; aquatic invertebrates; and fishery resources.

**Terrestrial Resources:** sediment, and sediment dependent resources, such as beaches, backwaters, riparian vegetation, channel degradation (The erosion of beaches and the degradation of soil may be the most dramatic change and detrimental impacts along the Colorado River.); terrestrial invertebrates; terrestrial vertebrates; riparian songbirds; waterfowl and other migratory birds; mammals

**Special Status Species:** All federally-listed species and candidates for listing, as well as species of state significance, including the humpback chub, Colorado squawfish, razorback sucker, bonytail chub, peregrine falcon, bald eagle, and Southwestern willow flycatcher.

**Public Uses and Concerns:** recreation

It is crucial that the EIS, to the maximum extent possible, evaluate not only the short-term effects of the dam on the above resources, but also the long-term, cumulative impacts.

3. NPCA believes the EIS should investigate aspects of resource mitigation (not transfer payments or "compensation") that might be needed under revised operating procedures for the dam. Changing pool levels at GCNRA, for example, may call for mitigation to natural resource and recreation values. In this consideration, the Bureau should evaluate restoring funding to the National

Park Service under Section 8 of the Colorado River Storage Act (P.L. 85-485) to assist the National Park Service in the performance of its duties.

4. The EIS should include socio-economic studies that gauge the public's "willingness to pay" (so-called "bequest values") for changes in the operation of Glen Canyon Dam that will protect Grand Canyon National Park.

5. Finally, in consideration of the length of time required for the preparation of this EIS, the extensive work that has been conducted under the auspices of the Glen Canyon Dam environmental studies, and the continuing damage to the riparian resources of Grand Canyon National Park that is now occurring, NPCA requests that the Bureau implement an interim flow regimen that is more consistent with park protection. This regimen should be developed in consultation with the National Park Service and the Fish and Wildlife Service, but should explore using 5,000 cfs as a minimum flow.

Thank you for the opportunity to present NPCA's views today.

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FLDR # 20990

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JAMES L. MATSON  
Chairman

May 2, 1990

Mr. Thomas Slaytor  
Glen Canyon Dam Environmental Impact Statement  
U. S. Bureau of Reclamation  
P. O. Box 115678  
Salt Lake City, UT 84147

Dear Mr. Slaytor:

We appreciate the opportunity to participate in the scoping process for the Glen Canyon Dam Environmental Impact Statement and we applaud the Secretary's decision to proceed with full NEPA compliance. We do however, feel strongly that evaluation of the Impacts of Glen Canyon Dam operations on the resources of Grand Canyon National Park should have been completed and mitigating operational criteria established prior to now. This issue has been brought before the Bureau of Reclamation repeatedly without satisfactory resolution. Hopefully, the current process will result in a balanced approach to the management and operation of Glen Canyon Dam in which the wide variety of resources which are influenced by Glen Canyon Dam operations receive even treatment. We recognize that the scoping process is intended to identify issues and concerns to be addressed in the EIS. We have summarized our concerns below for your consideration.

In order to achieve a meaningful reduction in the impacts on the resources of Grand Canyon National Park, the priority for maximizing power revenues at Glen Canyon Dam must be rescinded. Environmental resources of Grand Canyon National Park must have primacy over, or at a minimum, equality with, maximization of power revenues. Without this fundamental restructuring of priorities no real progress in conservation of environmental resource along the river corridor can be made. Maximizing power revenues results in the almost constant discharge fluctuation which the Colorado River experiences below Glen Canyon Dam. It produces the greatest magnitude of fluctuations both on a daily basis and through a given year. This operational priority is also the most easily modified aspect of dam operations. It is the least constrained by the "Law of the River" and is continually modified in response to changes in power markets.

A corollary issue is the need for thorough and clear analysis of the projected impacts of alternative operating scenarios (including restructuring operational priorities) on power costs including the impact on specific customers and not just the aggregate power consumer. This analysis will be informative regarding which groups and individuals will be influenced by changes in power generation schedules. The scope of the EIS should also include energy conservation measures which could offset potential impacts on power consumers and producers.

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Arizona/New Mexico Parks and Conservation Council **G10538**  
National Parks and Conservation Association  
P.O. Box 52111, Phoenix, AZ 85072  
(602) 840-5555

Mr. Thomas Slaytor  
Page two  
May 2, 1990

The arbitrary two year time frame for the EIS is inadequate and will prove to be counter-productive. Rather than setting a brisk pace for analysis and processing of the EIS document, the two year limit will result in incomplete and inadequate research and review which will be rejected, requiring remedial work which will delay decisions and frustrate all of the interested publics.

The only constant in a river system is change. The Colorado River in Grand Canyon is continually adjusting to the dynamics of nature and the modifications imposed by Glen Canyon Dam. No finite research program can address future changes or the success of management programs. A monitoring program to evaluate the success of alternative operations and to track changes in the system is vital and will be necessary. The monitoring program should be financed by power revenues and should specify fixed time periods for reevaluation of the operational criteria.

Structural solutions downstream of Glen Canyon Dam run counter to the whole premise of this undertaking; that the natural resources of Grand Canyon and the Colorado River should be protected. Imposing beach armoring, jetties, or re-regulation dams would cause further impairment of environmental resources and values along the river corridor. Schemes that rely on downstream structural solutions will not be acceptable and should not be carried out as alternatives. However, structural modifications to the dam itself may be beneficial and should be thoroughly evaluated. This includes not only modifications to the outlet structures but also methods for transporting sediment past the dam and promoting fish migration.

When attempting to manage a system as complex as the Colorado River in Grand Canyon and an impact as all encompassing as the dam, it must be acknowledged that there are limits to the ability to successfully manage all resources at the same level. We feel that the resources should be given the following priority.

1. Endangered species. Listed species must be accorded the highest research and management priority. This includes consideration of not only the Humpback Chub but other listed species including Bald Eagle, Peregrine Falcon, and the Colorado River Squawfish. The U. S. Fish and Wildlife Service Jeopardy Opinion for Humpback Chub against the Bureau of Reclamation must be addressed as part of this EIS.
2. Alluvial Deposits. The alluvial deposits of the Colorado River are critical resources. They provide the substrate for riparian habitats and essential campsites for river runners. These deposits are directly affected by discharge patterns of Glen Canyon Dam. Now that the beach and shore sediments are virtually a finite resource, no longer primarily replenished by the...

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Mr. Thomas Slaytor  
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May 2, 1990

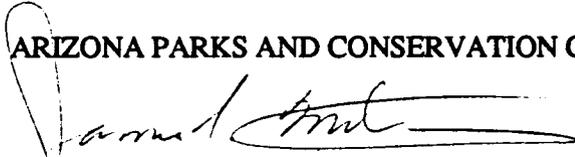
3. Riparian habitats. Riparian habitats are the most productive terrestrial habitats in the Southwest and are among the most threatened. The riparian habitats of the Colorado River in Grand Canyon are important resources in spite of their being modified by the unnatural flow patterns imposed by Glen Canyon Dam.
4. Recreation. The recreational opportunities of the river corridor are of worldwide significance. River running and hiking opportunities are directly influenced and impaired by the short-term fluctuations in discharge and the long-term effects of dam operation. This impairment violates the provisions of the laws establishing Grand Canyon National Park and the National Park Service.

It is important to note that while river running experienced a dramatic increase in popularity in the post-dam era, this popularity was not a result of recreational opportunities being "expanded" by Glen Canyon Dam as is alleged in the Glen Canyon Dam Background Paper. River running experienced a surge in popularity throughout the country during the 1960's and '70's including the unregulated reaches of the Colorado River system in Cataract, Westwater and Desolation canyons. The dam has not made the river more accessible to river runners; on the contrary, it has resulted in greater restriction and limitations. This reality should be clearly articulated in the EIS.

We hope that our comments are given full consideration in the development of research programs and alternatives. We look forward to continuing participation in the EIS process.

Sincerely,

ARIZONA PARKS AND CONSERVATION COUNCIL



James L. Matson  
Chairman

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CONT. # 90-7564  
FLDR # 20990

STATEMENT BY MORGAN DUBROW, CHIEF ENGINEER  
NATIONAL RURAL ELECTRIC COOPERATIVE ASSOCIATION

MARCH 27, 1990

Page 3 of 60

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IMPORTANCE OF FEDERAL HYDRO POWER TO RURAL COOPERATIVES

Before 1935, most rural areas were without electricity. The Rural Electrification Administration (REA) program and power from hydroelectric projects such as Glen Canyon made it possible to furnish electricity to some 99 percent of rural America.

Energy generated at federal hydroelectric facilities is purchased by more than 650 consumer-owned utility systems that serve homes, farms, business and industry in 34 states. The federal investment in hydro power is being systematically repaid to the U.S. Treasury, with interest, by federal power customers, and power revenues also contribute a significant amount of revenue to assist the repayment of irrigation costs, salinity control and fish and wildlife mitigation programs.

Some 275,000 manufacturing, wholesale, retail and service companies nationwide, which employ more than 3,000,000 people and contribute nearly \$240 billion to the national economy, are served by consumer-owned utilities that rely on federal power purchases for all or part of their bulk power supply. Rates for sale of power from federal hydroelectric development are cost-based.

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It is imperative that rural electric systems maintain access to this relatively low-cost power to help offset the higher rates from today's steam plants. Escalating electric rates to consumers is of growing concern to our member systems. According to reports by the REA, three-fourths of rural electric systems nationwide have higher rates than those of neighboring utilities. Consequently, any additional increases in their cost of purchasing power impacts on their consumer members and the communities they serve.

The cooperatives average less than five customers to the mile and even less in those sparsely populated areas which sometime serve one or two customers to the mile. In Wyoming the average rate to our consumers is approximately 7.0 cents. The four cooperatives in Utah charge an average of 6.2 cents per kilowatthour; in New Mexico, the average rate to our consumers is 9.7 cents per kilowatthour; in Colorado the average rate is 7.2 cents per kilowatthour.

Federal hydro power has been basic to the rural electrification program, particularly in the West, because it meant an assured power supply where there was little or no other power supply available at reasonable cost. The federal power program continues to keep costs down for rural consumers who live in areas where often there are only one or two consumers to the mile. Because the future of so many rural electric cooperatives is tied so closely

to federal water resource projects, multipurpose development such as the Colorado River Storage Project, our cooperative leaders continue to be in the forefront in support of such undertakings.

It may not be widely known, but on a number of occasions our members have purchased federal hydro power at rates higher than market prices, mainly to protect preference. For example, Plains Electric of New Mexico purchased Colorado River Storage Project electricity for 50 percent more than the cost of coal-fired steam-generated electricity at that time.

~~Despite~~ <sup>T</sup>he relatively low cost power from Glen Canyon Dam, with a capacity of 1356 MW, power is supplied to rural electric cooperatives and other preference customers in the Upper Colorado River Basin. Glen Canyon Dam, as it is co-mingled with large amounts of power from fossil-fired plants, serve residential farms and ranches and the rates are still high.

The argument presented by environmentalists, that federal power is sold at such low cost that it is wasted, is just not correct. In the real world, the cooperatives taking Upper Colorado River Storage power have just been advised that federal power rates will be increased by about 46 percent, making power costs to the 55 cooperatives in the Upper Basin substantially higher. Attached is a

list of the rural electric cooperatives in Colorado, New Mexico, Utah and Wyoming, and a characterization of the uses to which federal hydro power serves the region. Any proposed action at Glen Canyon that would result in further increases in electricity costs for preference customers should consider the economic consequences on the lives and livelihoods of the people in the region.

To the extent that hydro power production is curtailed or lost, it will be replaced primarily by fossil-fuel generation, the bulk of which will be coal-fired, thereby increasing air pollution.

In closing, I want to emphasize that the rates paid for federal power are adequate to fully cover the cost of the capital investment and all operation, maintenance and replacement costs of these hydroelectric dams; in fact, power now pays more than 85 percent of the cost of such multipurpose projects.

Attachment

MWH SALES BY CLASS, PERCENT OF TOTAL

RURAL ELECTRIC SYSTEM		RESI- DENTIAL	COMMERCIAL: SMALL LARGE		IRRIG- ATION	OTHER	FOR RESALE
1 )	CO007 GRAND VALLEY RURAL POWER LINES	68%	31%	0%	1%	0%	0%
2 )	CO014 SAN LUIS VALLEY RURAL ELECTRIC	30%	13%	7%	51%	0%	0%
3 )	CO015 MORGAN COUNTY RURAL ELEC. ASSN	25%	32%	0%	41%	0%	1%
4 )	CO016 INTERMOUNTAIN RURAL ELECTRIC A	67%	27%	4%	1%	0%	0%
5 )	CO017 SOUTHEAST COLORADO POWER ASSOC	24%	10%	4%	15%	0%	47%
6 )	CO018 GUNNISON COUNTY ELECTRIC ASSOC	47%	22%	8%	0%	0%	22%
7 )	CO020 DELTA MONTROSE ELECTRIC ASSN.	49%	27%	14%	0%	1%	9%
8 )	CO022 UNION RURAL ELECTRIC ASSN INC.	53%	33%	8%	3%	0%	2%
9 )	CO025 SAN ISABEL ELECTRIC ASSOCIATIO	28%	14%	41%	0%	0%	16%
10 )	CO026 SAN MIGUEL POWER ASSN INC.	41%	36%	23%	0%	0%	0%
11 )	CO029 HIGHLINE ELECTRIC ASSN	19%	14%	0%	65%	1%	2%
12 )	CO031 POUDE VALLEY REA INC.	36%	15%	46%	2%	0%	0%
13 )	CO032 LA PLATA ELECTRIC ASSN INC.	49%	43%	7%	0%	1%	0%
14 )	CO033 EMPIRE ELECTRIC ASSN INC.	23%	22%	54%	0%	0%	0%
15 )	CO034 HOLY CROSS ELECTRIC ASSOCIATIO	49%	36%	2%	0%	0%	12%
16 )	CO035 SANGRE DECRISTO ELECTRIC ASSOC	66%	26%	8%	0%	0%	0%
17 )	CO036 YAMPA VALLEY ELECTRIC ASSOCIAT	43%	31%	25%	1%	0%	1%
18 )	CO037 MOUNTAIN VIEW ELECTRIC ASSN IN	63%	18%	3%	2%	15%	0%
19 )	CO038 Y-W ELECTRIC ASSOCIATION INC.	16%	25%	0%	57%	0%	2%
20 )	CO039 K. C. ELECTRIC ASSOCIATION	25%	24%	0%	50%	0%	0%
21 )	CO040 WHITE RIVER ELECTRIC ASSN INC.	16%	19%	64%	0%	0%	0%
22 )	CO042 MOUNTAIN PARKS ELECTRIC, INC.	47%	21%	30%	0%	0%	1%
1 )	NM004 CENTRAL VALLEY ELECTRIC COOPER	13%	53%	12%	22%	0%	0%
2 )	NM008 ROOSEVELT COUNTY ELECTRIC COOP	26%	43%	0%	30%	0%	0%
3 )	NM009 FARMERS' ELECTRIC COOPERATIVE,	42%	33%	0%	23%	2%	0%
4 )	NM011 KIT CARSON ELECTRIC COOPERATIV	52%	32%	16%	0%	0%	0%
5 )	NM012 OTERO COUNTY ELECTRIC COOPERAT	55%	33%	11%	1%	0%	0%
6 )	NM014 MORA-SAN MIGUEL ELECTRIC COOPE	67%	23%	10%	0%	0%	0%
7 )	NM015 NORTHERN RIO ARRIBA ELECTRIC C	48%	33%	18%	0%	0%	0%
8 )	NM017 SIERRA ELECTRIC COOPERATIVE, I	53%	42%	0%	1%	0%	3%
9 )	NM019 SPRINGER ELECTRIC COOPERATIVE,	20%	17%	51%	0%	1%	11%
10 )	NM020 SOCORRO ELECTRIC COOPERATIVE,	35%	36%	28%	0%	1%	0%
11 )	NM021 CENTRAL NEW MEXICO ELECTRIC CO	62%	32%	0%	5%	1%	0%
12 )	NM022 CONTINENTAL DIVIDE ELECTRIC CO	26%	33%	40%	0%	0%	0%
13 )	NM023 LEA COUNTY ELECTRIC COOPERATIV	9%	67%	12%	10%	1%	1%
14 )	NM025 COLUMBUS ELECTRIC COOPERATIVE,	9%	8%	76%	7%	0%	0%
15 )	NM026 SOUTHWESTERN ELECTRIC COOPERAT	2%	1%	97%	0%	0%	0%
16 )	NM028 JAMEZ MOUNTAINS ELECTRIC COOPE	53%	44%	1%	0%	1%	0%
1 )	UT006 GARKANE POWER ASSOCIATION, INC	35%	16%	43%	4%	3%	0%
2 )	UT008 MOON LAKE ELECTRIC ASSN., INC.	8%	55%	36%	1%	0%	0%
3 )	UT011 FLOWELL ELECTRIC ASSN., INC.	18%	4%	0%	78%	0%	0%

MWH SALES BY CLASS, PERCENT OF TOTAL

RURAL ELECTRIC SYSTEM	RESI- DENTIAL	COMMERCIAL:		IRRIG- ATION	OTHER	FOR RESALE
		SMALL	LARGE			
4 ) UT020 DIXIE-ESCALANTE RURAL ELECTRIC	40%	6%	34%	20%	0%	0%
1 ) WY003 RIVERTON VALLEY ELECTRIC ASSN.	24%	44%	29%	2%	0%	0%
2 ) WY005 BIG HORN RURAL ELECTRIC COOPER	29%	38%	29%	4%	1%	0%
3 ) WY006 WYRULEC COMPANY	32%	10%	24%	29%	5%	0%
4 ) WY009 BRIDGER VALLEY ELECTRIC ASSN.,	45%	29%	25%	1%	1%	0%
5 ) WY010 WHEATLAND RURAL ELECTRIC ASSN.	21%	4%	60%	10%	4%	0%
6 ) WY011 LOWER VALLEY POWER AND LIGHT I	46%	38%	14%	2%	0%	0%
7 ) WY012 GARLAND LIGHT AND POWER CO.	76%	11%	0%	12%	0%	0%
8 ) WY014 RURAL ELECTRIC COMPANY	31%	31%	0%	28%	10%	0%
9 ) WY016 HOT SPRINGS COUNTY REA, INC.	6%	28%	65%	1%	0%	0%
10 ) WY021 CARBON POWER AND LIGHT INC.	40%	37%	16%	4%	3%	1%
11 ) WY022 NIOBRARA ELECTRIC ASSN., INC.	23%	30%	33%	12%	2%	0%
12 ) WY024 SHERIDAN-JOHNSON RURAL ELECTRI	23%	27%	48%	2%	0%	0%
13 ) WY025 TRI-COUNTY ELECTRIC ASSOCIATIO	11%	45%	43%	0%	0%	0%

NRECA ECONOMICS DIVISION  
MARCH 1990

SOURCE: REA BULLETIN 1-1, 1988

# NWRA

FLDR #

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## STATEMENT

of

Thomas F. Donnelly  
Executive Vice President

National Water Resources Association

before the

Commissioner  
United States Bureau of Reclamation

on

OPERATIONS OF THE GLEN CANYON DAM  
ON THE COLORADO RIVER

March 27, 1990

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March 27, 1990

Mr. Commissioner:

I am Thomas F. Donnelly, Executive Vice President of the National Water Resources Association. I appear before this scoping session today to express the Association's concerns and interests in the operation and management of the Glen Canyon Dam on the Colorado River.

The National Water Resources Association (NWRA) is a nonprofit federation of state associations and individuals dedicated to the conservation, enhancement, and efficient management of our Nation's most precious natural resource, WATER. The NWRA is the oldest and most active national association concerned with water resources policy and development. Its strength is a reflection of the tremendous "grassroots" participation it has generated on virtually every national issue affecting western water conservation, management, and development.

The present operation of the River is the product of, and responsive to, a complex system of interwoven power, water, ecological and recreational needs that have been developed through study, negotiation and compromise over many decades.

The power and water from the Colorado River is used by residents of small farms and rural communities in the upper basin region and by large cities, small communities and immensely productive fruit and vegetable growing areas in the lower basin. The social and economic welfare of the entire Southwestern United States is dependent upon the operation and management of control facilities on the Colorado River.

For decades, federal water policy has been designed to harness the nation's rivers to promote multiple purpose use. The federal multipurpose water projects are authorized to meet specific purposes with specific benefits and repayment responsibilities.

Federal hydropower is an important national resource. Project beneficiaries recognize the value and finite nature of this resource and consequently support its efficient use including conservation, load management, and system efficiency programs. The development of the nation's rivers has created environmental costs, benefits and opportunities that have led to additional, unanticipated uses of these projects.

The advocates of these unanticipated project uses are seeking changes in the operation, use and management of federal water projects and the use of federal power revenues in order to secure or enhance their interests. The water stored at these federal facilities is allocated among existing authorized purposes and the water is released in a manner consistent with those authorized purposes and established water rights.

The additional demands placed on the resource by advocates of new or expanded project purposes may reduce the benefits to users of authorized project purposes and may increase their costs.

The Secretary of Interior has recently ordered an EIS on the impacts of current operations of the dam and has under consideration a proposal to modify the criteria pending completion of the EIS. We believe that these two actions may set far reaching precedents for similar actions at all federal dams and reservoirs.

The action already taken, ordering an EIS, is by itself an ill-advised precedent. The National Environmental Policy Act of 1969 (NEPA) mandates that a federal agency prepares an EIS for all major federal "proposed actions." The Secretary's order directing the preparation of an EIS failed to identify a "proposed action" which would trigger an EIS requirement. Without a "proposed action," NEPA is not applicable. The courts have consistently upheld this position. ✓

The second action under consideration, establishing "interim flow criteria," also would set a very alarming precedent. Regulations implemented by CEQ require that "while work on a required program environmental impact statement [is] in progress...agencies should not undertake in the interim any major federal action covered by the program which may significantly affect the quality of the human environment." The CEQ regulations further provide that "interim action prejudices the ultimate decision on the program when it tends to determine subsequent development or limit alternatives." These regulations bear directly upon the Secretary's consideration of interim criteria, at Glen Canyon as well as any reservoir under the jurisdiction of the federal government. ✓

The adoption of "interim criteria" requires a change in long range operational criteria adopted by the Secretary in 1970. Such a change is a "major federal action significantly affecting the quality of the human environment." Therefore the adoption of interim criteria could require preparation of an EIS in direct conflict with CEQ Regulations

It is important to note adoption of "interim criteria" effectively destroys the Bureau's ability to study the effects of the present operating criteria and thereby negates its ability to include in the EIS a "no change" alternative which is critical to a complete EIS. ✓

In addition to NEPA and the CEQ regulations, the operation of the reservoirs on the Colorado River are also subject to specific legislation (the Colorado River Basin Act of 1968, PL 90-537) which imposes an affirmative obligation upon the Secretary of Interior to consult with representatives of the seven basin states before any modification of the operating criteria. The existing operating criteria were adopted after extensive studies and after input by many groups and interests.

Violation of any of the above mentioned legislation and regulations will set alarming precedents for operation of all federal dams and reservoirs.

We would urge that the Commissioner adopt the following guidelines in reconciling the conflicting demands of the competing interests in the operation of Glen Canyon and other federal facilities under the jurisdiction of the U.S. Bureau of Reclamation.

1. New Project Purposes and Revision of Existing Purposes:

a. Beneficiaries of authorized project purposes should not be asked to underwrite the addition of new or expanded project purposes that reallocate project benefits.

b. If project benefits are transferred from one project to another, cost responsibility must be transferred and lost benefits compensated and/or existing repayment obligations adjusted.

c. Changes in project operation or designation of new project purposes must not be pursued on a generic basis, since only case-by-case authorization can ensure that changes in project operation are warranted, appropriate, cost-effective, do not violate contracts or established rights, and are consistent with national and state objectives.

2. Western Irrigation Assistance:

a. Project beneficiaries will honor historical financial commitments for authorized but unconstructed irrigation projects under traditional methods of determining project feasibility, financing, and repayment; and may consider nontraditional assistance on a case-by-case basis for such projects or congressionally authorized substitutes that are economically and environmentally acceptable and that include local cost-sharing by existing and future project beneficiaries.

3. The Environment:

a. A distinction between environmental mitigation and enhancement is critical to determining the financial responsibility of existing project beneficiaries for efforts to improve environmental conditions at federal multipurpose water projects.

b. All project beneficiaries and the public at large must share financial responsibility for environmental mitigation efforts which encompass those reasonable and cost-effective efforts designed to offset the environmental impacts resulting from construction of these projects.

c. The direct beneficiaries of enhanced environmental opportunities and the public at large must bear the financial responsibility for environmental enhancement measures which comprise those efforts designed to improve the environment to a state that did not exist prior to construction of the facility.

4. Conservation:

a. Existing project beneficiaries should continue to pursue appropriate, cost-effective end-use and system efficiency measures.

b. Prior to any reallocation of stored project water for consumptive use, existing project beneficiaries believe that the intended beneficiary should be required to make positive showing that the water is needed after the implementation of appropriate, cost-effective end-use water management practices.

5. Operating Criteria:

a. The Secretary of Interior and the Secretary of the Army shall fully comply with all applicable legislation, federal regulations and contractual commitments before changing the operating criteria for any federal reservoir, either permanently or as an interim measure.

In summary, we ask that the consequences of any change in the present operation of Glen Canyon Dam be carefully examined and urge you not to change the present flow patterns of the River while the environmental impact statement is being prepared.

Mr. Commissioner, we are grateful for the opportunity to present our views and recommendations on this issue and ask that you carefully consider the most basic needs of the millions of American citizens who depend daily on the water and power provided by operations on the Colorado River.

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Working for the Nature of Tomorrow.

*Peggy*  
EJ#23022

NATIONAL WILDLIFE FEDERATION, 1400 Sixteenth Street, N.W., Washington, D.C. 20036-2266 (202) 797-6800

Office of the President

January 12, 1990

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Hon. Manuel Lujan, Secretary  
U.S. Department of the Interior  
18th & C Streets, N.W.  
Washington, D.C. 20240

Dear Secretary Lujan:

Recent decisions regarding the conduct of two proposed environmental impact statements by the Department of the Interior's Bureau of Reclamation cast doubt on the Department's adherence to the National Environmental Policy Act. The National Wildlife Federation applauds the decisions to prepare environmental impact statements on the operations of the Glen Canyon Dam and the renewal of water service contracts for the Friant Unit of the Bureau's Central Valley Project. We urge you, however, not to place unrealistic time limits on the preparation of the Glen Canyon EIS and not to restrict the scope of the Friant EIS.

Since the Glen Canyon EIS will be the first study of operating alternatives for the largest dam on the upper Colorado River, the study must be carried out in a thorough and comprehensive manner. Alternatives for dam operations must be carefully weighed, considering Glen Canyon's impacts downstream on Grand Canyon National Park, a premier national resource. Although the Bureau's Federal Register notice anticipated completion of a draft EIS by the end of 1991, more recent Interior Department memoranda indicate that the entire EIS process will be completed at that time. Such a short time frame would not be sufficient to complete necessary flow studies and examine reasonable alternatives as required by the National Environmental Policy Act.

The Friant EIS raises similar river management issues for one of the most important rivers in California, the San Joaquin River, which flows into the nationally important wetland resources of the San Francisco Bay and Sacramento/San Joaquin Delta. The renewal of forty-year water service contracts for water from the Friant Dam

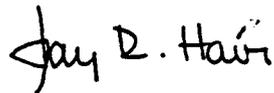
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Hon. Manuel Lujan  
January 12, 1990  
Page 2

should present an opportunity to review and rethink the dam's effects on the San Joaquin River. The EIS to be prepared on the contract renewals, however, has been improperly constricted in scope. That constriction, reflected first in a press release and then in the Federal Register notice on the "San Joaquin River Basin Resource Management Initiative," will lead to a sorely deficient EIS that considers all but the central issue: the amount of water to be contracted from the Friant Dam over the next forty years. The failure to consider alternatives as to the amount of water to be contracted vitiates the entire EIS process.

In our view, the National Environmental Policy Act is not an obstacle to be overcome in the most expedient manner possible, but rather a tool of good government to be used to improve decisionmaking. The Interior Department's recent decisions to curtail the Glen Canyon and Friant EISs convey an alarming disregard for the purposes of this Act. On behalf of the National Wildlife Federation's 5.6 million members and supporters, I ask that you reevaluate the scope and duration of these two EISs, and conduct both in a manner that fully complies with the requirements of the Act.

Sincerely,



JAY D. HAIR

JDH:seb

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## United States Department of the Interior

BUREAU OF RECLAMATION  
WASHINGTON, D.C. 20240

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Mr. Jay D. Hair  
President  
National Wildlife Federation  
1400 Sixteenth Street, N.W.  
Washington, D.C. 20036

Dear Mr. Hair:

Thank you for your letter of January 12, 1990, to Secretary Lujan expressing your support for his decisions to prepare environmental impact statements (EIS's) on the Glen Canyon Dam in Arizona and on the San Joaquin River Basin in California, while conveying your concerns about the duration and scope of these EIS's.

With regard to your concern that the time we are allowing for the Glen Canyon EIS will not be enough to properly assess the situation, we believe that the data collected during the Glen Canyon Environmental Studies since 1982 will augment the EIS process sufficiently to allow us to consider the broadest possible range of practicable alternatives by the end of next year.

The EIS process on the San Joaquin River Basin Friant Unit will be a part of the Department's San Joaquin River Basin Resource Management Initiative and will include a consultation process, already begun, with the U.S. Fish and Wildlife Service under Section 7 of the Endangered Species Act. This consultation process will take into account the renewal of all of the Friant Unit water service contracts and each of the aspects to be reviewed in our EIS. The State of California and other interested parties will be asked to cooperate in the Initiative and the preparation of the EIS. The renewal contracts for the Friant Unit are subject to modification by the United States based on compliance with applicable Federal environmental laws. The provisions of the contracts covering right to long-term renewal and quantity of water, however, are non-discretionary under Federal Reclamation law. It should be noted that the State of California retains responsibility for determining beneficial use and allocation of water under State law.

We believe that by taking a basin-wide approach, much can be done to improve the fisheries, wetlands, and water quality in the San Joaquin River Basin without frustrating the legally-mandated contract renewal process.

Thank you for taking the time to express your concerns about these issues. I look forward to the continued participation of the National Wildlife Federation in both of the environmental initiatives.

Sincerely,

(Sgd.) DENNIS B. UNDERWOOD

Commissioner

bc: AS/WS, ES:CS, US, OPA, FW, PBA, SOL, SIERRA  
Regional Director, Sacramento, California  
Regional Director, Boulder City, Nevada

W-1007, W-1500, W-5600, W-5610, W-5630, D-1001, D-3700, D5000  
(w/c of incoming to each)

WBR:RArnold:01/23/90:x3127:GCEIS.FRI:EX-23022/ACTS 90024:ARMS-ENV 1.00

REV:RArnold:01/24/90

REV:AS/WS:SOL:02/13/90

REV:ES (Weimer):02/13/90:change to Commissioner's signature

Held until week of 2/19/90 per Commissioner's instruction regarding all Glen  
Canyon-related correspondence. RNA, 2/22/90

REV:WBR:RArnold:pd:3/6/90:x3127:ES-23022/ARMS-90024

CONT. #

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Page 3 of 11

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Working for the Nature of Tomorrow.



# NATIONAL WILDLIFE FEDERATION

1400 Sixteenth Street, N.W., Washington, D.C. 20036-2266 (202) 797-6800

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**Comments of William W. Howard  
Executive Vice President**

of the

**National Wildlife Federation**

regarding scoping for the

**Glen Canyon Dam Environmental Impact Statement**

before the

**Department of the Interior**

**Washington, D.C.**

**March 27, 1990**

Good morning. My name is William W. Howard, and I am Executive Vice President of the National Wildlife Federation. I appreciate the opportunity to present the views of the National Wildlife Federation on appropriate scoping for the Glen Canyon Dam Environmental Impact Statement (EIS). The Federation, with over 5.8 million members and supporters, and affiliates in 51 states and territories, including each of the Colorado Basin states, is the nation's largest citizen conservation organization. NWF has been actively involved in environmental issues related to the Colorado River and its water management for many years. The Federation and its affiliates have sought management improvements at Glen Canyon Dam for more than a decade.

The construction of Glen Canyon Dam was one of the United States' major mistakes in managing our natural resources. Upstream, it flooded a breathtaking labyrinth of carved layer-cake canyons of pink and golden geologic history. Edward Abbey wrote:

To grasp the nature of the crime that was committed, imagine the Taj Mahal or Chartres Cathedral buried in mud until only the spires remain visible. With this difference: those man-made celebrations of human aspirations could conceivably be reconstructed, while Glen Canyon was a living thing, irreplaceable, which can never be recovered by any human agency.

The current operation of the dam--alternating peaking and low flows daily, and sometimes twice daily--is causing severe damages downstream to another irreplaceable wonder--the Grand Canyon. The Grand Canyon is a natural wonder of inestimable value. Its designation as a World Heritage site and a United States National Park just barely begins to evoke the uniqueness and importance of this place. For many, it is hard to understand how we arrived at this circumstance--facing daily on-going degradation of this priceless treasure.

We are pleased that the Secretary of the Interior has finally agreed to prepare an EIS on Glen Canyon Dam's management. Such an analysis is long overdue. Unfortunately, we fear significant harm--some possibly irreversible--has been done to the Grand Canyon's resources while the Bureau of Reclamation and the Western Area

Power Administration stalled and delayed corrective action. Therefore, the Secretary should establish an interim flow regime to lessen the on-going degradation of park resources for the duration of the EIS process. There is no credible excuse for continuing the level of damage from fluctuating flows now being experienced in the Grand Canyon.

This may be the most important EIS that the Bureau of Reclamation has ever undertaken. Its preparation will require a level of cooperation with other federal agencies, including the U.S. Fish and Wildlife Service, the National Park Service, the Environmental Protection Agency and the Western Area Power Administration in the Department of Energy, that goes far beyond that which prevailed in the Glen Canyon Environmental Studies (GCES)--and at a level that is probably heretofore unprecedented. The Bureau must also ensure a high degree of cooperation with state agencies and the active involvement of the public throughout the EIS process.

The value of this EIS will depend on the development of a complete, reliable, and scientifically-documented description of the affected environment, the development of a full array of potential alternative operating scenarios, and identification of expected environmental effects and mitigation measures that will assist the formulation of a new preferred operating plan for Glen Canyon Dam to protect natural resources. With this in mind, the National Wildlife Federation makes the following comments regarding the Bureau's initial plans for the Glen Canyon Dam EIS.

## I. The NEPA Process

The Bureau has not allowed sufficient time for public participation in scoping, or for its own preparation of an adequate final EIS.

The Bureau of Reclamation's initial *Federal Register* notice announced that scoping of the EIS would begin in January of this year and that a Draft EIS was projected for completion at the end of 1991. It is obvious the public scoping has already been delayed by at least two months. In addition, the Bureau has recently announced that the Final EIS will be "filed in December of 1991," compressing the time frame for the entire EIS process into 22 months.

This compressed time frame places unreasonable constraints on the scientific studies that are needed to describe natural processes and to measure Glen Canyon Dam's environmental effects on Grand Canyon resources. It allows barely one cycle of seasons for additional data collection, and severely limits time available for data analysis and development of recommendations. It is our understanding that the vast majority of resource agency scientists and consultants who have been involved with GCES believe a "credible" scientific effort cannot be accomplished in the short period allowed, with adequate time for NEPA's required public involvement. We believe, therefore, that the projected completion date for the FEIS should be extended to the end of 1992 or longer, depending on the progress of the studies.

We also believe the period for public comments on scoping should be extended at least 30 days to May 16, 1990. Although the February notice promised news releases and public mailings "no later than 15 days" before scoping meetings, this schedule was not met. Information packets were mailed only one week before the meeting period began. Also, a significant number of people were apparently excluded from the Flagstaff public meeting due to inadequate space and the city fire marshal's concerns. To assure full and effective public involvement, it would be appropriate to grant at least an additional 30 days for scoping comments.

**The Bureau should schedule a variety of flow releases for research purposes to expedite the EIS process.**

The core group of GCES scientists has developed a package of recommended research flows that should be implemented immediately in order to allow field studies that are necessary for the EIS. The severe limitations on research-related flows in the past have been a primary obstacle to the timely identification of environmental effects and their causes in the Glen Canyon Environmental Studies. Extending the EIS time frame as we have recommended will allow an opportunity for any additional flow-related studies that may become necessary once studies are begun in earnest or after initial data is analyzed. For this EIS process to be a success, we urge the Bureau to give special priority to necessary research flows.

supplies, and for municipal, industrial, and other beneficial purposes; improving water quality; providing for basic public outdoor recreation facilities; improving conditions for fish and wildlife, and the generation and sale of electrical power as an incident of the foregoing purposes.

43 U.S.C. § 1501. Although the operating criteria have served the purposes of control and delivery of the waters of the Colorado River to meet Compact obligations and consumptive uses, and the "incidental" purpose of power generation, they do not address the other purposes of the 1968 Act. NEPA was not applied to the criteria as originally adopted, and no NEPA documents have ever been prepared on the criteria to determine their environmental effects.

This year's five-year review should examine the criteria in the context of the environmental and recreational purposes of the Colorado River Basin Project Act. Since the operating criteria are integral to the day-to-day and month-to-month operations of Glen Canyon Dam, the current EIS process presents an important opportunity to analyze the effects of alternatives to the existing criteria, which may broaden the range of alternatives for day-to-day operations of the dam. For example, the Glen Canyon Dam EIS should include an identification and evaluation of the environmental effects of various alternative flood control operating criteria. Environmental effects to be analyzed would include, for instance, effects on downstream flooding, sediment transport and deposition, and possible effects on the Rainbow Bridge area.

The development of operating criteria and the annual operating plans should fully involve fish and wildlife, recreational, and other environmental agencies and interests in the Colorado River Basin.

The EIS planning setting should fully recognize the Secretary of the Interior's obligation to protect the resources of Grand Canyon National Park and Glen Canyon National Recreation Area.

The Bureau's Background Paper for the EIS says the primary purpose of the EIS is to develop options that could be implemented

It is especially important that an MOU between the Bureau and WAPA spell out the division of responsibilities and process of interaction between the Bureau's Glen Canyon Dam EIS and WAPA's EIS addressing all of the CRSP dams and the environmental impacts of allocating and contracting CRSP power. Careful coordination between WAPA and the Bureau for both of these EIS's will be critically important to other agencies and to the public.

## II. The Content of the EIS.

The EIS should evaluate alternative criteria for operation of Glen Canyon Dam and the Lake Powell reservoir in accordance with the requirements of the Colorado River Basin Project Act.

Section 602 of the Colorado River Basin Project Act requires the Secretary to develop criteria for coordinated long-range operation of the Colorado River reservoirs to meet the requirements of the Compacts among the states and the U.S. treaty with Mexico. 43 U.S.C. § 1552. These criteria, originally published by Secretary Walter Hickel in 1970, are reviewed by the Secretary, with assistance by representatives of the States and other parties, every five years. *Criteria for Coordinated Long-Range Operation of Colorado River Reservoirs*, 35 Fed. Reg. 8951-52 (June 10, 1970). That review of the operating criteria falls in this year, 1990. As the Department's background documents indicate, the long-term operating criteria have significant ramifications for reservoir operations and thus for the environment. Therefore, the Secretary should incorporate the five-year review into the EIS process, and consider the environmental effects of various alternatives for the long-range operating criteria.

In addition to meeting the section 602 requirements, the Secretary's long-term operating criteria must comport with the purposes of the 1968 Colorado River Basin Project Act, set forth in section 102, for

regulating the flow of the Colorado River;  
controlling floods; improving navigation;  
providing for the storage and delivery of the  
waters of the Colorado River for reclamation  
of lands, including supplemental water

The Secretary should require an interim flow schedule during the EIS to minimize on-going damage to Grand Canyon resources.

Ample evidence now exists that on-going "normal operations" of Glen Canyon Dam are unnecessarily damaging resources by eroding beaches, increasing fish mortality and discouraging reproduction, threatening endangered species maintenance and recovery, and adversely affecting recreational use of the downstream park areas. In the course of the GCES, resource agencies made it clear that interim flow regimes could be adopted that would limit the on-going adverse impacts while the studies proceeded. The Secretary must act promptly to establish such flows, particularly raising minimum flow levels and moderating ramping rates. The resource agencies should be consulted regarding their best judgment, based on best available knowledge, as to flows that would reduce and minimize impacts on Grand Canyon/Glen Canyon NRA resources. These flows should be implemented, consistent with flows necessary for research purposes, until a final decision on dam operation is made.

The roles, responsibilities, and methods of coordination with each cooperating agency should be spelled out in a Memorandum of Understanding.

The coordination difficulties among the federal and state agencies in the Glen Canyon Environmental Studies were widely recognized. The range of difficulties witnessed in the GCES can be expected to be much greater in the EIS process because of added public involvement and the broader set of issues to be addressed. Examples of such issues are: how basic information will be shared among agencies and with the public, how each agency's mission will be incorporated in planning, how agencies will be assigned specific studies and financial contributions, how agencies such as the Arizona Game and Fish Commission or the State Historic Preservation Office will be included, how timetables are to be developed and agreed upon, and what the process will be for choosing alternatives for the DEIS and the formulation of recommendations and a preferred alternative for the FEIS. Many of these process arrangements will affect public involvement and should be spelled out explicitly and publicly as soon as possible, early in the EIS process, through Memoranda of Understanding.

to minimize, consistent with law, the impact of the operation of Glen Canyon Dam on the downstream environmental and ecological resources.

It is important for EIS planners to recognize that the Secretary has a strong and clear mandate to protect the National Park and NRA resources and to manage Glen Canyon Dam accordingly. Contrary to assertions by WAPA and power customers that power must have 'primacy', the 1956 CRSP Act and the 1968 Colorado River Basin Project Act both identify power generation as an 'incident' to the other purposes of dam development. 43 U.S.C. §§ 620, 1501. The later 1968 Act recognizes a range of beneficial purposes, including environmental and recreational purposes, as precedent to power generation. Id. at § 1501. Additionally, since each new long term-power contract developed for the sale of CRSP power provides for any changes that could result from NEPA compliance, those contracts do not limit the Secretary's prerogatives for adoption of environmental measures.

The NWF supports the reasoning of the Intermountain Regional Interior Solicitor in the June 6, 1988 memorandum to the Bureau, that the Secretary has discretion in operating Glen Canyon Dam if resource considerations require changes. The Secretary must be guided by the "fundamental purpose" of the National Parks,

to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations

National Park Service Organic Act, 16 U.S.C. § 1, and other laws related to establishment and management of Grand Canyon National Park and Glen Canyon NRA. The Secretary must recognize the international importance of these Park resources as a designated World Heritage site by United Nations Convention, and identified by Congress as a "natural feature of national and international significance" in the Grand Canyon National Park Enlargement Act. Id. at § 227. The Secretary is also bound by law to maintain and encourage the recovery of endangered species in areas affected by Glen Canyon Dam operations.

We do not agree that the EIS should be limited to considering environmental impacts only on downstream resources. First, the Secretary is bound by the Endangered Species Act to consider the impacts of Dam operation on endangered species, wherever those impacts occur. Habitats of some species of concern, such as migratory birds, range beyond the immediate downstream area and could be affected by water management decisions. Second, the Bureau must consider the full range of environmental impacts, including non-riparian impacts, that are related to Glen Canyon power generation. Such consideration would include cumulative environmental effects of changes in dam operations within the CRSP market area and California, to the extent that energy from Glen Canyon Dam is ultimately marketed through WAPA and the "oil displacement" program.

**The EIS must address the impacts of dam management on Grand Canyon resources, developing a preferred alternative that avoids or minimizes these impacts in a fully integrated dam operation plan.**

The development and analysis of alternatives is described by the Council on Environmental Quality NEPA regulations as the "heart" of the NEPA process. 40 C.F.R. § 1502.14. The alternative operating scenarios chosen to be analyzed in the Glen Canyon Dam EIS should assist the Secretary and the public in understanding the full range of options available for protecting, mitigating damages to, and enhancing the environmental resources affected. Ultimately, the preferred alternative in the final statement may be one of the alternatives analyzed or another alternative drawn from the results of the studies and analysis conducted.

NWF recommends the following seven alternative power operation scenarios for Glen Canyon Dam be developed and analyzed in the Draft EIS:

- an alternative that maintains the current operations to maximize "peak" capacity benefits to power customers (the "no change" alternative);
- an alternative that minimizes flow fluctuations (maximizes "baseload" power generation);

- one or more alternatives that constrain flow fluctuations between current operations and minimum flow fluctuations;
- an alternative that best approximates natural (pre-dam) flows by season, with minimum spill;
- an alternative that emphasizes endangered species maintenance and recovery;
- an alternative that emphasizes recreation opportunities for the public;
- an alternative that emphasizes reduction of air pollutants and minimizes greenhouse gases in the electric power service area.

Each alternative should be evaluated from the perspective of a full range of probable flows that may be experienced, discussing the direct and cumulative environmental impacts that can be expected throughout that range.

Each of the alternatives identified in the EIS should be accompanied by a full analysis of environmental impacts. The GCES identified a number of primary resource impact concerns that must be fully addressed in the EIS. These are:

- beach erosion and loss;
- degradation of the Grand Canyon's ecosystem, including soils, riparian vegetation, water quality and suitability for dependent fish and wildlife and the supporting food chain;
- limitations on endangered species, including the humpback chub and other species, and their recovery;
- trout fishery losses and adverse impacts on trout reproduction; and
- and degradation of the unique and extraordinary recreational experience for both boaters and hikers in the Grand Canyon.

The GCES analysis was admittedly limited in scope. Endangered species studies were mostly confined to the endangered humpback chub and did not thoroughly analyze impacts on bald eagles, peregrine falcons and other endangered or threatened species. Resource agency biologists expressed their concerns that numerous other plant and animal species are subject to impacts of dam operations, but additional studies and analysis will be necessary for adequate evaluation in the EIS. Studies are especially necessary to better describe the overall effects of dam operation on the Grand Canyon ecosystem.

In addition to describing and evaluating the Dam's impacts on the ecosystem and recreational uses under various operating scenarios, the EIS should also describe and evaluate the non-riverine environmental impacts of Glen Canyon operations. Such impacts would include impacts on regional air quality from the power system generation of which Glen Canyon Dam is a part, including the CRSP market area and California. It appears that much of the time peaking operations cause coal-fired generation to displace gas-fired generation, thus increasing greenhouse gases and other air pollutants, including CO<sub>2</sub>, SO<sub>2</sub>, and NO<sub>x</sub>. In addition, the availability of inexpensive federal power at peak demand periods may eliminate conservation incentives.

In developing alternatives, the EIS should place emphasis on operational and non-structural, rather than structural measures, insofar as they may intrude on Grand Canyon National Park or Glen Canyon NRA lands.

From the Bureau's "Development of Alternatives" document, it appears possible that the EIS will consider at least some "structural" measures as alternatives to mitigate adverse impacts of Glen Canyon Dam operations. Possible structural measures listed in the document are: a variable intake structure at the Dam; a new reregulation dam downstream from the Dam; beach protection measures; and sediment augmentation measures in the Grand Canyon.

In general, the location of new structural features in Grand Canyon National Park would likely affect the Park resources adversely and violate the purposes of the Park or the NRA's establishment. For that reason alone NWF believes construction of yet another dam on the Colorado River for reregulation would constitute an absurdity that would surely meet with strong

opposition. Similarly, it is likely that structural beach protection measures would represent a totally unacceptable intrusion into the Park.

Some structural measures may warrant consideration. A variable level intake structure at Glen Canyon Dam would not necessarily invade protected areas and could potentially contribute to improved water management for recreation and fisheries. We believe that the feasibility of sediment augmentation should also be studied to identify whether any acceptable approach might exist to ameliorate the interception of sediment by the dam and reservoir.

### Conclusion.

When Americans travel overseas, they often visit the Taj Mahal, the Pyramids, the Louvre Museum and other man-made treasures. These nations take pride in their monuments and museums and would never consider damaging or destroying them. Millions of visitors to our country come here to view, not the skyscrapers, but our natural wonders, such as the Everglades, Yosemite, and the Grand Canyon of the Colorado. Although Americans lead the world in protecting the natural landscape and habitat, and manage and use the world's largest system of parks, monuments, and preserves, we have damaged some of our nation's treasures.

The current EIS on Glen Canyon Dam gives us an opportunity to halt and possibly counteract some of that damage. The Federation looks forward to active participation in this EIS process and to working with the Bureau and the cooperating agencies toward improved management of Glen Canyon Dam and a strong protection plan for the Grand Canyon National Park and the natural resources of the Intermountain West.

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NATIONAL WILDLIFE FEDERATION

1400 Sixteenth Street, N.W., Washington, D.C. 20036-2266 (202) 797-6800

April 6, 1990

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Mr. Roland Robison  
Glen Canyon Dam-  
Environmental Impact Statement  
U.S. Bureau of Reclamation  
P.O. Box 11568  
Salt Lake City, Utah 84147

Dear Mr. Robison:

At the March 27, 1990 scoping hearing on the Glen Canyon Dam EIS, a representative of the American Public Power Association (APPA) testified erroneously regarding the National Wildlife Federation, et al. v. Western Area Power Administration lawsuit. He stated that Judge Greene had held in our case that the Colorado River Storage Project Act requires that WAPA maximize firm power production at Glen Canyon Dam. Judge Greene made no such holding in the case.

Judge Greene did dismiss the second count of the plaintiffs complaint, the "ultra vires" claim that WAPA lacks authority to purchase non-federal power. He did not make any legal holdings in dismissing that count. Rather, he dismissed it as "law of the case" because he had previously dismissed the same claim in the consolidated case, Salt Lake City, et al. v. WAPA. The dismissal of that claim was and still is being appealed to the Tenth Circuit Court of Appeals. In the meantime, Judge Greene denied WAPA's request for summary judgment on our NEPA claim, which was premised on the theory that WAPA must maximize firm power production by the CRSP, leaving WAPA no discretionary decisions that would require analysis in an EIS. Judge Greene's rejection of this motion implied a rejection of the underlying argument that WAPA must maximize firm power production.

The appeal may or may not reach the issue whether WAPA must maximize firm power production under the CRSP Act. Judge Greene did not address that issue directly when dismissing the "ultra vires" claim in either the Salt Lake City case or the NWF case. Instead, he stated accurately in the Salt Lake City decision that the

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CRSP Act addresses "the sale of federal power at firm rates." WAPA and the power purchasers have continually misinterpreted the statutory provision as referring to "firm power" rather than "firm rates." The Tenth Circuit decision may or may not address that particular misinterpretation. Oral argument on the appeal was held on March 6, so a decision is likely at some time in the course of the present EIS process.

There has simply never been any judicial ruling that supports the APPA's claim regarding the priority of firm power production in the CRSP system.

Sincerely,



S. Elizabeth Birnbaum  
Counsel  
Water Resources Program

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Northern Arizona Flycasters (NAF) Scoping Recommendations concerning  
Dam Environmental Impact Statement (GCD EIS).

The following statement was unanimously endorsed by the NAF Board of Directors on March 15, 1990.

INTRODUCTION: NAF is a seventy-five member flyfishing organization dedicated to education, conservation and preservation activities associated with trout fisheries and riparian environments.

REFERENCE:

1. The Colorado River Basin Project Act of 1968. NAF believes the basic intent of this Act is not being honored. Specifically, the degradation of downstream resources for the sake of electrical power generation is in direct conflict with the stated purpose and policy of the Act.
2. The GCD EIS process. NAF believes the existing deadline to produce a final EIS is inadequate and will result in an invalid record lacking appropriate research and sound conclusions. The process must be extended at least one year to allow for the production of a credible document.

CONCERNS: NAF believes a premier downstream recreational resource of national significance is the trout fishery at Lee's Ferry. The destruction of aquatic habitat, stranding of fish and ruination of spawn as a direct result of GCD operations (dewatering) is a major concern of this organization.

SCOPE: NAF believes river flow research should be included in the scope of the EIS studies.

1. Slower ramping rates will help alleviate the stranding of fish.
2. Raising the low flow limit will help re-establish river vegetation and preserve spawning areas.
3. Reducing the volume of maximum flows will help stabilize downstream aquatic and riparian environments and will enhance water quality.

RECOMMENDATIONS: NAF believes a preferred alternative to existing GCD operations must include:

1. Recognition of downstream recreational activities including trout fishing opportunities.
2. Protection and enhancement of aquatic/riparian environments and fisheries habitat.
3. The re-establishment of recreational and environmental values over electrical power generation as prescribed by the Act of 1968.

John R. Marvin  
President  
Northern Arizona Flycasters

**P-III Associates, Inc.**

Cultural Resource Consultants

**ORIGINAL**

2212 South West Temple, Suite 21  
Salt Lake City, Utah 84115-2645  
(801) 467-5446

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April 16, 1990

Glen Canyon Dam EIS  
U.S. Bureau of Reclamation  
P.O. Box 11568  
Salt Lake City, Utah 84147

Regarding: Comments on Glen Canyon Dam EIS

Gentlemen:

If the Bureau of Reclamation is finally conducting an EIS for Glen Canyon and the dam, then perhaps it should be done right and done thoroughly. You should extend the EIS deadline to December of 1991 and make sure that all of the studies have adequate time and funding to be done.

In the 1950s when the Glen Canyon Project was conceived and executed, there was little concern for the effects of the project on the natural and cultural environment of the region. It appears that the Bureau of Reclamation still has little concern about the natural environment of the area and is far more concerned about managing power output from the Glen Canyon facilities. Current water releases from the dam are dictated by peak power needs rather than concern about environmental effects or damage. I totally disagree with this approach and believe that the EIS should develop and evaluate alternatives for water flow regimes that are in better harmony with the natural environment.

It is certainly true prior to the Glen Canyon Dam, there were tremendous natural and seasonal fluctuations in the water levels of the Colorado River. But, these fluctuations in water flow were not arbitrary and daily but rather were in harmony with the natural environment; the ebb and flow of the river did not destroy the habitat or wildlife but rather added to the natural beauty and the seasonal renewal of the canyon bottom. Unfortunately, today, it is not the concerns of the environment or needs of the local wildlife that dictate the water flow but rather the extra-natural demands of energy companies throughout the West.

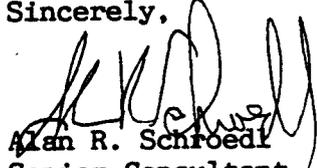
I urge the Bureau of Reclamation to restrict daily fluctuations in water flow, establish a minimum flow of 5000 cfs, and limit the maximum water flows in the Colorado River those which occurred prior to the construction of the Glen Canyon Dam and the impoundment of Lake Powell. The minimum flow should take effect at once and peak power production, which is destroying beaches, interfering with the reproduction of the endangered humpback chub, destroying streamside habitat, stranding fish, and endangering river runners, should cease immediately.

004642



It is a sad commentary on the whole political process concerning the Environmental Impact Statement for the region that there is no vocal constituency that can demand preservation and protection of local wildlife and natural habitat in one of our National Parks. I hope that in the final outcome of this EIS that you give equal consideration to the short-term and long-term effects on natural habitat, local wildlife, and those individuals who would rather appreciate an undisturbed scenic wonder than having their air conditioners running in the middle of July.

Sincerely,

  
Alan R. Schroedl  
Senior Consultant

ARS/mas

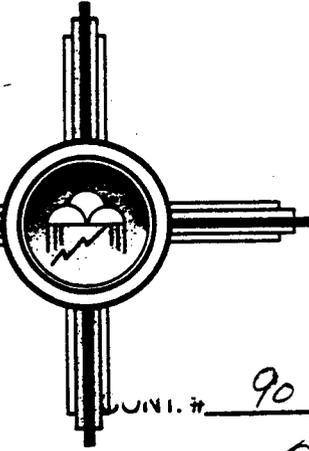
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PLAINS ELECTRIC GENERATION AND TRANSMISSION COOPERATIVE, INC.  
P.O. Box 6551 • Albuquerque, New Mexico 87197-6551 • Phone (505) 884-1881  
Fax (505) 889-7636

UNIT # 90-25470  
FLDR # 20990

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MAY 29 '90

Date	Initials	To
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April 23, 1990

The Honorable Manuel Lujan, Jr.  
Secretary of Interior  
United States Department of  
the Interior  
18th and C Street, Northwest  
Washington, D.C. 20240

TO	INIT	DATE
5600		
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FILES		

Dear Honorable Secretary:

I am sure by now that you are aware of a bill sponsored by Congressman George Miller of California, H.R. 4498, "to amend the Colorado River Storage Project Act", that will be heard in subcommittee this week. Essentially, this bill would direct the Secretary of Interior to implement emergency interim operational criteria for the Glen Canyon Dam. You are also aware of the reaction this has caused within the environmental community and within the water and power interests of the Colorado River basin states.

In our view, there is no emergency situation at this time that would justify such Congressional action as is being proposed by the George Miller bill. No studies to date have given scientific evidence for concluding that an emergency exists.

- o There is no scientific data indicating that the endangered fish species below the dam would be irreparably damaged over the next two years under current operations.
- o There is no scientific data indicating that the trout fishing would be irreparably damaged over the next two years under current operating conditions.
- o There is no scientific data indicating that the river habitats would be irreparably damaged over the next two years under current operating conditions.
- o There is no scientific data to confirm that the recreational boating industry would be irreparably damaged over the next two years under current operating conditions.
- o There is no scientific data to confirm that the Grand Canyon beaches would be irreparably damaged over the next two years under current operating conditions.

Rec'd BORSC  
on 29 May 90  
Mef

The Honorable Manual Lujan, Jr.  
April 23, 1990  
Page 2

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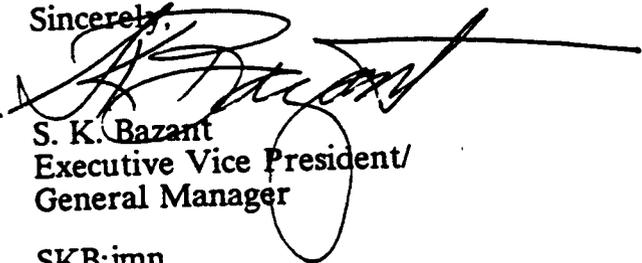
There is, however, a scientific data acquisition process in place which is a carry-forward of the once Glen Canyon Environmental Studies (GCES), and that is now the EIS Process ordered by you some months ago. To implement changes now based on limited data and non-scientific reactions to perceive problems would compromise the program of careful science and violate the EIS process. In our view, a process so complex and detailed as an EIS must be completed in all its scientific form without external influences that would substantially alter the study and scientific data collected.

The EIS Process now calls for test flows to be run in 1990 and 1991. The cost to the Preference Power community to make up replacement power during the tests is \$16,000,000 of which Plains' customers will pay approximately 15%. Further, the proposed legislation based on studies by the Western Area Power Administration could cost the power users an additional \$47,000,000 per year which Plains and its Members will pay approximately 15%.

In summary, the best scientific data available does not support the declaration of emergency, nor does it provide any basis for making a reasonable determination of interim flow criteria. Studies are now underway, which when concluded, will provide a good basis for decision. There is no information which one can conclude that irreparable harm will come during the time these studies are carried out. When the studies are completed, it may then be appropriate to put interim criteria into place for the duration of the EIS and the implementation process.

On behalf of Plains Electric and the Member Distribution Cooperatives within the State of New Mexico, I urge you to convey to the Honorable George Miller, the importance of completing the EIS Process now on-going and the importance of allowing for the completion of the Secretarial directive implemented by you in carrying out the completion of the environmental studies below Glen Canyon Dam. We sincerely believe the process directed by you to complete the Environmental Impact Statement on the Glen Canyon Dam and the Colorado River should be completed as originally intended without any changes at this time to the operating criteria of the Glen Canyon Dam.

Sincerely,

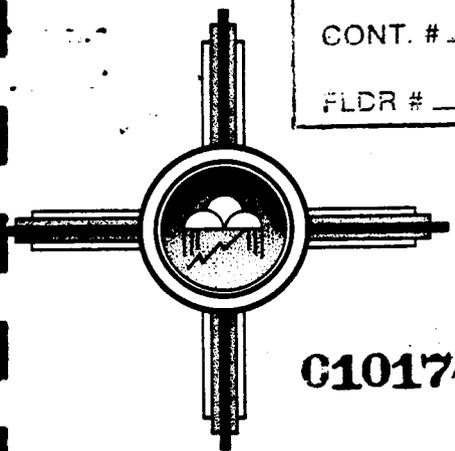


S. K. Bazant  
Executive Vice President/  
General Manager

SKB:jmn

CONT. # 90-21415  
FLDR # 20990

ORIGINAL



**PLAINS ELECTRIC GENERATION AND TRANSMISSION COOPERATIVE, INC.**

Albuquerque Headquarters  
2401 Aztec Road, NE, P.O. Box 6551  
Albuquerque, New Mexico 87197  
Phone (505) 884-1881

Escalante Generating Station  
P.O. Box 577  
Prewitt, New Mexico 87045  
Phone (505) 876-2271

**C10174**

May 3, 1990  
Albuquerque, NM

Mr. Roland G. Robison,  
Regional Director  
Upper Colorado Regional Office  
U.S. Bureau of Reclamation  
P.O. Box 11568  
Salt Lake City, UT 84147

Subject: Scoping - Glen Canyon Dam  
Environmental Impact Statement

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	LLS
Subs. Corresp.	
Date Ans'd	

Dear Mr. Robison:

Plains Electric Generation and Transmission Cooperative, Inc. (Plains) is a member of the Colorado River Energy Distribution Association (CREDA) and in that regard support the comments and testimony on the scoping of the Glen Canyon Dam EIS, which have been submitted by that organization. We continue to wholly support the Bureau of Reclamation in its effort to prepare a credible EIS and ask that these comments presented herein be added to the record.

We urge Reclamation to analyze all reasonable alternative suggested during the public scoping meetings, including non-operational structural alternatives. Our concern is that operational alternatives have seemed to receive priority consideration by USBR during presentations at these meetings. Structural alternatives must be given equal consideration, as required by the National Environmental Policy Act, during your analysis for the EIS. Please remember that it is not solely the number of times that an alternative is suggested that makes it important, but it is also the quality of that suggestion which makes it worthy of consideration. Plains feel that many reasonable structural alternatives have been suggested and ask that they be given proper consideration.

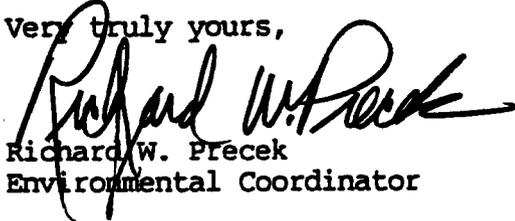
I have attached a list of those and other alternatives compiled during the eight scoping meetings which we would like your agency to consider prior to preparing the scope of the EIS. It is our hope that this list will assist you in that endeavor.

It has been noted that Reclamation will likely extend the two year time frame for completing the EIS process. Whereas this extension of time is somewhat understandable we encourage Reclamation to make wise use of the extension to see that the studies are completed in a timely manner. The extension should be used as a safety valve permitting more detailed analysis of the data, if necessary, but should not be used to extend the current study schedule.

Mr. Roland G. Robison  
May 3, 1990  
Page 2

Plains Electric thanks you for the opportunity to provide these additional comments, and it is our hope that they will be of use in your planning effort.

Very truly yours,



Richard W. Precek  
Environmental Coordinator

RWP:hh/518

Enclosure

cc: George M. Sheldon, w/encl.  
Clifford Barrett, w/encl.

FILE: A-CREDA - Environmental

**C10174**

## Suggested Alternatives

### for Scoping the Glen Canyon Dam EIS

1. The "No Action" Alternative
  - a. 1000/3000 cfs minimum releases winter/summer limits.
  - b. 31,500 cfs maximum release limit.
  - c. No daily restrictions on variations within maximum and minimums.
  - d. Current ramping rates (hourly change limits) per WSCC Guidelines.
  - e. No restriction on ability of system to react to emergencies.
  
2. Operational Alternatives
  - a. Changes to low flow limits seasonally/annually/monthly.
  - b. Changes to maximum release limit seasonally/annually/monthly.
    - 1) Upward to maximum generating capability (33,200 cfs).
    - 2) Downward incrementally seasonally/annually/monthly.
  - c. Restrictions on daily variations seasonally/annually/monthly/weekly/daily.
  - d. Restrictions on ramping rates seasonally/annually/monthly/weekly/daily.
  - e. Restrictions on emergency response criteria.
  - f. Increments of a. through e. defined by limits of observable differences to flows/impacts from variations tested.
  - g. Changes to monthly water release volumes.
  
3. Non-operational Non-structural Alternatives
  - a. Alter fishing regulations for Lee Ferry fishery.
  - b. Alter trout stocking volume for Lee Ferry fishery.
  - c. Alter trout species/strains through selective stocking.
  - d. Enhance forage base in Lee Ferry fishery.
  - e. Mark channel above Lee Ferry.
  - f. Control striped bass and other potential chub predators.
  - g. Monitor Little Colorado River re water flows, quality.
  - h. Define and implement conservation measures for humpback chub in the Little Colorado River, coordinate with Upper Colorado River conservation efforts.
  - i. Alter the Colorado River Management Plan (NPS) for the Grand Canyon National Park.
  - j. Alter NPS management guidelines for the Glen Canyon National Recreation Area below Glen Canyon Dam.
  - k. Institute fee systems to support monitoring and research related to specific resources.
  - l. Identify and define monitoring programs concerning resources, actions and impacts that require further study to quantify.

C10174

4. Non-operational Structural Alternatives

- a. Re-regulating structure (below Glen Canyon Dam.
- b. Variable intake structure(s) at Glen Canyon Dam.
- c. Slurry pipeline from above Lake Powell to Glen Canyon Dam afterbay.
- d. Re-regulating dam on Little Colorado River above chub spawning area.
- e. New access road to Lee Ferry fishery to avoid 3-mile bar with new boat landing.
- f. Enhance low flow channel above Lee Ferry.
- g. Alter streambed areas where trout are trapped at low flows.
- h. Lower gravel bars used as spawning areas which are uncovered at low flows.
- i. Reconfigure beach slopes to facilitate water loading/unloading.
- j. Protect beaches with natural materials (rock, native vegetation).
- k. Rebuild beaches with river sediment.
- l. Establish new beaches in areas needed.

**G10174**



TIMBERLINE & HORSETOOTH ROADS • FORT COLLINS, COLORADO 80525 • (303) 226-4000

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May 4, 1990

Mr. Roland G. Robinson  
Regional Director  
Upper Colorado Regional Office  
U.S. Bureau of Reclamation  
P.O. Box 11568  
Salt Lake City, UT 84147

010167

Dear Mr. Robinson:

Platte River Power Authority, as a major purchaser of Colorado River Storage Project (CRSP) power, is vitally interested in the Glen Canyon Environmental Impact Statement (GC-EIS) and associated scoping process that is currently underway. Platte River provides wholesale electric power to the cities of Estes Park, Fort Collins, Longmont, and Loveland in northern Colorado and CRSP power currently provides over 35% of the power and energy which is used by the 190,000 people in these cities. The balance of the power requirements comes from base load coal fired power plants. Therefore, not only the quantity of power but also the flexibility of this power resource is of concern to us.

As a member of the Colorado River Energy Distributors Association (CREDA) we support the comments that have been made both in the scoping hearings and in the letter of May 3, 1990, on behalf of CREDA. We also commented at the Denver scoping meeting on behalf of Platte River. We are particularly concerned that non-operational (as well as operational) alternatives be thoroughly evaluated during the EIS and that the cost of the EIS and associated studies be shared and not just paid by power customers. We would encourage the Bureau to proceed with the EIS process expeditiously, realizing that it is a complex problem that may require a multi-part solution.

We appreciate the opportunity to provide comments for this EIS process and we will continue to participate in the process both individually and as part of CREDA.

Sincerely,

PLATTE RIVER POWER AUTHORITY

Thaine J. Michie  
General Manager

/sl

cc Cliff Barrett  
CREDA Board



daily by the radical variations of the flow level. While the disappearance of beaches has an impact on the tour operators' business, it is only one signal of the callous treatment of the whole river habitat in the name of cheap electricity for peak power production.

From the evidence of what more and more people are saying to me (including many of the 480 members of the Prescott Audubon chapter), you may expect that the public outcry about the effects of the flow variation on the Canyon is only beginning to be expressed.

I urge consideration of the obvious: that the Grand Canyon and the integrity of its biotic communities must take priority in decisions made on the operation of Glen Canyon Dam. Energy costs must reflect the true cost to the environment--when the integrity of the Grand Canyon is at risk, more and more Americans are realizing that peak power production with rapid flow variation is too costly at any price.

Although I can understand the need for sustained environmental impact study to determine the downstream effects of flow regimes, it is clear that the current, extreme variation has no place in the Canyon at any time, and claims that we need more and more study without any controls will appear to be obvious sophistry. I support the current efforts by Senator Bill Bradley and Congressman George Miller to get a bill through Congress to cut peak flows, and Morris Udall's effort to assure that this be done in a way that can allow reasonable continued study of flow impact.

I urge that there be permanent monitoring of the effects of any flow regime adopted, and adjustment to allow for continued benefits to the riparian corridor.

I urge that emphasis in determining the flow regime include low enough maximum flows to allow the river corridor to retain more of existing sediment flows, and that consideration be given to flow regimes that will allow deposition of sediment coming in during flood periods from side streams below Glen Canyon Dam.

Sincerely,



Donn Rawlings, Ph.D., Vice President & Conservation  
Committee member



CONT. # 90020684

FOR # 20990



SALT RIVER PROJECT

POST OFFICE BOX 52025  
PHOENIX, ARIZONA  
85072-2025  
(602) 236-5900

610288  
MAY 2, 1990

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MAY 4 '90

Date	Initials	To
		US

Date: \_\_\_\_\_  
By: \_\_\_\_\_

Glen Canyon Dam Environmental Impact Statement  
U. S. Bureau of Reclamation  
P. O. Box 11568  
Salt Lake City, UT 84147

Dear Sirs:

Subject: Comments of the Salt River Project on the Scope of the  
Glen Canyon Dam Environmental Impact Statement

The Salt River Project (SRP) appreciates the opportunity to participate in the public comment process for the Glen Canyon Dam Environmental Impact Statement. The SRP is concerned about the stewardship of our natural resources and supports an assessment of the impact operation of the Glen Canyon Dam has on the Grand Canyon.

SRP believes it is appropriate and necessary that alternate operational options be considered. However, the EIS must consider all options, including structural options, for the process to be credible.

In assessing the impact of potential alternate operating scenarios, the Bureau should consider the impacts which will extend beyond the Colorado River and the CRSP resources. It is important to keep in mind that the hydro-generation at Glen Canyon Dam is part of a much larger integrated power supply system. Modifying the operation of the dam will not only impact the availability of the hydro-generation resource, but will also impact the operation of the entire southwest integrated power supply system.

Shifting Glen Canyon generation from the peak-use times of the day will most certainly increase the use of older peaking units to meet peak loads previously met by the use of Glen Canyon. The potential contribution to air pollution in the Southwest needs to be considered.

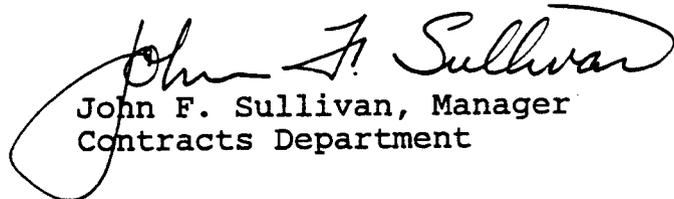
Glen Canyon Dam Environmental Impact Statement **E19733**  
May 2, 1990  
Page Two

Secondly, reducing the magnitude of power generated at Glen Canyon Dam during peak use times will affect the ability to effectively use the surrounding transmission system to deliver power from Utah and Colorado to Arizona. For SRP, during the test flow periods alone, the direct and indirect cost to replace power lost because of expected transmission system curtailments as a result of reduced Glen Canyon Dam generation will be significant.

Because of the broad interests in the outcome of the EIS process, timely completion of the EIS is important. However, the Bureau should be prepared to modify its schedule if a scientifically credible process can not be completed in the two year time frame now scheduled.

Finally, because of the broad interests in the outcome of the EIS process, SRP urges the Bureau to seek appropriations under Section 8 of the CRSP Act to fund the EIS and related studies, including the cost of replacement power required because of test flows through Glen Canyon Dam.

Sincerely,

  
John F. Sullivan, Manager  
Contracts Department

DAB/bw

c: Cliff Barrett, CREDA Executive Director  
Thaine Michie, CREDA President  
CREDA Environmental Studies Work Group

**Saving the Rivers of California and the West**

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FLDR # 20990

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MAY 10 '90	
Date	1/5

Manuel Lujan  
Secretary of the Interior  
Department of the Interior  
18th and C Streets  
Washington D.C. 20240

May 1st, 1990

Dear Secretary Lujan:

I am writing to you to let you know that I support a thorough and timely Environmental Impact Statement on the present fluctuating water release schedule of the Glen Canyon Dam.

It saddens me to think that a government agency would not be setting an example for our country to follow in this, the decade of the environment. As I write this letter, irreparable damage is being done to the Grand Canyon, one of the seven wonders of the world. Its fish, beaches, riparian habitat, wildlife, recreational and natural integrity are being literally washed away, purely for the maximization of power production resulting in profit from energy that is sold too cheaply to southwestern utility interests, in consideration of the damage being done to this national treasure.

On Tuesday, March 20th, the Bureau of Reclamation and several government agencies held one of several subcommittee hearings for the Environmental Impact Statement on the Glen Canyon Dam in Los Angeles. As chair of the Angeles Chapter River Conservation Subcommittee of the Sierra Club, I attended the hearing along with at least forty members of our River Touring section, other Sierra Club members, Grand Canyon river guides, Friends of the River members and other concerned private citizens. We were there to tell the Bureau to develop a sound alternate flow release schedule for Glen Canyon and to encourage a thorough environmental study of the dam's present release schedule. The support at this hearing for a thorough EIS was overwhelming, thirty to one in favor of saving the Grand Canyon. The one opponent represented the utility companies and as I understand, went from hearing to hearing as a sort of traveling road show.

The Glen Canyon EIS must be done carefully and an alternate flow release schedule must be developed. The natural integrity of the Grand Canyon must be preserved for all American generations to enjoy.

Sincerely,

Wynne Benti  
Chairman  
Angeles Chapter  
Rivers Conservation Subcommittee  
Sierra Club

Rivers Conservation  
Subcommittee  
Angeles Chapter  
Sierra Club  
3550 W. Sixth Street  
Los Angeles  
California  
90020  
213-387-4287



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FLDR



# SIERRA CLUB

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## Grand Canyon Chapter - Arizona

VERBAL COMMENTS REGARDING  
GLEN CANYON DAM ENVIRONMENTAL IMPACT STATEMENT  
GIVEN AT THE  
SCOPING MEETING OF MARCH 15, 1990

0100

I'm Jim McCarthy, chairman of the Palo Verde Group of the Sierra Club. As such, I represent over 3000 people in central Arizona.

Our Arizona members include backpackers, river runners, bird watchers, car campers, environmental activists, and just plain nature lovers. What we have in common is a love for nature, and especially the Grand Canyon.

I personally am all of the things I have just listed. I also have an understanding of the energy aspects of the Glen Canyon Dam. I graduated from the University of Arizona Mechanical Engineering department with a BSME and am currently employed as a mechanical engineer.

The Sierra Club is not against generating power from the dam. As the panel assuredly knows, the needed changes to the method of operation of the dam will not in any way reduce the amount of energy generated at Glen Canyon. The only issue is when the power will be generated. The utility industry would find it convenient to use Lake Powell as a peaking power machine, rather than using the other alternative peaking power methods.

The Club feels that peaking power generation is a reasonable use of the resource, so long as the dam is managed in a manner that does not put this factor above the other concerns. The water should be released at rates compatible with all the other things that it will affect. The fact that power generation does not have primacy over other factors must be a cornerstone of the EIS or it will be a meaningless document.

The EIS should not be a "Glen Canyon Dam EIS" as it is currently titled; it should be an EIS for the entire downstream riparian ecosystem. It must be completed as a Department of the Interior process. The Park Service and the Fish and Wildlife Service must have totally equal representation in the process. Otherwise the process will be biased towards the traditional role of the Bureau of Reclamation.

This is not to say that the people at the Bureau of Reclamation would deliberately skew the process. We are sure that the Bureau people are professional and honest. However, without completely equal participation by the other disciplines, fairness will be



# SIERRA CLUB

## Grand Canyon Chapter • Arizona

impossible. It is understood that the Arizona Game and Fish department, the very department legally responsible for management of the famous trout fishery in the Canyon, has been excluded from the process. It appears that there has been a violation of the Fish and Wildlife Coordination act, or at the very least, a violation of its intent.

Interim environmentally protective measures must be taken until the final EIS is completed; a minimum flow in the range of 5000 to 8000 cubic feet per second is suggested.

If the currently proposed EIS time schedule is followed, which is considered too brief for thorough impact evaluation, then continued monitoring should be conducted so that the management decision can be reviewed after more data is available.

Thank you for your time and for the consideration of our position.

Jim McCarthy  
Palo Verde Group Chairman  
The Sierra Club

4109 E. Ahwatukee Dr.  
Phoenix, AZ 85044

90-6853

20970

ORIGINAL

PI 3.00

3201 No. 16th Street • Suite 6A  
Phoenix, Arizona 85016  
602 • 277 • 8079

GL

SIERRA CLUB SOUTHWEST OFFICE

0101

Bureau of Reclamation  
attn: Glen Canyon Dam EIS  
PO Box 11568  
Salt Lake City, UT 84147

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March 15 MAR 21 1990	
Date	140

Dear Bureau of Reclamation,

Please accept these comments as part of the record for developing the environmental impact statement on Glen Canyon Dam operations.

The preferred alternative should maximize protection for the entire downstream riparian ecosystem, including beaches, habitat for trophy trout and the endangered humpback chub, vegetation and associated life communities. Maximizing the benefits for any single resource at the expense of others should be avoided. Existing dam operations and proposals from Western Area Power Authority maximize benefits only for power production despite documented adverse environmental and recreational impacts below the dam.

The preferred alternative should set higher minimum flows and should limit river fluctuations to stabilize beach and river conditions for rafting and fishing. The effects of various maximum flows and the rates of change between different flow levels should also be studied. Minimum flows should be at least 5000 cubic feet per second according to comments to the Bureau of Reclamation from Grand Canyon river runners, fishing groups and the National Park Service. Presently, an informal minimum flow is set between 1000 and 3000 cfs, and twice-daily fluctuations can raise and drop the river level as much as 13 feet.

Park and wildlife values must have at least equal priority with power production. According to the Bureau of Reclamation's regional solicitor, the law and Bureau regulations make power generation at Glen Canyon Dam "no more equal than other enumerated purposes", which include wildlife and recreation. Existing dam operations are essentially identical to an alternative to maximize power production at "peak" times of demand during the day, the preferred option for the utilities seeking to market cheap federal hydropower at premium prices.

The Bureau should be studying changes in dam operation, not planning for new dams in the canyon. In addition to changing

-214-



water flows from the dam, the Bureau is also considering building a new dam below Glen Canyon to reregulate the river flows, building new structures around the beaches, and digging a channel up the river to provide low water access to fishing spots. The Bureau is also looking at constraining river running and fishing activities. Their focus should be on the real problem, which is how the dam is operated, not on further altering the canyon and its use by the public.

Energy conservation to reduce peak power demand should be studied. The Bureau is considering building alternative peaking power projects, such as new dams, to compensate for possible flow changes flows at Glen Canyon. They should instead be studying ways to reduce power demand at these peak times, including pricing, energy efficiency, educational programs, or meeting demand from existing facilities.

More time is needed for an adequate EIS. The original schedule announced by the Bureau called for completion of the draft EIS by the end of 1991, but more recent notices make that date the deadline for the final EIS. The Interior Department's Office of Project Review recommended more time, stating that "we are not taking the time to do this document right..." To allow time for new research and public involvement, the Bureau should consider adding at least another year to the EIS schedule.

Interim flows should be set to protect the canyon until a final decision can be made. The Bureau's Glen Canyon Environmental Studies have documented that wildlife and beaches are being threatened now, and their condition may get worse with time. The National Park Service and the U. S. Fish and Wildlife Service have recommended that interim minimum flows between 3000 and 8000 cubic feet per second be adopted for study purposes. These levels should be considered as protective measures beyond the study period until a final decision is reached on more permanent dam operations.

The Bureau's EIS should be closely tied to the WAPA EIS on selling Glen Canyon's power, an EIS agreed to in 1989 during the settlement of a lawsuit brought against the Western Area Power Authority by several conservation groups. The timing and availability of electrical power, which is sold by WAPA to public power entities, is determined by the flow releases at Glen Canyon dam. Any changes in dam operation to protect the environment and recreation resulting from the Bureau's EIS should determine the amount of power available to WAPA, and completion of the WAPA EIS should not stall implementing those protective changes.

The Interior Department should be doing this EIS, not just the Bureau of Reclamation. It appears that the Upper Colorado Region of the Bureau of Reclamation is responsible for the EIS, and presumably will make the final decisions. This does not give equal status to the National Park Service or Fish and Wildlife Service, also Interior Department agencies which have important

responsibilities for Grand Canyon resources. To achieve balance, the Secretary of Interior should be responsible for this EIS with equal involvement from the Bureau, Park Service and Fish and Wildlife Service.

The public comment deadline for this scoping period should be extended. The Bureau's announced deadline for public comments on the scope of the EIS is April 16, 1990, less than three weeks after the last public scoping meeting. Given the level of interest in this issue and Grand Canyon matters in general, and also because this is the first time the Bureau has asked for responses from the general public on this EIS, a longer time period for comments is warranted. Extending the scoping deadline another 30 to 60 days would be reasonable and would allow more people to be notified and to participate.

Thank you for the opportunity to comment.

Sincerely,



Rob Smith  
Southwest Associate Representative

90-21285  
20990

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cc C10081

P.W. 300-  
02

SUVPP  
SOUTHERN UTAH VALLEY POWER PROJECT  
P.O. Box 70  
Payson, Utah 84651

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April 27, 1990

The Honorable Manuel Lujan, Jr.  
Secretary of the Interior  
Room 6151  
C Street Between 18th and 19th Streets, N.W.  
Washington, D.C. 20240

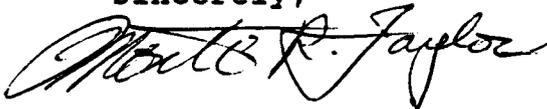
Dear Honorable Lujan:

Southern Utah Valley Power Project (SUVPP) is an interlocal cooperative agency which provides electrical transformation and transmission to the Utah cities of Payson, Springville, Spanish Fork and Salem, and the rural agricultural area of Southern Utah County, Utah.

We are enclosing our statement of concern regarding the Glen Canyon Dam Environmental Impact Statement Scoping Process.

We would appreciate your taking time to read our statement and give some thought and directive to our concerns.

Sincerely,



Monte R. Taylor  
Chairman

MRT/ck  
encls.

cc Dennis B. Underwood, Commissioner  
Bureau of Reclamation  
Washington, D.C.

Roland G. Robinson, Regional Director  
Bureau of Reclamation  
Salt Lake City, Utah

SUVPP  
SOUTHERN UTAH VALLEY POWER PROJECT  
P.O. Box 70  
Payson, Utah 84651

C10081

STATEMENT OF THE SOUTHERN UTAH VALLEY POWER PROJECT  
CONCERNING THE GLEN CANYON DAM ENVIRONMENTAL IMPACT STATEMENT  
SCOPING PROCESS

April 26, 1990

The Southern Utah Valley Power Project (SUVPP) is an interlocal cooperative agency which provides electrical transformation and transmission to four cities and the rural agricultural area of southern Utah County. The service areas consists of a population of approximately 45,000 people.

We are concerned about the purported impacts that the Glen Canyon Dam operations has on the Grand Canyon downstream and upon the downstream users (ie, fish, fisherman, rafters, boaters, etc.). This is why we support the current Glen Canyon Dam Environmental Impact Statement Process. We are also very concerned about those who want to short circuit the National Environmental Policy Act (NEPA) process by attempting to impose interim flows under the guise of an "emergency" situation in the Grand Canyon. There is no scientific support for the assumption that fluctuating water flows from the dam are solely responsible for erosion in the canyon. Research teams must be able to examine the effects of varying flows while they are happening. Premature changes in operation would preclude this vital part of the study.

We are also very concerned about power production from the Glen Canyon Dam because our members' loads are partially covered by resources purchased from the Colorado River Storage Project (CRSP). The CRSP resource covers approximately 35 to 45 percent of our members' total loads. Glen Canyon is really the backbone of the CRSP system and accounts for something on the order of 70% of all the power that can be generated on CRSP dams in the Upper Colorado Basin. That power is valuable to us not merely because it's there but because it is produced at a time when our customers are most in need of electricity. It is the ability of the dams to

produce this electric power at these peak periods that makes the resource valuable. It also allows our members to burn less diesel and natural gas. Hydropower is a clean, renewable electric resource.

C10081

Changing the present power-generation program on such a short notice as proposed by those who would impose interim flows without a complete alternative plan for providing peaking power would jeopardize power supplies during the highest demand periods. If any such changes are eventually made, it must be done in a way that will accommodate the needs of all people of the area.

The electric customers in our member cities and our rural agricultural area are under heavy obligations to repay the federal government for the development of the Glen Canyon Dam and other projects under the CRSP Act. As a result, these power recipients depend on an adequate and timely supply of power from the generating system for which they are currently paying.

Reasonably-priced power delivered when it is needed is vital to the economic development of our communities and rural areas. Any developments that would affect power rates could have a severe negative impact on the farms and communities in this area, many of which are in economic trouble.

When examined in this context, it is apparent that any major changes in the operation of the river will have the greatest economic impact on mostly people of low to middle income levels who reside in the rural areas. An interesting contrast evolves when the economic status of the majority of recipients of Colorado River resources is compared with the income level of consumers of white-water rafting trips down the Grand Canyon. The rafting companies who operate in the canyon are a multi-million dollar industry. We hope that the rural communities will not be required to bare the cost of enhancing the beaches for those who can afford the \$1,500 to \$2,000 per river trip unless the scientific studies through the environmental impact process show what causes the beach erosion and how it can best be controlled.

SUVPP asks the Bureau of Reclamation to consider the complexity of all the issues involved when conducting its study for the Glen Canyon Dam Environmental Impact Statement. The operation of Glen Canyon Dam is a many-faceted operation that involves an intricate system of interconnected relationships. Recipients of Colorado River resources, who have few good choices or alternatives if their power is negatively affected, must be given adequate consideration. The development of an accurate and objective Environmental Impact Statement and the alternatives that it incorporates is a complex undertaking with vast implications for the West and indeed for the entire country.

We realize there are important issues dealing with the ecology and natural resources of the canyon as they are affected by Glen Canyon dam operations. Obviously, these do need to be carefully addressed in the EIS process.

C13281

CONT. # 90-21195  
FLDR # 20990

P103.00. VAL  
60

**Southwestern Electric Cooperative, Inc.**

Clayton New Mexico 88415

216 Main Street  
P.O. Box 369  
Phone (505) 374-2451

**C10054**

April 23, 1990



RECEIVED FOR	
OFFICIAL FILE COPY	
APR 27 '90	
Date	170
Subs. Corresp.	
Date Ans'd	

The Honorable Manuel Lujan, Jr.  
Secretary of the Interior  
Room 6151  
C Street between 18th and 19th Streets, N.W.  
Washington, D. D. 20240

Dear Mr. Lujan,

As a member of the congress from New Mexico and a great supporter of rural electrification and rural economic development the members of Southwestern Electric Cooperative and the rest of rural America have benefited from your diligent work. Now as Secretary of Interior we once again are finding ourselves needing your leadership and support for the proper management and role of the Colorado River Storage Projects.

These storage projects such as the Glen Canyon Dam through its multi purpose charter have greatly benefited the economy of the whole southwest. It has provided water that has made that arid area bountiful for agricultural. It has provided recreational opportunities and created great economic opportunities for the people of Arizona and Utah. The usefulness of these great projects is not only a local issue. The power generated is used hundreds of miles away helping this cooperative provide affordable (not low priced) energy to the least densely populated utility in the United States.

Without the proper management that takes all of the purposes of the storage projects into account (environment, recreation, water and power generation) it would have a detrimental effect on business and agriculture throughout the economically depressed southwest.

Congress currently has H. R. 4498 before it that would completely side step your order for an environmental impact statement on the Colorado River. This bill would completely change the purpose and scope of the storage projects at the expense of millions of people.

We ask as decisions are made concerning the management of the Colorado River that the overall usefulness of these great projects be kept in mind including the electric consumer at the end of the line. That consumer that may not be able to afford to see the Grand Canyon, Glen Canyon Dam or fish in Lake Powell but they will see the benefits of its proper management in their electric bill every month.

Sincerely,

Wid Stevenson  
President

NOTICE: IF YOU DETACH  
ENCLOSURES PLEASE REPLY

CODE NO. \_\_\_\_\_

WS/re

cc: See attached list

-221-

"Owned By Those We Serve"

cc: Representatives: Morris K. Udall  
Don Young  
George Miller  
Denny Smith  
Steve Schiff  
Joe Skeen  
Bill Richardson

Senators: J. Bennett Johnston  
James A. McClure  
Bill Bradley  
Conrad Burns  
Pete V. Domenici  
Jeff Bingaman

Bureau of Reclamation:  
Dennis B. Underwood  
Roland G. Robinson

Governor: Garrey E. Carruthers

C10054

STRAWBERRY ELECTRIC SERVICE DISTRICT

P.O. 300-  
6c

DATE # 90-21304  
20990

P10 3.00  
745 North 500 East, P.O. Box 70, Payson, Utah 84651  
801-465-9273

C10092

W. HOWARD RILEY, CHAIRMAN  
GARY A. AITKEN, CLERK

MAY 1990

115

STATEMENT OF THE STRAWBERRY ELECTRIC SERVICE DISTRICT  
CONCERNING THE GLEN CANYON DAM ENVIRONMENTAL IMPACT STATEMENT  
SCOPING PROCESS

April 27, 1990

The Strawberry Electric Service District is an electric utility district in the State of Utah which provides electricity to two small cities and to the rural agricultural area of southern Utah County. The service area consists of a population of approximately 6,000 people.

We are concerned about the purported impacts that the Glen Canyon Dam operations has on the Grand Canyon downstream and upon the downstream users (ie, fish, fisherman, rafters, boaters, etc.). This is why we support the current Glen Canyon Dam Environmental Impact Statement Process. We are also very concerned about those who want to short circuit the National Environmental Policy Act (NEPA) process by attempting to impose interim flows under the guise of an "emergency" situation in the Grand Canyon. There is no scientific support for the assumption that fluctuating water flows from the dam are solely responsible for erosion in the canyon. Research teams must be able to examine the effects of varying flows while they are happening. Premature changes in operation would preclude this vital part of the study.

We are also very concerned about power production from the Glen Canyon Dam because our load is partially covered by resources purchased from the Colorado River Storage Project (CRSP). The CRSP resource covers approximately 35 percent of our total load. Glen Canyon is really the backbone of the CRSP system and accounts for something on the order of 70% of all the power that can be

generated on CRSP dams in the Upper Colorado Basin. That power is valuable to us not merely because it's there but because it is produced at a time when our customers are most in need of electricity. It is the ability of the dams to produce this electric power at these peak periods that makes the resource valuable. Hydropower is a clean, renewable electric resource.

Changing the present power-generation program on such a short notice as proposed by those who would impose interim flows without a complete alternative plan for providing peaking power would jeopardize power supplies during the highest demand periods. If any such changes are eventually made, it must be done in a way that will accommodate the needs of all people of the area.

The electric customers in our two small cities and our rural agricultural area are under heavy obligations to repay the federal government for the development of the Glen Canyon Dam and other projects under the CRSP Act. As a result, these power recipients depend on an adequate and timely supply of power from the generating system for which they are currently paying.

Reasonably-priced power delivered when it is needed is vital to the economic development of our communities and rural areas. Any developments that would affect power rates could have a severe negative impact on the farms and communities in this area, many of which are in economic trouble.

When examined in this context, it is apparent that any major changes in the operation of the river will have the greatest economic impact on mostly people of low to middle income levels who reside in the rural areas. An interesting contrast evolves when the economic status of the majority of recipients of Colorado River resources is compared with the income level of consumers of white-water rafting trips down the Grand Canyon. The rafting companies who operate in the canyon are a multi-million dollar industry. We hope that the rural communities will not be required to bare the cost of enhancing the beaches for those who can afford the \$1,500 to \$2,000 per river trip unless the scientific studies through the environmental impact process show what causes the beach erosion and how it can best be controlled.

C10092

SESD asks the Bureau of Reclamation to consider the complexity of all the issues involved when conducting its study for the Glen Canyon Dam Environmental Impact Statement. The operation of Glen Canyon Dam is a many-faceted operation that involves an intricate system of interconnected relationships. Recipients of Colorado River resources, who have few good choices or alternatives if their power is negatively affected, must be given adequate consideration. The development of an accurate and objective Environmental Impact Statement and the alternatives that it incorporates is a complex undertaking with vast implications for the West and indeed for the entire country.

We realize there are important issues dealing with the ecology and natural resources of the canyon as they are affected by Glen Canyon dam operations. Obviously, these do need to be carefully addressed in the EIS process.

C10092

P10-200-6C

90-21316 P103.00  
20990 GC C101C1  
12 San Gabriel Court  
Fairfax, California 94930

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April 23, 1990

Manuel Lujan  
Secretary of the Interior  
Department of the Interior  
18th & C Streets  
Washington, D.C. 20240

Re: Glen Canyon Dam  
Environmental Impact Statement

Dear Secretary Lujan:

The Bureau of Reclamation recently visited San Francisco on March 21 for a Scoping Hearing. I felt that my verbal comments should be supplemented by a written statement to you.

I have an interest in the results, and I speak as the Regional Vice President of Trout Unlimited. The present operational mode of the dam with variations from 3,000 to 28,000 cfs during a 24-hour period has destroyed the beaches, riparian, fish and wildlife habitat of the Grand Canyon.

An effort should be made to diminish the yoyo effect but at the same time utilize the power-making aspect of the project, perhaps not to its fullest extent but to the extent possible without further destruction of this National Treasure.

One of the comments made was that a consequence of diminishing the production of the electrical power during peak periods would require supplementation of the grid by fossil fuels. This set off a thought process that dealt with mitigation of the impact of the utilization of fossil fuels, and I arrived at a concept that might well serve to bring the Bureau of Reclamation finally into a conservation mode.

I suggest that the Bureau of Reclamation, with funds from the generation of power, purchase several thousand electric automobiles from the three principal manufacturers in the United States of America. I suggest that these be used in the Denver area which has air quality problems. These vehicles could be

10101

Manuel Lujan  
April 23, 1990

utilized by commuters from an area beyond 25 miles of downtown Denver not otherwise served by public transportation. A further limitation would require that they be used with one or more passengers in addition to the driver and driven from the driver's neighborhood to their work site in downtown Denver. Upon return the vehicle could somehow be plugged into the grid and the batteries would recharge from the system during the period of low utilization, which I understand to be 11 p.m. through 7 a.m. In this way the energy itself could be captured and utilized in a non-polluting way at a time when the mission of reclamation can be fulfilled, which is the delivery of water from Glen Canyon downstream.

Additional thought could be made to utilizing batteries to store energy charged during the 11 p.m. to 7 a.m. period and utilized during the peak period. I also suggest that there be certain prohibitions on the pumping of water from deep wells between the hours of 7 a.m. and 11 p.m. and, if necessary, free energy be provided during the off-peak hours in order to obtain diminution of use during the critical period.

Additionally, homeowners, in order to obtain preferred rates during the summertime, should sign contracts with the power distribution agency to utilize air conditioning to cool their home no lower than 80 degrees F.

In this way it appears to be that the peak can be taken off your high fluctuation of approximately 28,000 cfs and brought down to perhaps 20,000 cfs. On the other hand, you can raise your low of 3,000 cfs to perhaps 8,000 or 10,000 cfs. It is difficult to assess the environment impact that such a leveling of the yoyo would have, but at least it would be the beginning of perhaps new activity by the Bureau of Reclamation by conducting itself in a more environmentally responsible manner as compared to the past.

I would appreciate any comments you have regarding my suggestions.

Respectfully submitted,



Leo T. Cronin  
Regional Vice President  
Trout Unlimited

LTC:jc

NT. # 90-21488  
20990

Carm R. Moehle  
3101 N. Central Ave., Ste. 700  
Phoenix, Arizona 85012  
(602) 234-0025



ARIZONA

610210

May 4, 1990

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MAY 9 '90		
Date	Initial	File
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610209

The Honorable Manual Lujan  
Secretary of the Interior  
18th & "C" Streets, North West  
Washington, D.C. 20240

Re: Glen Canyon Dam Environmental Impact Studies  
Public Comment

Dear Secretary Lujan:

This is presented on behalf of the Arizona State Council of Trout Unlimited. Although many of the 65,000 members of Trout Unlimited have spoken at the Public Comment Hearings previously held, we welcome this opportunity to present our written comments.

The Grand Canyon of the Colorado River, and its environs, are unique among America's natural resources. This Environmental Impact Study must be done with utmost care and confidence. Previous Glen Canyon Environmental Studies and common sense demonstrate that this resource is being degraded, but no one pretends to have the full and complete picture without appropriate further investigation.

It is obvious that the Bureau of Reclamation's historical illegal operation of the Dam, prioritizing the power production and profit motive, is damaging this ecosystem; beaches in the Grand Canyon are washing away; the habitat of endangered species of fish are endangered; a world-class trout fishery is threatened by stranding of fish and drying of spawning beds; the entire food chain is threatened by a constant drying of portions of the river bed, as the water level fluctuates as much as 13 vertical feet in one day; and boating and wading safety is a constant problem. The Bureau of Reclamation's record demonstrates the need for interim flows, such as those proposed by Congressman George Miller of California. While the EIS process must be thorough and complete, and scientists should determine the length of time required for study, it is equally clear that this unique national resource must be protected from the power interests and illegal operation by the Bureau of Reclamation.

Honorable Manual Lujan  
May 4, 1990  
Page two

C10210

~~C10209~~

It is indeed unfortunate that you have sought to present Interior's entire viewpoint through the Bureau of Reclamation. Your suppression of testimony by the National Park Service and the Fish and Wildlife Service is a shame. Heretofore, we had thought the only blatant violation of federal law was that of the Bureau of Reclamation in denying coordination between the Fish and Wildlife Service and the Arizona Game and Fish Department, as required by the Fish and Wildlife Coordination Act. It is apparently your intent to suppress comment from any individual, bureau, department, or agency with any expertise and experience in protecting recreational and environmental interests. We are glad that Congressman Miller did not accept this suppression.

During the Public Comment meetings on the EIS, the American people spoke overwhelmingly of their concern that the Dam be operated as originally mandated by Congress, and that the power interests take last priority. We have always known that the words of the people would fall on deaf ears at the Bureau of Reclamation, and that it was ludicrous to have the Bureau of Reclamation in charge of this EIS. It is even more distressing to find that the Bureau of Reclamation apparently controls the Interior Department. Perhaps legislation such as Congressman Miller's, or redress through the Court system, will be our only chance to check the Bureau of Reclamation's power fervor. We ask you to heed the record created by the people at the Public Comment hearings, and reject the Bureau of Reclamation's "business as usual" mentality on the operation of Glen Canyon Dam.

Very truly yours,



Carm R. Moehle  
Chairman, Arizona State Council

kmv

cc: Roland Robinson, Bureau of Reclamation  
Representative George Miller  
Senator Bill Bradley  
Senator Dennis DeConcini  
Representative Jon Kyle  
Representative Jim Kolbe  
Senator John McCain  
Representative John J. Rhodes, III  
Representative Bob Stump  
Representative Morris K. Udall  
Senator Alan Cranston

ONT. # 96 21512  
LPR # 20990

Dir 3.00  
CC

# UTAH WATER USERS ASSOCIATION

270 South Main  
Duncan Plaza, Suite 101  
Bountiful, Utah 84010  
Telephone: 292-2705

RECEIVED **Eard M. Staker**  
OFFICE **Secretary-Manager**

MAY 9 '90

Date \_\_\_\_\_

010224 115

May 8, 1990

### EXECUTIVE COMMITTEE

- Don A. Christiansen  
President
- Ivan W. Flint  
1st Vice President
- Ralph W. Bird  
2nd Vice President
- Caryl B. Burton
- Laurence Y. Siddoway
- Edward H. Southwick
- Terry Holzworth

Mr. Wayne Cook UC-400  
Glen Canyon Dam-Environmental Impact Statement  
P.O. Box 11568  
Salt Lake City, UT 84147

Dear Mr. Cook

### DIRECTORS

- Clemont B. Adams
- Floyd Baham
- Ralph W. Bird
- DeLaun Blake
- Eugene Blickenstaff
- Paul Brown
- Caryl B. Burton
- Fred Chavez
- Don A. Christiansen
- Clyde E. Conover
- Ronald Duncan
- Phil Edwards
- Jack M. Gardner
- Ivan W. Flint
- Keith L. Hansen
- Robert Hilbert
- George Holmes
- Terry Holzworth
- Lincoln Jensen
- A. Eugene Jensen
- J. Glen Nelson
- Frank O. Nishiguchi
- Marion Olsen
- Nick P. Sefakis
- Laurence Y. Siddoway
- Edward H. Southwick
- Blair Hamilton
- Ronald Thompson
- Mark Walsh
- Waldo Warnick, Sr.
- Lynn Winterton

The development of the environmental impact issue statement (EIS) for the operation of Glen Canyon Dam is a result of substantial pressure from environmentalists and conservation groups. The EIS should not be used to expand the study beyond that of downstream impacts as a result of the operation of the dam.

The management of the Colorado River and operations of Glen Canyon Dam, provides the livelihood for many citizens in the State of Utah, and any changes in these modes will have a very adverse impact on Utah's water allocations.

We believe that any EIS developed must be done so utilizing a complete and accurate data base and the development of specific definition of the problems and the development of specific solutions which are consistent with multiple use objectives.

The EIS must recognize that revenues derived from power production are used for repayment of a portion of the costs for irrigation water development and any changes in the procedure will place an undue burden of repayment on the irrigation water users.

We are of the opinion that conservation storage be recognized and must not be altered or changed in a modification plan.

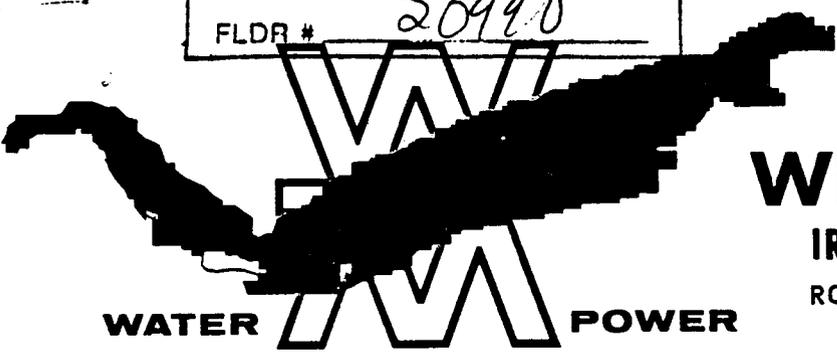
In conclusion, we recommend the rejection of the demand by environmentalists to change the present flow patterns and maintain the existing operation and flows while the EIS is being prepared.

If the Utah Water Users Association can be of assistance, please let me know.

Sincerely,  
*Don A. Christiansen*  
Don A. Christiansen  
President

CONT. # 90018467  
FLDR # 20990

P10.300-  
CC.



**WATER POWER**

# WELLTON-MOHAWK

## IRRIGATION AND DRAINAGE DISTRICT

ROUTE 1, BOX 19 WELLTON, ARIZONA 85356

TEL: (602) 785-3351

April 17, 1990

The Honorable Manuel Lujan, Jr.  
Secretary of Interior  
Room 6151  
C Street between 18th & 19th Streets, N.W.  
Washington, D.C. 20240

Re: Glen Canyon Dam EIS

Dear Secretary Lujan:

RECEIVED BUREAU OF RECLAMATION OFFICIAL FILE COPY		
MAY 02 '90		
Date	Name	To
		775
Special Comment		
Case No.		

The activities of the parties currently in opposition to the historic operation of Glen Canyon Dam on the Colorado River appear to be getting out of control. It is my understanding that Congressman George Miller has a bill, H.R. 4498, designed to place immediate operating restrictions upon Glen Canyon Dam. This is in direct opposition to the NEPA process which was instituted by Congress of which Congressman Miller is a member. It seems appropriate that Congress should abide by its own acts.

I speak with twenty-four years of experience as a person directly involved with the day to day use of the power and water resources provided by the Bureau of Reclamation through the Colorado River reclamation system of structures. It goes without saying that the operation of the system of dams, power plants, canals, etc. on the lower Colorado River is complex, but it has been developed through the wisdom of literally hundreds, possibly thousands, of highly qualified engineers, water leaders at the state, federal and local level, court actions at the highest level in the land and has stood the test of time in meeting the needs of the people it serves.

This system has become the life blood of some 22 million residents of the seven Colorado River Basin states who depend very heavily on a resource that is already strained, to supply the daily demands of the people for power and water. Taking away any portion of this resource, either by exclusion or modification, will immediately place a severe impact on the day to day needs of this great mass of people.

Changing the method of releases from Glen Canyon Dam will not relieve the demand for power from the system. The demands will not go away and will have to be immediately replaced since they are real power demands. This will require fossil fuel replacement which will be costly to the consumer and even more costly in further degradation of an already overburdened air quality.

CO7390

April 17, 1990

Page 2

The Honorable Manuel Lujan, Jr.  
Secretary of Interior  
Room 6151  
C Street between 18th & 19th Streets, N.W.  
Washington, D.C. 20240

Re: Glen Canyon Dam EIS

A broad overview of this controversy seems to focus on the fact that a very small number of special interest groups--namely river rafters--are being impacted financially, and are using environmental issues to resolve personal problems to the detriment of the millions who use the river system for their day to day existence.

Probably of even greater significance, in relation to the Glen Canyon Dam release problem, will be the precedent that will be set by any compulsory operational changes which could easily initiate a domino affect that would ultimately destroy much of the whole river resource.

We do not wish to appear insensitive to true environmental issues, but there is necessity to weigh the affects of our actions on both sides. The existence of life itself must compromise environmental quality and we can't have perfection even though some would make that the objective.

Congress has established the NEPA process. Let's let it work. The EIS should give some solid evidence as to what damage, if any, is being done by the operation of Glen Canyon Dam. To mandate a change in operation immediately, essentially implies, the question has already been answered and the EIS has no purpose. This is not true.

We strongly oppose H.R. 4498 and urge that every effort be made to defeat this ill-founded action.

Thank you for your consideration in this very serious controversy. This decision will have long term repercussions affecting millions of citizens in the Southwest.

Sincerely yours,

WELLTON-MOHAWK IRRIGATION  
AND DRAINAGE DISTRICT

  
C. L. Gould  
Manager

007390

CLG:mw

cc: See Attached List

WELLTON-MOHAWK IRRIGATION AND DRAINAGE DISTRICT

Mailing List

Dennis B. Underwood, Commissioner  
Bureau of Reclamation  
Department of the Interior  
Room 7654  
C Street between 18th & 19th Streets, N.W.  
Washington, D.C. 20240

Roland G. Robinson  
Upper Colorado Regional Director  
Bureau of Reclamation  
125 South State Street  
P. O. Box 11568  
Salt Lake City, Utah 84147

The Honorable Morris K. Udall  
235 Cannon HOB  
Washington, D.C. 20515-0302

The Honorable Don Young  
2331 Rayburn HOB  
Washington, D.C. 20515-0507

The Honorable George Miller  
2228 Rayburn HOB  
Washington, D.C. 20515-0507

The Honorable Denny Smith  
1213 Longworth HOB  
Washington, D.C. 20515-3705

The Honorable J. Bennett Johnston  
SH-136  
Washington, D.C. 20510

The Honorable James A. McClure  
SH-309  
Washington, D.C. 20510-1201

The Honorable Bill Bradley  
SH-731  
Washington, D.C. 20510-3001

The Honorable Conrad Burns  
SD-183  
Washington, D.C. 20510-2603

The Honorable John J. Rhodes III  
510 Cannon HOB  
Washington, D.C. 20515

The Honorable Bob Stump  
211 Cannon HOB  
Washington, D.C. 20515

Senator John McCain  
SH-210  
Washington, D.C. 20510

The Honorable Dennis DeConcini  
SH-328  
Washington, D.C. 20510

The Honorable Jon Kyl  
313 Cannon HOB  
Washington, D.C. 20515

The Honorable Jim Kolbe  
1222 Longworth HOB  
Washington, D.C. 20515

Colorado River Resources Coalition  
110 Social Hall Ave.  
Salt Lake City, Utah 84111

007390

CONT. # 98015380  
FLOR # 20990  
Main Office  
7 North Cascade  
P.O. Box 472  
Montrose, Colorado 81402  
(303) 249-1978

**ORIGINAL**  
**Western Colorado Congress**

Field Office  
1911 Main Ave.  
Suite 234  
Durango, Colorado 81301  
(303) 259-3583  
PFD 3.00-  
GC

16 April 1990

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Subs. Corrected _____		
Date Added _____		

Glen Canyon Dam EIS  
U.S. Bureau of Reclamation  
P.O. Box 11568  
Salt Lake, City, UT  
84147

Western Colorado Congress (WCC) is a grassroots citizens organization of approximately 1200 individuals dedicated to preserving Western Colorado's natural environment and high quality of life. Many of WCC's members enjoy the Grand Canyon by either hiking, fishing, or rafting it each year. Therefore, WCC is extremely concerned about the negative environmental impacts that present day operations of Glen Canyon dam are having upon the ecosystem in Grand Canyon National Park.

The future of the Grand Canyon is dependent upon the completion of a thorough and scientifically valid Environmental Impact Statement (EIS) that studies Glen Canyon dam as well as the entire Colorado River Storage Project's effects upon Grand Canyon National Park. The Secretary of the Interior should require the Bureau of Reclamation to allow adequate time for the EIS process to occur. This will take longer than the currently proposed 1991-1992 EIS deadline. Adequate time is necessary to allow for valid scientific field studies and the ensuing review of data. The EIS needs scientific integrity. If the Bureau shortcuts the EIS process, they will publicly display their traditional disdain for environmental values and their protection of the status quo, the water and power users, thus failing their "new mission" as resource managers.

A complete EIS process, not a sugar coated one, is necessary in order to understand the river's ecosystem and the negative impacts Glen Canyon dam has had and will have upon the Grand Canyon if present day operations of the dam continue. The Colorado River is out of equilibrium due to severe fluctuations in river flows from Glen Canyon dam. Beach erosion and riparian habitat loss are occurring at a rapid rate. Scientists need consistent and stable flows for a minimum of two to three years to study their effect upon the Grand Canyon. WCC believes that stable flows and sediment reintroduction over time will reduce beach erosion and bring the Colorado River and its riparian habitat closer to equilibrium.

Clearly, fluctuating flows are destroying the Grand Canyon's ecosystem. Three of four endangered species have perished in the Grand Canyon since construction of the dam. The present and continued operation of Glen Canyon dam will probably cause the demise of the only remaining endangered species, the humpback chub. This would be a major violation of the Endangered Species Act. The EIS should explore the possibility of raising the temperature of water being released from the dam in order to improve humpback chub habitat.

WCC is opposed to any humanmade structural fixtures below the dam to mitigate the dam's negative impacts on the Grand Canyon.

Water rights are not an issue here. Changing Glen Canyon dam operations will not violate the 1922 Colorado River Compact. The issue is how the water behind Glen Canyon dam is released -- fluctuating flows for peaking power (as it presently is used), or as stable flows. This gives Glen Canyon Dam two choices for future operations: peaking power or the protection of the Grand Canyon's ecosystem.

If power production is given priority over the Grand Canyon's ecosystem, electrical power can be marketed at the lowest possible rate, providing more power at a lower price to the consumer. Unfortunately, this means Glen Canyon dam will release water as fluctuating flows which will erode riparian habitat and beaches, decrease trout productivity, jeopardize endangered species, decrease the fishing and rafting experience of visitors, increase the ecosystem's instability and precipitate its eventual demise. The above is the result when power production is given priority and this scenario should not be the preferred alternative in the EIS.

If the Grand Canyon's ecosystem is given priority over power production and stable flows are mandated, other benefits should be seen. Stable flows will stabilize beaches and riparian habitat. Trout reproduction will improve and endangered species habitat will be maintained or improved. Fishing and rafting safety and the overall experience will improve. The only negative impact will be a decrease in power production and its marketability due to an increase in power costs. The EIS should study stable flows in the Grand Canyon to see if these results do indeed occur as they are predicted.

If stable flows increase power generation cost and raises electrical rates for consumers, but protects the Grand Canyon's ecosystem, it is a small price to pay.

**C09453**

Finally, WCC believes that the integrity and the preservation of the Grand Canyon's ecosystem and the recreational opportunities it provides for millions of Americans each year should be given priority.

Sincerely,

*Fred Wetlaufer*

Fred Wetlaufer  
President  
Western Colorado Congress

cc: Representative Miller  
Senator Bradley  
Representative Campbell  
Senator Wirth  
Senator Armstrong

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# WESTERN RIVER GUIDES ASSOCIATION



Serving The Industry Since 1978

360 South Monroe, Suite 300 -- Denver, CO 80209 -- (303) 377-4811 - ~~(303) 377-4865~~ 377-4865



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**Executive Director**  
Karen W. Buxton

May 3, 1990

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Glen Canyon Dam Environmental Impact Statement  
U.S. Bureau of Reclamation  
P.O. Box 11568  
Salt Lake City, UT 81417

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MAY 4 '90

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Dear Sirs;

This statement is presented as the official comments of the Western River Guides Association on the scope of the Glen Canyon Dam Environmental Impact Statement and are intended to supplement and support verbal comments presented in Phoenix on March 17 and in Flagstaff on March 16 and April 3, 1990. The following comments understate the rhetoric and concentrate on issues of substance and process.

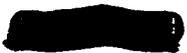
Member outfitters of the Western River Guides Association provide the American people the opportunity for joy and personal enrichment through experiencing the Grand Canyon in a unique way, from the bottom up. Naturally we are concerned about the significant reduction in camping beaches and we are concerned that we have adequate water to operate our tours safely.

And we are also concerned about the impacts to the endangered and threatened species including the Colorado humpback chub, peregrine falcon, and bald eagle. And we are concerned about the trout and maintaining safe access by the fishermen.

## OVERVIEW

It must be understood throughout the process that the overriding objective is achieving adequate protection for the downstream environmental and recreational resources in Glen Canyon National Recreational Area and Grand Canyon National Park from continuing significant impacts of the operations of Glen Canyon Dam. It must be understood that there will be real dollar costs to society to achieve this objective and that those costs are a natural and acceptable tradeoff our society has agreed to assume in order to preserve the intrinsic value, albeit less tangible, inherent in wilderness, and not just any wilderness, but the Grand Canyon.

In order to achieve this objective it is imperative that we have a credible Environmental Impact Statement and the Bureau of Reclamation must bend over backwards in its vigilance in adhering to the National Environmental Policy Act. Special interests, our own included, will continue to apply considerable pressure to influence the ultimate policy outcome in the interest of the perceived "greatest good for the greatest number." This is good. This is fundamental to our democratic system and our quest for truth. And your salvation from succumbing to this pressure and allowing it to tarnish to results is always to return to the spirit and letter of NEPA, and the veracity of the science which provides its foundation.



#### SUBSTANTIVE INPUT

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1. The preferred alternative must provide substantial protection, mitigation to, and restoration of the entire riparian ecosystem downstream from Glen Canyon Dam integrating the resource requirements of beach stabilization, endangered fish species, trout, vegetation, etc.
2. The preferred alternative must allow for safe and enjoyable public access by river in Glen Canyon National Recreation Area and Grand Canyon National Park and protect recreational opportunities for whitewater rafting and fishing downstream from Glen Canyon Dam. In the case of rafting this means preserving the beaches for camping and providing a minimum acceptable flow that allows passage of the rafts throughout the rafting season. In the case of fishing this means providing adequate flow all year to allow access upstream of Three Mile Bar and adequate flow to cover the spawning beds during spawning season.
3. The final Environmental Impact Statement must recognize the primacy of environmental and recreational values downstream from Glen Canyon Dam over the maximization of power production. Although the production of power as incidental to other values is already established in law, Glen Canyon Dam has been operated as though the maximization of revenues from power production had primacy over all other values with the exception of water storage and delivery requirements between the Upper and Lower Basin states and Mexico.
4. Through the E.I.S. process the environmental impacts of maximum flows must be fully understood along with the impacts of minimum and fluctuating flows.
5. All structural alternatives which would place physical structures such as a reregulation dam or beach protection devices inside Glen or Grand Canyons or so unreasonable as to warrant no study as alternatives.
6. Every reasonable operational alternative which would alleviate environmental impacts downstream from Glen Canyon Dam must be

studied, understood, and advocated before structural solutions are sought.

7. The full range of energy conservation alternatives ~~must~~ be studied, understood, and advocated before structural solutions are sought.

When it comes to the Grand Canyon I disapprove of technological fixes to a technological problem. We must focus on the operations of the dam to find a solution. Otherwise we compound technological problems on top of more technological problems and a chain reaction of Environmental Impact Statements with every new major federal action generated through a misguided insistence on structural solutions.

It was our understanding in late January that the E.I.S. would focus on operational solutions. Then we got word that the Western Area Power Administration leaked the draft scoping workbook to the Colorado Energy Distributors Association and they insisted on a full array of structural alternatives. There is one basic reason public power is insistent on structural solutions: they have no intention of supporting any deviation from the present course of operating the dam for the maximization of peaking power. With the National Park Service and the U.S. Fish and Wildlife Services operating on a higher ethical plane, our side was not provided the same opportunity to influence the scoping workbook.

If a full array of structural alternatives is to be considered including a new dam and cement beaches, then at the very least I must ask rhetorically, why shouldn't we consider a destructural alternative, or allow the river to bypass the dam. Obviously we can't do that because it would violate the Colorado River Basin Project Act of 1968 which predated NEPA by one year. But I object vehemently to public power asking us to violate the Park Organic Act of 1916, which predated NEPA by 53 years.

No structural alternatives should be considered before an array of alternatives which would focus on energy conservation measures. It seems ludicrous to consider costly new power facilities before we implement energy conservation incentives, programs, and structural improvements which would decrease demand for peaking power and increase efficiency in the way we use power today.

8. The potential economic impacts of the no change alternative on the fishing and rafting industries and local economies must be studied, factored into the economic analysis, and reported in the final Environmental Impact Statement.

#### PROCEDURAL INPUT

1. The time frame for producing a final Environmental Impact

Statement must be based on balancing the needs of science for producing a credible, supportable policy outcome while recognizing that significant resource degradation below Glen Canyon Dam is ongoing right now and will continue daily until we have a policy decision that adequately protects downstream resources.

The present time frame for producing a final E.I.S. by the end of 1991 is woefully inadequate for producing a credible product and is based almost entirely on political, not scientific, considerations. 10289

2. You must institute interim flows which have the greatest likelihood of mitigating further impacts to downstream environmental and recreational resources during the preparation of the E.I.S.

In Phoenix on March 15 I urged you to implement interim protective flows due to the likelihood that the EIS would be extended one year beyond your announced time frame. I asked for implementation no later than the end of 1991 and indicated that interim flows would take the pressure off producing a final EIS in what the scientists have generally conceded is an absurdly short time period.

I amended my position on interim protection in Flagstaff on April 3, 1990, announcing that the Grand Canyon doesn't need protection at the end of 1991, it needs it today.

The Grand Canyon needs protection today for two primary reasons: (1) There is little argument that the operations of Glen Canyon Dam are significantly impacting downstream resources. These impacts are known and supported through considerable scientific and anecdotal evidence. (2) I think you would agree there is little likelihood that we will have a final policy determination on the operations of Glen Canyon Dam by the end of 1991. The timetable is ambitious and unrealistic and I wouldn't be surprised if you granted the one year extension that many have called for in these hearings. More importantly, everyone expects the final solution to be tied up by procedural and court challenges once the final results are published. Whichever constituency perceives a loss will sue and you could possibly be sued by both sides. Litigation will press for immediate injunctive relief to implementing the EIS and the operations of Glen Canyon Dam will continue to be operated to maximize power production to the detriment of the environment for Lord knows how many years.

I have resisted and continue to resist naming any specific flows which in my estimation would adequately protect the Canyon. I support the EIS process which is designed to determine the best long term operating strategy to protect the Canyon. The Secretary should go to the scientists, perhaps utilizing the National Academy of Scientists, and say, "Give me your very best estimate

right now of flows that would protect downstream resources, dollars be damned, and then get to work on improving those estimates."

We do know that recent historical flows, which are very near the same flows that maximize power production, have been severely detrimental to the Canyon. It would follow, therefore, that flows that deviate toward the opposing extreme from the status quo might be the likely flows to look at. If I were the scientist queried by the Secretary, understanding that my credibility was at stake, I would say, "If you really mean dollars be damned, then the flows that are most likely to protect the Canyon would be steady state flows with seasonal variation that approximate virgin conditions before the dam." Clearly the interim flows would have to stay within water delivery and flood control requirements, but power revenues would continue to pour in even under baseloaded conditions and we owe nothing to the short term maximization of power profits while irreplaceable resources are damaged over the inevitable course of conducting the EIS and probable course of prolonged litigation.

The Secretary of Interior has the authority and the responsibility to operate Glen Canyon Dam in a manner that will protect downstream resources ... after all, through default, if not dereliction, the Secretary has assumed the authority to operate the dam to the detriment of the environment. He should be able to assume the same latitude to operate it in a manner to protect the resource now that the impacts are known.

Public power has and will continue to challenge that interim flows are an invasion of the NEPA process because NEPA says preserve the status quo until the studies are completed. Public power is thinking of preserving the status quo because that allows the continued maximization of power production. When public power raises this argument of NEPA invasion, they are coming from a position of being self serving, not from a position of environmental preservation.

There is a simple answer to this invasion of NEPA challenge. Don't look at maximum power production as the status quo. That's not what we have to preserve. Look at the status quo from the environmental perspective; after all, we are conducting this process according to the National Environmental Policy Act. The thing we are preserving is the resource, not the maximization of public power.

It has been argued that interim flows would disrupt baseline environmental studies which are the key to judging possible solutions and interim flows might unintentionally invalidate the scientific inquiry the EIS process depends on for its validity. The flood releases of 1983 through 1985 also disrupted the baseline studies and that is the primary reason we have the Glen Canyon Environmental Studies, Phase II. What is the response of science to the hydrological disruption during the Phase I

studies? Appropriately, to come up with a very thorough program of flows for the purpose of studies.

Whatever interim flows are arrived at for protecting the Canyon, it is not my intention to in any manner invalidate the science which provides the foundation to the EIS process. The scientists must be allowed to do anything they want with the flows that support their scientific method and support documentation of what flows do the most damage and what flows will be most beneficial to the Canyon.

3. The Glen Canyon Dam Environmental Impact Statement must be fully coordinated with the Western Area Power Administration's Marketing Criteria Environmental Impact Statement as early on in the process as possible, and the public must be fully apprised of and involved in the process of how this need is accomplished.

4. The policy document that results from the final E.I.S. must be an adaptive document, meaning that as continued scientific monitoring brings to light new information on how better to manage the operations of Glen Canyon Dam to protect downstream resources, changes can be made as amendments to the long term operating criteria. However, all amendments to the operating criteria must be made only with public participation.

At the heart of the long term operating criteria would be this concept of adaptive management. Rather than being locked into a rigid hierarchy of management and operating criteria to protect economic or resource values--values which are constantly shifting, subject to ever increasing knowledge and in need of new perspective--adaptive management takes the flexible approach. Long term power contracts would be inappropriate given this approach to adaptive management.

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#### CONCLUSION

"Man now possesses the capability to maintain, restore, and even enhance the resources downstream from Glen Canyon Dam through wise releases of water from Glen Canyon Dam. Such a goal is not unreasonable for one of the world's greatest natural treasures. The profound wonder of the Colorado River through Grand Canyon, with its ability to humble, heal, and illuminate the human experience through a vibrant encounter with the natural world, will be even more important to future generations than it is today." (Steven Carothers)

Sincerely,



Robert Elliott  
Vice President