

VIII. Organization – Environmental

Introduction

Beyond broad expressions of support/ nonsupport or project approval or disapproval, the comments of environmental groups on this DEIS can generally be summarized as described below.

Issues Raised

- ❑ Nearly one-third of the comments were in one of two areas: (1) perceived shortcomings in alternatives formulation and/ or selection and (2) water quality impacts and analysis.
- ❑ Also frequently stated was a need for additional or integrated endangered species recovery methods or measures and a need for Basin-wide planning and impacts analysis.
- ❑ Other issues ranged from criticism of the impacts analyses in various resource areas to a need for a revised or programmatic DEIS, and such concerns as those regarding project costs, dam decommissioning, conservation, and others.

Organizations in this Section

Citizens Progressive Alliance
Friends of the Animas River
Living Rivers
San Juan Citizens Alliance

Mr. Rick Gold
 Regional Director
 Upper Colorado Region
 Bureau of Reclamation
 Salt Lake City Utah

December 4, 2002

COMMENTS of the CITIZENS' PROGRESSIVE ALLIANCES on the NAVAJO RESERVOIR OPERATIONS DEIS, DES-02-35, filed with EPA on September 3, 2002.

We could write a book on the inadequacies of this EIS, for, shamefully, it appears to aspire to new heights in data manipulation so as to achieve a predetermined outcome. That outcome is of course the re-operation of Navajo Reservoir so that the Animas-La Plata Project, just 60 miles away, can be constructed through the appropriation of untold hundreds of millions of dollars from the American public. Additionally, it appears that this EIS is being used as a policy instrument to validate a wide variety of new and speculative water uses in the San Juan River Basin without serious regard to their impact on endangered species or Colorado's depletion rights under the Colorado River Compact.

But we will write no book. Instead, we will concentrate on three long-established public policy requirements which this EIS simply ignores or defies in strangely abusive ways. They are: the *Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies*, the Department of Interior's own published policy on Indian water rights claims, *Criteria and Policy for Indian Water Rights Settlements, 55FR9223*, and the *Endangered Species Act*.

Principles and Guidelines:

The *Principles and Guidelines (P&G)* were established, and thereby took on the force of law with regard to federal water planning activities, in 1983 by President Ronald Reagan. In his summary to the document President Reagan had this to say about their purpose, "*these principles are intended to ensure proper and consistent planning by Federal agencies in the formulation and evaluation of water and related land resources implementation studies.*" Signal among its many requirements is that "*a plan recommending Federal action is to be the alternative plan with the greatest net economic benefit consistent with protecting the Nation's environment.*" The Bureau of Reclamation ignored this requirement in its recent Animas-La Plata EIS and, grown bold in its defiance, does so again. These requirements were established to eliminate the kinds of insupportable, special interest pleadings found in this EIS. Some examples:

1. On page III-35, the Bureau announces that water revenues from the sale of Ute water developed through ALP, which the re-operation of Navajo Reservoir makes possible, "could range from approximately \$4,532,000 to \$39,660,000." Left unsaid is the fact that there is no demand for the Indians' 66,000 acre-feet of ALP water. The two Ute Tribes, comprising about 3000 people, already have 150,000 acre-feet from earlier federal efforts. Indeed, the water they already have combined with what they will get if ALP is built would be enough water to satisfy the residential needs of well over 2,000,000 people.

Presently, La Plata County, where ALP water is to be stored, has a population base of about 44,000 people. The state's official web site projects a population of maybe 66,000 in 2025. In fact, Region 9, which encompasses all of La Plata, Dolores, Archuleta, San Juan, and Montezuma Counties, has a combined population of 89,000 citizens. The region is projected to have maybe 125,000 people by 2025. It is blatantly skewed to say the Utes will realize any sales of ALP water in the near term based on the state's own population projections which are overly optimistic, having been developed prior to the recent economic recession which hits regions dependent on recreation and tourism the hardest.

Maybe by the 23rd or 24th century there will be some regional demand for ALP water, but not in this century. What is more, these sort of flimsy and exaggerated claims of benefits are exactly what the

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ORE1-1 Comment noted.

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P&G were created to stop. The Bureau has taken the position that the P&G do not have to be observed because "they're doing it for the Indians". This is a self-serving *ad hominem* at its very best, for:

- A. neither the Navajo nor the Utes can reasonably tell whether that which the Bureau proposes in either this or the ALP EIS is best for them since no comparative analysis is done weighing costs against benefits within an array of reasonable alternative as required by the P&G and NEPA.
 - B. the American people, who are picking up the tab for all this, have been denied reasonable access to the decision process on both this and the ALP EIS. The shibboleth used by BOR is that these are Indian Trust responsibilities nullify the public's right to know and intervene in its own behalf. The suggestion that the public's interests are inimical to Indian Trust interests is gallingly racist, to put the kindest light on it. Surely, there is common ground, and it is our opinion that the best approach to its discovery is through the clear and rigorous economic evaluations required in the P&G.
2. On page III-36, the BOR continues its discussion of purported Indian benefits resulting from Re-operation of Navajo Reservoir. This time, the Navajo Nation is deemed to be the beneficiaries of the Bureau's largess. Re-operation will allow, among other things, depletion of another 120,000 acre-feet of water to complete the Navajo Indian Irrigation Project (NIIP). Predictably, according to the BOR, there are only benefits: the Navajo could realize as much as \$40 million dollars in gross crop revenues from the expansion of the project. The Bureau also posits that the Navajo will also realize some benefits from the Bureau's on going construction of the project, which, incidentally, has been continuous since the 1960s. The estimated costs to complete are another \$400,000,000 to the American taxpayer. If the BOR were using the P&G as required by federal directives and their own internal NEPA Handbook, which we are told has been gathering dust in draft form for over 4 years, they would have to admit that there were indeed tremendous national costs associated with the above, and these costs must be compared to the benefits. Chief among them are the following:

- A. What will be the cost to the nation from the degraded water quality resulting from irrigation return flows. Include salinity, reduced hydro-power production at downstream federal facilities, and green gas emissions from replacement power, assuming the likelihood of fossil fuel replacement. This is never discussed in the EIS except in relationship to reduced cold water flows resulting from reservoir re-operation. ALP irrigation was dropped from that project for a variety of reasons, not least of which was economic infeasibility and further degradation of San Juan river water quality in New Mexico, which already exceed EPA's safe drinking water standards. Might not these same considerations apply to NIIP? What impact will irrigation return flows have on endangered species, one of the purported purposes of re-operating Navajo Dam and Reservoir. Please speak directly to the expected increases in mercury and selenium. What impact might these increases have on diverters downstream of Navajo Reservoir from a human health standpoint?
- B. What will be the cost to the nation in terms of federal price support payments by the addition of another 56,000 acres of crop land? Presently the Navajo are the largest individual recipient of these payments in the United States, over \$7,000,000 between 1996 and 2001. Even so, they recently had to ante up \$10,000,000 to cover operating deficits from NIIP. What assurances do we have that the addition of more irrigation will not result in greater operating deficits from NIIP to the detriment of the Navajo people?
- C. What has been the cost to the nation of the ongoing NIIP construction program which dates back to the early 1960's? Compare those costs with the benefits being careful to distinguish the benefits to the non-Indian contractors who operate the project and the Navajo people. Compare expansion of the project with an alternative that would allow the Navajo to lease some or all of NIIP water downstream to lower basin users. This is an absolute requirement if we are not to do a further injustice to these people under the rubric of Indian Trust obligations. Shame!
- D. Why does the BOR presume, indeed state, that this EIS will allow the completion of NIIP? This project was started before NEPA became law. It has escaped public scrutiny through a long series of Environmental Assessments and resulting declarations of no significant impact (FONSI). This policy borders on a national disgrace given what we know about the project and its dubious benefits to most Navajo. Any expansion of the project must undergo the most rigorous compliance with the P&G and

- ORE1-2 Please see the response to General Comment 31. Agriculture support programs are legislated by Congress and administered by the Department of Agriculture with specific intents and purposes. It is beyond the intent of this EIS to determine the impacts of these federal agriculture support programs.
- ORE1-3 Please see the responses to General Comments 20f and 23. The water quality impacts associated with the ALP and NIIP Projects are detailed in their respective EISs.
- ORE1-4 It is beyond the scope and intent of this EIS to determine the profitability of farm enterprises or the impact of Federal agricultural programs.
- ORE1-5 Review of the NIIP construction program and a comparison of NIIP-related benefits is beyond the scope and intent of this EIS.
- ORE1-6 An EIS was completed in 1976 on the NIIP Project and Biological Opinions were prepared in 1991 and 1999. NEPA and ESA compliance has been updated over the years. Flow Recommendations can be met with full development of NIIP; the depletion table in the Navajo Operations EIS includes projects and water uses that can be completed and still allow Flow Recommendations to be met.

NEPA. In fact, the Bureau holds out the real possibility, at page II-11, that, through its good efforts in the San Juan Basin Recovery Implementation Program, even more water can be diverted. These Indian diversions include water for the "Navajo-Gallop Project, the Jicarilla Apache Nation Navajo River Water Development Plan, restoration of the Hogback Project, and development of up to approximately 38,000 acre-feet per year direct diversions provided for in the Colorado Ute Settlement Act that are not a part of the ALP and Dolores Project." What? A thorough explanation needs to be made in the EIS as to how these can all be accommodated through the re-operation of Navajo Reservoir or the Bureau's nonsensical "adaptive management plans" while still protecting endangered species. A table that quantifies these claims must be included in the EIS.

E. Sensitivity analysis must be done on all construction cost estimates for NIIP, for BOR is highly regarded for its ability to underestimate costs in the interests of acquiring public funding. For example, the Dolores Project and the Dallas Creek Project are over 300 percent in excess of their original cost estimates. We made this same request in the ALP EIS and it was simply ignored. It should not be, for the word on the street is that new cost estimates on ALP now set its costs at \$700,000,000 and climbing. Only a year ago the BOR was advertising that the project would cost a mere \$248,000,000. Convincing explanations are due in these times of tremendous federal budget deficits.

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Finally, you will forgive us, we trust, if we cannot help wondering out loud whether this EIS and its companion, the ALP EIS, are not more about rewarding powerful water development interests in Colorado and protecting the Bureau's long-term budget in the Upper Colorado Region than they are about satisfying legitimate Indian water rights, saving endangered species, and protecting "water and related resources in an environmentally and economically sound manner" as proclaimed in BOR's Mission Statement.

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Criteria and Policy for Indian Water Rights Settlements, 55FR9223

The *Policy for Indian Water Rights Settlements* is the result of the desire on the part of former President George H.W. Bush to bring some logic and reasonable standards to Indian water right settlement negotiations. The Department of Interior's policy implementing the President's directive was published in the Federal Register on March 12, 1990. It constitutes written notice to the public on how the Department and its agencies, will conduct Indian water right settlement negotiations. The BOR must explain why it thinks it has the authority to disregard that policy in both this and the ALP EIS. One of the commitments made in *55FR9223* is that Indian settlements involving a single river system, in this case the San Juan, will be done so as to simultaneously evaluate and negotiate all Indian claims on that river system. Obviously, the clear intent is avoid the dreaded unintended effect through piecemeal negotiations, awards, and settlements and taxpayer costs of undoing what was mistakenly and done through ignorance and bureaucratic imperiousness.

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Therefore, to comply with long-standing federal policy, the BOR must rewrite the present Navajo Re-operation EIS as a programmatic EIS in which all potential Indian claims are identified and examined in relation to ESA requirements. If those prospective rights can not be met while protecting endangered species, then a full discussion of how those obligations will be met given New Mexico's share of the Colorado River under the Compact must be presented. If existing non-Indian uses must be curtailed to satisfy legitimate Indian claims in New Mexico, then so be it. But it should not come as a thunderbolt. The present procedures, which the BOR seems hell bent on pursuing, hold out the real possibility that racial and cultural enmities will be unnecessarily exacerbated, if not encouraged. The resources of the Colorado River system are real and regrettably finite. The BOR's clucking nonsense in the EIS about a silver bullet it describes as "adaptive management plans" does not help the people of this region come to grips with this reality.

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Similarly, the EIS is fiercely deficient in quantifying the extent of conditional water rights on the San Juan sub-basin in Colorado. Quantitatively, even now they exceed 100,000 acre-feet in potential annual depletions. But they could exceed this by many times since Colorado still claims additional depletion rights of between 800,000 acre-feet and 1,300,000 acre-feet. We realize that it is impossible to fully gage the impact of water rights which have not been developed. Yet, these must be recognized and factored into reservoir operations, for if these rights are developed, they will unquestionably alter the operations and

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ORE1-7 Conducting sensitivity analysis on all construction cost estimates for NIIP is beyond the scope and intent of this EIS.

ORE1-8 The only action that Reclamation is analyzing in the EIS is the implementation of the Flow Recommendations. Also, please see the response to General Comment 18f.

ORE1-9 Please see the response to General Comment 19.

ORE1-10 Please see the responses to General Comments 16, 17, 18a, 18f, and 18k.

inflow into Navajo Reservoir. Then, what? This EIS provides no clue except for those elusive "adaptive management plans". The state of Colorado could provide needed help by developing its best "guess-timate" of the long-term depletions in the San Juan sub-basin. This it has not been done.

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Tables showing existing conditional water rights in Colorado on the San Juan sub-basin by drainage, along with complementary tables showing the best estimates of what and where future water right claims may occur is absolutely essential. This EIS just ignores Colorado's constitutional right to develop its water and the impact these depletions will have on the inflow to Navajo Reservoir. They must be discussed in relationship to endangered species recovery.

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Endangered Species Act:

The *Endangered Species Act* in combination with or as the result of the proposed construction of ALP, are supposedly the driving force behind this EIS. But, in fact, the minimum flows proposed in the EIS are not to protect endangered fish species but to ensure that the 120,000 acre-feet of water needed for the expansion of NIPP can be always be delivered by gravity from the Indian project outlet at Navajo Reservoir. This EIS is really a development EIS and should be so identified in the EIS's purpose and needs section.

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We can find no discussion in the EIS of the annual depletions in terms of acre feet that will be released from Navajo Reservoir for endangered species. Is it 300,000 acre-feet, 400,000 acre-feet, or more? What is the monetary value of this water? Whose loss is it, and to whom should these costs be assessed? Is there no more felicitous way, such as downstream leasing, to meet these flow requirements? There must be a full discussion of these depletions as they may impact depletion rights of the states of New Mexico and Colorado under the Compact. If they are to be attributable to Colorado's share until such time as Colorado can fully develop its share, what then? What adjustments will have to be made? How disruptive might they be to the local or regional economy. What share has been deducted from Indian claims, or from New Mexico's rights under the Compact? Shouldn't they all share proportionately in these releases for endangered species? There is absolutely no evidence in this EIS that the BOR or F&WS have even considered these questions or their potential impact on state water rights.

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Moreover, ESA releases from Navajo Reservoir are not part of the projects original authorized purposes. Does the BOR think it has the authority to radically change those purposes without the consent of Congress? A full discussion of this issue should be presented in the EIS.

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The modeling done for the EIS does not include the historical low flows of the past two years. Those defining years must be added into the model and discussed. It is our dry-lab opinion that the ball game has changed markedly.

There must be a full disclosure of the Colorado River Endangered Species Recovery Program in this EIS, including past expenditures, projected future expenditures, and the number of endangered species as well as the amount of critical habitat saved—perhaps in relationship to the costs. Hatchery breeding of endangered species should be discussed separately, not only in terms of costs but in terms of production as well.

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We can only surmise that the F&WS has either been hoodwinked or lacks understanding about how reservoirs fill when it claims that release can be maintained with these new operating criteria without regard to future depletions both above and below Navajo Reservoir. Even a bathtub will not fill if you reduce the inflow to a trickle. Thus, some reasonable discussion of depletion limits on the San Juan sub-basin must be incorporated along with detailed discussion of how these limits will be apportioned needs to be incorporated into the EIS. GAO made this same recommendation in 1991. It is time the Department of Interior started listening.

Sincerely,
Phillip T. Doe

- ORE1-11 Reclamation recognizes the need to evaluate cumulative impacts. A baseline (depletion table) was developed for the EIS that included existing water uses plus future water uses that are reasonably foreseeable and that have complied with the ESA. The EIS, Chapter II, also discusses how future water uses beyond those in the baseline will be considered. Also, please see the response to General Comment 1b.
- ORE1-12 Please see the response to General Comment 10.
- ORE1-13 There are no water depletions associated with recovery of endangered fish. Your comment appears to address the release of water from Navajo Reservoir at the potential expense or loss of future unused depletions. Also, please see the response to General Comment 14.
- ORE1-14 Please see the responses to General Comments 10 and 16.
- ORE1-15 A detailed discussion of the Endangered Species Recovery Program and associated costs is beyond the scope and intent of this EIS.

Chair
Citizens' Progressive Alliance

December 4, 2002

To: Mr. Ken Beck
U.S. Bureau of Reclamation
Western Colorado Area Office
Durango, CO

From: Dave Wegner
Friends of the Animas River

Subject: Comments on Navajo Reservoir Operations
Draft Environmental Impact Statement

We have reviewed the Draft Environmental Impact Statement on the Proposed Navajo Reservoir Operations and provide our comments.

We agree with the overall objective of the document and support the Bureau of Reclamation in taking the lead on addressing a critical element in the survival of the native fish species. This is an important first step.

Overall however the document lacks the scientific rigor and integration that has become the norm for many of the Upper Colorado River basin operations EIS's on Glen Canyon and Flaming Gorge. We find that while good information is presented in the document it is not adequately integrated nor evaluated in a scientifically rigorous basis.

There is a long history of endangered fish assessments in the Colorado River basin. It is unfortunate that the EIS does not address the cumulative and watershed approach that is necessary to evaluated adequately the proposed alternatives and provide acknowledgement of the ancillary activities ongoing in the San Juan River watershed for native fish (such as the Navajo Nation's razorback rearing ponds). The result is a document that only addresses part of the story. The document does not adequately address the specific concerns identified in the Biological Opinion or the Recovery Goals for the Colorado pikeminnow and razorback sucker.

In summary, we support the process and recommend that a revised draft be produced that adequately addresses the science and ecosystem relationships to addressing the suite of native fish needs.

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Included below are our specific comments. Please feel free to call me at

Friends of the Animas River Comments on the Draft Environmental Impact Statement on Navajo Dam Operations - December 4, 2002

ORE2-1 Please see response to General Comment 19.

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259-2510 should you have any questions or request clarification.

A. PROCESS FOR DOCUMENT COMPLETION

a. NEPA Process

- i. Lacks a consistent level of analysis between the three alternatives selected for further review. The preferred alternative gets the majority of attention. There is not consistency among the three alternatives.
- ii. Lacks the explanation as to how they determined the two flow alternatives to be analyzed. This appears to be directly related to the hydrology report (Volume II) but is not directly linked to the analysis.

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b. ESA Process

- i. The USFWS Biological Opinion, the San Juan River Basin Recovery Implementation Program (SJRBRIP) and the USFWS Recovery Goals for the Colorado pikeminnow and razorback suckers are not fully integrated in the document. It is unclear of the progression and linkage of the various recommendations and concerns and how the EIS supports or addresses them.
- ii. Flow modification is only one element that is needed to sustain the native fish species. The document is unclear on how the other elements (non-native fish control, fish augmentation, barriers and passages, and water quality) will be addressed. Modifying the flow alone will not resolve the issues of concern.
- iii. Role of Navajo Nation, FWS and other entities. An effort should be made to show how the activities ongoing in the basin integrate with the activities.
- iv. **Without identifying the ancillary activities it is unclear from the document how just changing the flow regimes will provide relief to the native fish. It is the cumulative effect of the other activities with the EIS actions that will make this program valuable.**

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B. PURPOSE AND NEED OF THE EIS

a. Statement of Fact: Objectives defined in document

- i. Operate Navajo Dam and Reservoir to implement Endangered Species Act (ESA)-related flow recommendations on the San Juan River, or a reasonable alternative to those recommendations in a manner, which allows for both current and certain future water depletions to proceed.

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ORE2-2 Please see responses to General Comments 5 and 7.

ORE2-3 Please see the response to General Comment 20c.

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1. Conserve the two endangered fish species and their designated critical habitat as recommended in the San Juan River Basin Recovery Implementation Program
2. Maintain the authorized purposes of the Navajo Unit, which includes enabling future water development to proceed in the Basin in compliance with applicable laws; compacts, decrees, and Indian trust responsibilities.

b. Does the document support these objectives?

- **As the EIS is currently written it lacks the integration necessary to support the preferred alternative. Specifically the document requires addressing elements related to:**
 - Support for selecting the preferred alternative
 - Logic on why other alternatives (ranges of flows) were not addressed
 - Developing an ecologically defined flow regime that takes into consideration the geomorphic and sediment dynamics and water quality considerations of the required aquatic habitats
 - Include an assessment of a selective withdrawal structure to allow for thermal management as well as water flow management of the San Juan River.

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Statement: The SJRBRIP identified four major areas of concern as related to the conservation of the Colorado pikeminnow and the razorback sucker:

- Flow quality, quantity and variability
- Non-native fish species
- Barriers and passage
- Fish augmentation

Studies on the effects of dams to native fish species have identified that dams have fragmented riverine ecosystems, modified water quality conditions, created habitats for non-native species, modified geomorphic and sediment transport processes.

Only complete removal of the dam will resolve the inherent impacts of the modification of the riverine environment. **Short of dam removal the EIS should address:**

1. **Flow modifications based on an ecosystem health perspective that includes the native fish, riparian and aquatic habitats**

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Friends of the Animas River Comments on the Draft Environmental Impact Statement on Navajo Dam Operations – December 4, 2002

ORE2-4 Please see responses to General Comments 1, 4, and 5.

ORE2-5 Structures to adjust Navajo Reservoir release temperatures are beyond the scope and intent of this EIS. The EIS addresses alternatives to meet Flow Recommendations. The SJRBRIP is investigating water temperatures and their effect on the endangered fish, and other aquatic parameters.

ORE2-6 The SJRBRIP developed the Flow Recommendations for endangered fish in the San Juan River. The EIS does evaluate how meeting these recommendations may affect other resources, such as riparian vegetation, associated wildlife, native fish, and listed endangered species.

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2. Evaluation of a selective withdrawal structure that would allow for releases of water that more closely mimic the thermal requirements of the Colorado pikeminnow and razorback sucker.

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Navajo Dam directly impacts the San Juan River and the native fish species that depend upon it. The SJBRIP identifies in their Draft October 7, 2002 Program Document that *modification and loss of habitat have contributed to the decline of the Colorado pikeminnow and razorback sucker in the San Juan River.* Studies conducted by Federal, State, Tribal and independent biologists have identified that the current operations of Navajo Dam have created a disconnected riverine system that does not contain the essential habitats, water quality or water quantity necessary to support and sustain the native fish species.

The multi-agency, scientifically oriented, SJBRIP specifically identifies the need to provide and legally protect habitats, including the flow regimes necessary to restore and maintain required environmental conditions necessary to provide adequate habitat and sufficient range for all life stages to support recovered populations.

C. APPROACH AND ANALYSIS COMMENTS

a. Technical

i. Hydrology

1. The short duration of the low flow test does not allow for a scientifically credible assessment of the impacts on the trout, aquatic habitats, water quality and native fish species.

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ii. Water Quality

1. The Biological Assessment states (p.16) that the water quality of the San Juan progressively degrades downstream due to natural and induced bank erosion, diversions, agricultural and municipal return flows, and tributary contributions. Studies conducted under the SJBRIP have identified contaminants of concern to be arsenic, copper, selenium, zinc and polycyclic aromatic hydrocarbons. The location, biological availability and biological accumulation potential are not addressed in the document and should be. These contaminants may affect the native fish species and could end up in Lake Powell where they may induce other, unforeseen impacts on the reservoir biota.

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Friends of the Animas River Comments on the Draft Environmental Impact Statement on Navajo Dam Operations – December 4, 2002

ORE2-7 See response to comment ORE2-5.

ORE2-8 Please see the response to General Comment 22.

ORE2-9 Please see the response to General Comment 20f.

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- 2. From this information it would appear that the proposed flow regimes might tend to both concentrate and mobilize the sediments in which these contaminants may be located. **It is essential that an assessment be made as to the potential for mobilizing these contaminants and determining at what flow level they may be most impacting to the aquatic biota.**
- 3. **The State of New Mexico 303(D) list of water quality stressed stream segments will likely be impacted by the proposed action. This is not addressed in the document.**

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b. Scientific

i. Integration of ecological components

- **The existing EIS does not integrate the aquatic, riparian and habitat resources together. The focus of the document is on the native fish needs yet their survival is dependent upon the linkage of the habitats and food bases. Without adequately assessing the impacts of the flow regime changes on the remainder of the ecosystem there exists a major gap in the assessment.**

ii. Native Fish Analysis

- 1. SJRBRIP recommends (2/21/2002 letter, Vol. II) that winter releases should be lowered to as low as 250 cfs to provide optimum low-velocity habitat and conservation of water.
- 2. Maintain non-runoff flows in the San Juan River below the confluence of the Animas River between 500 and 1,000 cfs.
- 3. **No discussion on the need to screen irrigation diversions and canals. This should be assessed in the EIS.**
- 4. Critical habitat. Both the Biological Assessment and the U.S. Fish and Wildlife Service Recovery Goals for the Razorback Sucker and Colorado pikeminnow identify specific critical habitats in the San Juan River. **The EIS does not address the specific relationship between the proposed flow regime and the critical habitats for these two species.**

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iii.

- 1. Trout Analysis
 - a. The Trout Habitat Suitability Assessment

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Friends of the Animas River Comments on the Draft Environmental Impact Statement on Navajo Dam Operations – December 4, 2002

ORE2-10 Please see the response to General Comment 20f.

ORE2-11 Please see the response to General Comment 23.

ORE2-12 Flow Recommendations are designed for the San Juan River's critical habitat reaches downstream from Farmington. The SJRBRIP based these recommendations on habitat needs and habitat maintenance of the endangered fish.

ORE1-13 Reclamation had similar concerns about how the physical data was collected from the river; however, by working with scientists that are intimately familiar with PHABSIM, Reclamation believes most of these problems were overcome. Reclamation believes the analysis presented to be reasonably accurate and valid, although recognizing it was generated from a model that, by definition, is limited in that it's a simplification of a very complex real life condition. Also, please see the response to General Comment 28.

	(Volume II of EIS) identifies that the data provided for analysis was lacking in the quality and quantity needed to make a proper assessment of the impacts of modification of the flow regime.	
	b. Only two flow levels were modeled. Extrapolation of the results to higher or lower flow regimes is scientifically limited.	13 cont.
	c. The approach is adequate for the question being asked however the analysis is limited due to limited calibration flows and a failure to integrate the cross-sections.	
iv.	Riparian and Geomorphic Analysis	
	1. Riverine and riparian habitats are defined not by average flow regimes but by the extremes. The document does not address how the proposed flow regime will assist in supporting the creation and maintenance of aquatic habitats and define the geomorphology of the San Juan River.	14
	2. Currently the riparian zone along the San Juan River is a mixture of species. Sustaining the cottonwood riparian element requires periodic overbank flows that will support the regeneration of young plants. The current plan does not address that need.	15
	3. No sediment analysis is included in the assessment. The supply and movement of sediment is critical to the development and maintenance of habitats for the endangered fish, other	16
v.		
c. Economic		
	i. River rafting	
	1. The economic impacts to the San Juan River rafting industry are not adequate. The assumptions related to supply and demand and resulting economic impacts are not adequately assessed.	17
	ii. Trout fishery	
	1. The economic value of the trout fishery is not well developed. Trout fishermen contribute a great deal to the local economy and while the flow regime changes will modify the river it is uncertain how this will be affected economically.	18
d. Indian Trust		

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ORE2-14 Please see the response to General Comment 33.

ORE2-15 Flows under the Preferred Alternative would improve conditions for riparian vegetation compared to the No Action alternative; however, riparian vegetation maintenance is not a purpose of the Flow Recommendations. Corps flood control restrictions inhibit the growth of young cottonwoods in this reach of the river. Downstream from the Animas confluence, overbank flooding allows for greater recruitment.

ORE2-16 The SJRBRIP considered many resources, including sediment movement, in developing the Flow Recommendations. Habitats will be monitored by the SJRBRIP to determine their response to flow changes.

ORE2-17 Please see the responses to General Comments 20b and 32.

ORE2-18 Please see the response to General Comment 29.

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<p>i. The impacts to the Navajo Nation are not well articulated in regards to cultural and economic concerns. Specific impacts to local Native American communities should be addressed.</p>	19
<p>e. Water Management</p> <p>i. Linkage to the anticipated operations of Animas La Plata River is inadequate. A hydrologic model should be developed that includes the entire range of flow impacts of the ALP on the flows of the Animas River and their relationship to the San Juan River targets.</p>	20
<p>D. MISSING ELEMENTS IN THE EIS</p> <p>a. Alternative Analysis</p> <p>i. Number of alternatives needs to be expanded to include a wider range of low flow scenarios</p>	21
<p>b. Technical data</p> <p>i. Watershed perspective. The EIS is done outside of the context of how water management in the San Juan/Animas River/LaPlata River watershed may be cumulatively impacted by the proposed operation of Navajo Dam. A cumulative assessment from a watershed perspective should be addressed.</p>	22
<p>ii. FWS Recovery goal linkages. It is unclear how the recent USFWS Recovery Goals for the razorback sucker and Colorado pikeminnow are integrated into this document.</p>	23
<p>iii. Sediment impacts to Lake Powell. Changing the flow dynamics of the San Juan River may have an impact on the sediment delivery rate and volume to Lake Powell. This issue is not addressed in the document.</p>	24
<p>E. RECOMMENDATIONS</p> <p>a. Complete a more thorough assessment over a wider range of flow regimes that includes 250, 350, 450, 550 and 650 ranges.</p>	25
<p>b. Complete each assessment in a consistent manner</p>	
<p>c. Do a scientifically valid assessment of the trout habitat below Navajo Dam. Improve upon the unintegrated approach provided in Volume II of the document.</p>	26
<p>d. Include a geomorphic assessment that includes evaluation of the sediment transport and sediment transport and distribution response. This assessment should also look at cottonwood recruitment flows in the San Juan River.</p>	27
<p>e. Identify the diversions and barriers that will require passage modification.</p>	28
<p><i>Friends of the Animas River Comments on the Draft Environmental Impact Statement on Navajo Dam Operations – December 4, 2002</i></p>	

- ORE2-19 Impacts to Indian Tribes and tribal nations were identified in the ITA section of the EIS. Data from which to measure localized impacts to Indian communities is not available in sufficient quantities to perform detailed analyses at the local level. Please also see the response to General Comment 31.
- ORE2-20 The San Juan Basin Hydrology model includes operation of the ALP Project and model results include ALP's impacts to the San Juan River and the Flow Recommendations. See Volume II of the EIS, Hydrologic Modeling Analysis, for details on model configuration.
- ORE2-21 Please see the response to General Comment 5.
- ORE2-22 Please see the response to General Comment 19.
- ORE2-23 The SJRBRIP recovery goals provide a way to evaluate the success of recovery of the endangered fish. Flow Recommendations and reservoir operations are tools to reach the goals. Additional information is included in Chapter III of the FEIS.
- ORE2-24 It is anticipated that sediment movement will be restored to a more "natural" cycle with the change in the hydrograph to mimic a natural flow regime. Sediment impacts to Lake Powell were not addressed in this EIS. The State of New Mexico Environment Department is presently assessing bottom sediment deposits in the San Juan River.
- ORE2-25 Please see the response to General Comment 5.
- ORE2-26 Reclamation believes that its assessment of impacts to the trout fishery is sufficient for the purposes of this EIS and will not commit to reevaluating impact analysis at this time.
- ORE2-27 See response to ORE2-24.
- ORE2-28 Please refer to the Biological Assessment and Opinion in Volume II of this EIS. The SJRBRIP is addressing barriers to fish migration.

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f. **Develop and outline a science based adaptive management program with specific decision points and actions to be taken. The existing description of Adaptive Management is unworkable and will not result in adequate decision points for further modification of the flow regimes.**

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ORE2-29 Please see response to General Comment 17.

LIVING RIVERS

December 4, 2002

Mr. Ken Beck
Bureau of Reclamation
Western Colorado Area Office
835 East Second Avenue, Suite 400
Durango, CO 81301

Via Fax: 970-385-6539

Re: Navajo Dam Operations, Draft Environmental Impact Statement

Dear Mr. Beck

Living Rivers appreciates this opportunity to submit the following comments on the Draft Environmental Impact Statement (DEIS), Navajo Dam Operations, September 2002 (DES-02-35).

The San Juan River is one of the most dynamic ecosystems on the planet, supporting an incredible diversity of endemic plants and animals, as well as native cultures. We are quite concerned with the demise of its native fish species, but believe with proper river management, full recovery of these species is achievable.

It has been acknowledged that the two prime reasons why San Juan River native fish are endangered can be attributed to alien fish competition and the building of dams and diversions. Despite this, the DEIS provides little assurances that these impacts will be adequately addressed, such that recovery can occur. In particular, Living Rivers finds the 250/5000 alternative recommended in the DEIS to be totally unacceptable as a means to achieve this objective.

First, while the DEIS acknowledges that endangered species have yet to achieve a "positive population response" from the present flow regime, it none-the-less recommends continuing with the same regime. In fact there has been little to no benefit whatsoever to the endangered fish populations as a result of present dam operations. Since it's not working now, and the DEIS provides no evidence to ensure that it will work in future, it seems imprudent to make permanent such a flow regime. Furthermore, it seems imprudent for the DEIS to be making any recommendations at all, as the final report of the Biological Committee has yet to be issued.

Second, without recognition of the need to: increase the length of the habitat reach through effective fish passage and potential dam decommissioning; mandate mechanisms to ensure sufficient in-stream flows in light of existing and proposed diversions and climate change; and aggressively eliminate non-native fish and plant threats to the habitat, it is unlikely that full recovery of razorback sucker or Colorado pikeminnow will ever occur in the San Juan River. Failure to adequately address these critical issues, not only threatens the validity of preferred alternative, but all alternatives presented in the DEIS. The comments which follow address these deficiencies within the EIS in greater detail.

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1. Truncated reach too short to enable recovery

Historic habitat for the native San Juan River fish included the spawning beds above Navajo Dam and the sections now inundated by Lake Powell reservoir. The critical habitat identified by the DEIS on the San Juan River is substantially less, the distance between Lake Powell reservoir and Navajo Dam. Furthermore, this remaining stretch is truncated even further by a number of diversion projects.

The only remaining critical habitat, of the native 320 river miles, available for fish recovery is the San Juan River which lies between Hogback Diversion Dam and the head of Lake Powell reservoir, approximately 138 miles. Included in this 138 miles, are the 57 miles of swift water at San Juan Canyon, which is documented as habitat not advantageous for the rearing of native fish. Therefore the total available habitat for fishes that once ranged throughout the San Juan River and its tributaries has been reduced 75 percent to a mere 81 miles.

The DEIS does not demonstrate how this remaining habitat is sufficient to accommodate the rearing of native fish. There are two kinds of habitat that are needed by the native fish of the San Juan River: spawning habitat and rearing habitat. It has been demonstrated that spawning habitat is available for the fish to utilize, but that rearing habitat for the hatchlings has been severely diminished, as most of the hatchlings drift into Lake Powell reservoir to be predated upon by the exotic fish. It has been suggested by aquatic biologists that historic habitat was available to the drifting hatchlings in the lower river reaches of the San Juan beyond Clay Hills and in the areas of the Colorado River mainstem.

While the preferred alternative does call for combined flows from Navajo Dam and the Animas River to drop to 500 cfs, this may not be sufficient to halt young fish from being carried down to Lake Powell reservoir, and anything lower would reduce the backwaters habitat, which is even more critical for their survival. The success being experienced with fish recovery on the Green River is largely the result of habitat length. The DEIS fails to address these restrictions on the San Juan River, or the alternatives available to correct them.

First, most of the water diversions do not allow for adult fish passage to enable spawning in the upper reaches of the remaining habitat. This includes the diversions of the Animas River, which is part of the historic habitat of the endangered San Juan River fish. And while a fish passage device has been constructed at the Hogback Diversion Dam, it has not been determined if endangered fish even utilize it.

Second, even should successful fish passage be achieved, there is no evidence that this stretch of river will be sufficient to accommodate the needs of these larval and early juvenile fish. Historically, San Juan River native fish could rely on the free-flowing Colorado through Glen Canyon to provide both rearing habitat for San Juan River native fish, and as a refuge in times when the San Juan River ran dry. Decommissioning Glen Canyon Dam would restore the historic geomorphic habitat that the fish evolved

Mr. Ken Beck
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with and would also favorably increase the range and conditions of critical habitat necessary for the recovery of San Juan River native fish.

The DEIS should have: one, identify how successful fish passage will be achieved to maximize availability of the remaining habitat; two, evaluate the effects of Glen Canyon Dam on the San Juan River Basin Recovery and Implementation Program (SJRBRIP); and three, evaluate the decommissioning of Glen Canyon Dam as a legitimate alternative to restore San Juan River native fish populations.

2. Long-term operations of Navajo Dam

At least until such time as Glen Canyon Dam is decommissioned, San Juan River native fish are dependent on Navajo Dam to reduce the likelihood that the remaining habitat will run dry. The DEIS, however, makes no reference as to the impermanence of Navajo Dam, and how its decommissioning, either through dam failure, or sedimentation could effect fish recovery.

Catastrophic floods are known to occur in the drainage of the San Juan River. Navajo Dam's ability to control floods has been called into question due to unexpected piping of reservoir water through the dam's earthen structure (Bureau of Reclamation, Engineering and Research Center, Denver). Such piping has caused other earthen dams to fail, such as BuRec's Teton Dam in Idaho, which caused loss of property and loss of life. The DEIS needs to document the integrity of Navajo Dam, and how, in the event of a dam failure, it would avoid a complete loss the San Juan's remaining, and/or recovered, native fish.

For Navajo Dam to use its river outlet works for extended periods of time during the seasonally adjusted high flows, the EIS must also report on the safety concerns related to cavitation and other potential operating hazards that could occur while using these outlet works (SJRBRIP Coordination Committee Minutes of 10/15/98).

As the San Juan River erodes a geographic area that includes soft host rocks, it is no surprise that it is the major contributor of sediment for the Colorado River system. This high content of sediment poses serious concerns to Navajo Dam operations, and will eventually force the dam's decommissioning. The DEIS must outline the timeframe by which Navajo Dam will likely need to be decommissioned, and how this decommissioning will effect recovered endangered fish habitat.

3. Water quality concerns & climate change

The DEIS fails to adequately address how it will guarantee necessary in-stream flows. While historically, the San Juan River has run dry, this did not significantly affect native fish populations as they were able to seek refuge in the Colorado River. Until such time as Glen Canyon Dam is decommissioned, such refuge is not available. Therefore, BuRec must ensure water will be available for the fish. This is particularly problematic given the extent of unresolved water claims. While the DEIS recognizes the existence of such claims, and admits in particular that Navajo Nation claims, "if exercised could place in conflict most of the water in the basin," it outlines no mechanism for how the necessary

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ORE3-1 The factors mentioned are beyond the scope and intent of this EIS. The EIS evaluates impacts of alternatives to meet Flow Recommendations which are one element in the SJRBRIP. The SJRBRIP also addresses fish migration barriers but not decommissioning of dams and reservoirs.

ORE3-2 Please see the response to General Comment 12 which discusses decommissioning Navajo Dam.

ORE3-3 The integrity of Navajo Dam, as well as other Reclamation facilities, is monitored and administered through Reclamation's Safety of Dams program. It needs to be clarified that piping has not been and is not occurring through the embankment material at the dam. The dam was modified in 1988-89 with the installation of a concrete diaphragm wall. Navajo Dam is monitored on a continual basis, both by automated instrumentation and on-site personnel.

ORE3-4 The design of the outlet work structures and powerplant facilities is capable of safely releasing flows of 5000 cfs.

ORE3-5 Please see the response to General Comment No. 12 which discusses decommissioning Navajo Dam.

ORE3-6 Please see the responses to General Comments 16 and 20a.

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in-stream flows will be guaranteed. Recent history on the Klamath and Rio Grande Rivers reveals that the Bureau of Reclamation has demonstrated an unwillingness to make such flows a priority.

6 cont.

Additionally, the DEIS fails to assess the likely impact climate change will have on water availability. The upcoming year, in particular, may be an eye-opener for resource managers and citizens of the San Juan River system. It is projected that even if the coming year receives normal precipitation, there will not be sufficient water supply to meet the level of demand (Personal communication, New Mexico Game and Fish, 2002.) This is indicative of the over-developed nature of the San Juan River and this issue must be more thoroughly addressed by the DEIS to produce water in times of drought for the recovery of native fish.

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Recent reports issued by the US Geological Survey (USGS) specifically indicate that resource managers will have problems meeting their future water delivery projections (R. Hereford, Flagstaff and R. H. Webb, Tucson, 2002). The data indicates:

- The 20th Century was a wetter century than normal by 20 %.
- The 400-year average virgin streamflow for the Colorado River at Lee's Ferry, Arizona totals 13.5 million acre-feet per year; 16.4 was the original projection.
- Colorado River virgin streamflow at Lee's Ferry, Arizona can increase or decrease by as much as 35 percent.
- High magnitude floods can stress spillway mechanisms and overflows will damage areas of development; dam failures are possible.

Climate change is becoming an increasingly important issue affecting surface water management, thus it's surprising, in light of the above, that the DEIS did not address it.

The preferred alternative will only work when climate behaves normally and would fail in a severe and sustained drought. The DEIS should have provided the total amount of acre-feet required to conserve native fish species for each alternative, and how this relates to the natural annual flow of the Colorado River. It should have also provided adjusted streamflow statistics on the consequences of climate change. Such analysis is imperative to properly manage the San Juan River and the conservation goals as outlined by the DEIS.

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Lastly, the DEIS did acknowledged water supply constraints in its analysis of the 500/5000 Alternative, stating that it would not be technically feasible to implement due to present diversions. The DEIS failed to state, however, how such an alternative would in fact be of much greater benefit to the native fish, only that it is not feasible. The DEIS did not discuss opportunities for purchasing, transferring or otherwise acquiring the necessary water rights to enable the implementation of this more beneficial alternative.

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To be credible, the DEIS should have developed an alternative based on the water needs of the native fish, then determined how to ensure the water availability and flow regimes that will best provide ensure such water is provided on a permanent basis.

ORE3-7 Please see the response to General Comment 13.

ORE3-8 Historic flows were used as a basis for the variability of streamflow under future conditions. Climate change is not a method used by Reclamation to estimate future water availability. Please refer to the responses to General Comments 13 and 17 which discuss drought conditions and adaptive management, respectively.

ORE3-9 The 500/5000 Alternative would not provide sufficient water to meet spring peaks for the endangered fish and also would not meet water development needs. For these reasons it was not selected as the Preferred Alternative. Also, see the response to General Comment 3.

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4. Insufficient high flows

The maximum flows outlined in the preferred alternative are not sufficient to meet the needs of the razorback sucker. This fish responds very well to spikes in the hydrograph, but the DEIS ruled out flows above 5,000 cfs from Navajo Dam due to the technical constraints associated with the dam's river outlet works. As stated in the *Flow Recommendations for the San Juan River*, prior to Navajo Dam, spring spike flows of 33,000 cfs occurred at Bluff Utah, 30 percent of the time. However, the preferred alternative will not allow for such spikes. The preferred alternative is based on a calculation of the average spike flow, yet provides no analysis to demonstrate that such a flow is indeed sufficient to invoke the types of benefits necessary for the razorback sucker. Therefore, similar to the need to make necessary engineering modifications to allow for fish passage, the DEIS should have addressed more completely the benefits to razorback sucker recovery associated with higher and more consistent spike flows from Navajo Dam.

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5. Removal of alien fish

It is well documented that the introduction of alien fish species has contributed significantly to the decline of the native fish populations in the San Juan River. Members of the Desert Fishes Council have specifically documented their concerns about alien fish impacts on the available resources of food and habitat in our desert rivers (Battle Against Extinction, W. L. Minckley, 1991).

Every alternative presented supports the continued existence of an artificial trout fishery. These fish should be removed because they significantly compromise native fish recovery goals—feeding on the larval and early juvenile native fish. Sport fishermen have alternative venues to pursue their recreation, some nearby where trout are a natural feature of river ecosystems. The native fish do not have such alternatives and are forced to compete for survival in an impossible coexistence. Other alien fish species, such as stripers, catfish and carp, too must be eliminated as opposed to the proposed suppression strategies.

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6. Removal of alien plant species

Invasive tree species such as tamarisk and Russian olive need to be more aggressively mitigated with programs other than the mimicry of the natural hydrograph called for in the DEIS. These trees have dramatically changed the geomorphology of river bed, which alters the optimal productivity of the spawning habitat for the endangered fish, as well as the habitat of the endangered birds and some species of special concern. These exotic plants should be eliminated and replaced by native vegetation such as cottonwood and willow.

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7. Water quality

The DEIS does not sufficiently address how water quality will be improved such that there will no longer be impacts on native fish. The health of San Juan River native fish is

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ORE3-10 Releases from Navajo Dam will be limited to 5,000 cfs as a flood control and safe channel capacity measure. Control of major flood events is one purpose for which Navajo Dam as constructed. The Flow Recommendations were developed by the SJRBRIP and are supported by the Fish and Wildlife Service. The success of the Flow Recommendations on endangered fish recovery will be monitored by the SJRBRIP.

ORE3-11 Removal of non-native fish from the San Juan River is beyond the scope and intent of this EIS.

ORE3-12 Removal of non-native vegetation along the San Juan River and replacing it with native vegetation is beyond the scope and intent of this EIS.

ORE3-13 Please see the responses to General Comments 20f and 23.

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presently being compromised by oxygen sags, lesions from toxic chemicals associated with the production of petroleum products and sewage treatment plants.

This situation is anticipated to worsen as new projects and diversions come on-line. Pollution and heavy metals from return flows will increase, suppressing further native fish productivity. Increased selenium in the soil systems of the drainage is of particular concern, as it is known to shunt the reproduction organs of the endangered fish. Moreover, in the summer of 2001, BuRec published *The Low Flow Test: San Juan River*, which concluded that the reoperation of Navajo Dam, as called for in the preferred alternative, would not meet New Mexico water quality standards over the long-term.

13 cont.

The DEIS claims that BuRec plans to address these matters through dilution by the recommended flows. However, such flows are already being implemented, and water quality standards continue to be violated. Clearly, this is not a viable solution in the near or long-term. While the DEIS also states that efforts will be made to increase enforcement of non-point source pollutants, it provides no details of how this will occur and how this will necessarily benefit water quality.

8. Water management

The constraints facing the recovery of San Juan River native fish are indicative of a much greater disaster in years to come. The over allocation of the river, unresolved water rights claims combined with lower water volumes due to climate change will lead to extensive conflicts and a dried-up river with regularity. There will be no recovered fish, or water for many of the users that presently have rights. Surprisingly, however, BuRec is doing nothing to resolve this.

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In addition to the comments pertaining to water quantity in item 3 above, BuRec must comprehensively address how water from the San Juan River basin will be allocated in such a way that the needs of native fish will not be compromised. BuRec must identify what mandated water conservation and water utilization policies will be enforced on all users to sufficiently reduce their take from the river to eliminate the likelihood of shortages, both for native fish and water users. Such policies will not only resolve many existing and future problems, but save money by eliminating the need for some of the basin's existing and proposed projects.

Conclusion

Living Rivers has no confidence in the conclusions of the DEIS or any of its alternatives to successfully recover the native fish of the San Juan River. The preferred alternative represents the continuation of present operations, which has yet to demonstrate any results. Additionally, before any alternative can be adequately considered, the DEIS must be significantly expanded to address the likelihood that the current habitat is too short in length to allow for recovery, and alternatives explored to remedy this. The DEIS must also address specific mechanisms to maintain in-stream flows in light of present and anticipated demands on the system, climate change, and the prospect of Navajo Dam failure and eventual decommissioning. The removal of non-native fish and plant species must become a higher priority, as should improvements in water quality.

ORE3-14 Please see responses to General Comments 13, 18a, 20a, 20c, and 20d

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Alternatives, which may be more beneficial to recovery, such as the 500/5000 Alternative must not be excluded merely because of water constraints. BuRec should identify what's best for the native fish, then determine how to attain it, such as mandated water conservation and acquisition of water rights for the fish. Lastly, BuRec must face the reality that the San Juan is going to regularly run out of water if new water conservation, allocation and management policies are not swiftly implemented.

Sincerely yours,

A handwritten signature in black ink, appearing to read "John Weisheit", with a long horizontal flourish extending to the right.

John Weisheit
Conservation Director

San Juan Citizens Alliance

Organizing for the people and land of the San Juan Basin

December 4, 2002

Mr. Ken Beck
U.S. Bureau of Reclamation
Western Colorado Area Office
835 East 2nd Avenue, Suite 300
Durango, Colorado 81301-5475

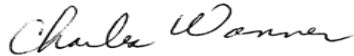
Dear Mr. Beck:

The attached comments concerning the Draft Environmental Impact Statement for Navajo Reservoir Operations are submitted on behalf of the San Juan Citizens Alliance and the Sierra Club.

If your office or the Bureau of Reclamation has any questions concerning the comments you can direct them to me at our office.

Your help in explaining and discussing the Draft is appreciated. I look forward to working with you in the future.

Sincerely,



Charles Wanner
Water Issues Coordinator

These comments on the Draft Environmental Impact Statement for Navajo Reservoir Operations dated September 2002 are made on behalf of the San Juan Citizens Alliance and the Sierra Club.

Our view is that given the information in the Draft the 500/ 5000 flow regime better meets the full range of uses of the resource and produces the most benefits for the full range of users.

In addition, the Draft EIS is not sufficient. It does not adequately assess either the environmental, or the economic long-term effects of the proposed action on water quality, non-native fish habitat, the economic effects on the Navajo Indian Irrigation Project, and the economic effects on the rafting and sport fishing industries.

Our specific concerns are:

- That the EIS is seriously flawed in that it does not truly evaluate more than one alternative. || 1
- The No Action and the 500/5000 alternatives, which are not recommended, are not fully compared to the preferred alternative. || 2
- Arbitrary assumptions about the operation of the Navajo Indian Irrigation Project preclude a proper comparative economic analysis of the alternatives. The assumption that causes any possible, *shortage no matter how small*, to this project to be considered as prohibiting delivery to 56,138 acres and a loss to the economy of over \$40 million per year *does not make sense*. An average water year difference of 456 acre-feet does not make a \$40 million difference. 3
- The short duration of the low flow test eliminates any scientific analysis of the effects of long-term flow changes on water quality and habitat. The listing of additional segments on the New Mexico 303(D) list, which might be caused by lower flows, are not considered as they relate to costs that might be incurred by local water treatment facilities or by NPDES permit holders. 4
- The assumptions made about the economic impacts to the sport fishing industry are not sufficient and are not properly compared to other sectors of the economy. 5
- The assumptions made about supply and demand on the rafting industry eliminate any detailed analysis of impacts on that sector of the economy. 6

A complete analysis of a range of alternative releases from 250 to 650 cfs at 100-foot increments and an economic assessment of the impacts of the various flows on all sectors of the economy of the region would be one way to fully comply with the National Environmental Policy Act. **A new draft** needs to be made available for public comment, which utilizes a sufficient analysis of both the environmental and the economic impacts. 7

A revised draft should provide true alternatives and not tie analysis to two arbitrarily selected release scenarios. **The assumption, which eliminates any option, which causes any shortage to the Navajo Indian Irrigation Project as not being worthy of analysis, prevents a proper comparison of alternative costs of various flow rates. Further, flow regimes that might meet even this criterion, but are between these two arbitrarily selected numbers were not subjected to analysis.** 8

If a new analysis considers releases from 250 to 650 cfs, accepts the Biological Opinion's base line of 57,100 acre feet from the Animas, and utilizes the historical hydrologic

- ORE4-1 Please see the responses to General Comments 1a and 5.
- ORE4-2 Please see the response to General Comment 7.
- ORE4-3 Alternatives were evaluated based on whether they could meet the Flow Recommendations; agricultural diversions were to be kept whole. Determining shortage criteria and the resulting water shortages assigned to each individual agricultural diverter was not pursued when Flow Recommendations could not be met in the hydrology modeling. Therefore, agricultural lands that would be idled due to a water shortage were not identified. Hence, if the alternative met the Flow Recommendations without shortages it was viable; if it did not, further analysis was limited to the impacts associated with that alternative not occurring, and the water rights needing Section 7 consultation would not be met.
- ORE4- 4 Please see the responses to General Comments 20f, 22, and 23.
- ORE4-5 Please see the responses to General Comments 29 and 31.
- ORE4-6 Please see the response to General Comment 32.
- ORE4-7 Please see the responses to General Comments 4, 5, and 19.
- ORE4-8 Please see the responses to General Comments 5 and 19.

records to determine available water, a proper economic analysis can be done. A solution that avoids jeopardy under the Biological Opinion and creates a range of options for all interests could be found. Full and balanced economic information about the costs of various options would give all stakeholders a basis for making comments on the effects that the re-operation would have on their interests. An adequate draft would serve as a tool that could help all parties work out a suitable resolution in the future. **As the analysis in the Draft stands it is of no real use in weighing the costs of alternatives.**

Fisheries:

Native fishery: 500/5000 will create more habitat for the endangered species in the long run over the full range of possible habitat in the San Juan River. If impediments to upstream migration are removed there will be much more habitat available in the upper reaches of the river with the increased flows. Fish passage to as much habitat as possible should be a future management goal for fish recovery. We need to remember that there are a lot of variables in the amount of water that reaches Bluff on a given day because of the lax water administration in New Mexico. The Biology Committee identifies flows that are between 900 and 1000 cfs as providing backwater habitats that are important for reproduction. Occasionally higher base flows should not be detrimental to native fish. Increases in this type habitat should aid in recruitment to the population and possibly reduce the need for future Endangered Species Act consultations. It seems that in the analysis of the impacts to the endangered species that the minimums are overly weighted and not balanced against the benefits that might result from occasional higher flows. The real criteria that drive the analysis are what are the impacts on future development in the basin. The reduction of conflicts with future development that is not quantifiable seems to drive the amount of water that is beneficially applied to the fish. The balance of uses that includes the fish should be weighted to the fish until other uses are more quantified and waters reserved for them are actually applied. Until such time the fish should benefit from any uncertainties and from any discretion available to decision makers.

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ORE4-9 Please see the responses to General Comments 3, 10, and 20c.

Non-native fishery: The high quality fishery below the reservoir will suffer more under the 250/ 5000 flow regime. A reduction of 34% of habitat will occur in the special regulation waters with more problems expected below the Citizens Ditch diversion. The analysis assumes a direct correlation between the loss of habitat and the loss to the economy. The lack of long-term analysis of low flows makes scientific analysis of the long-term impacts on this resource hard to accomplish. The EIS does not really address long-term effects in a substantial manner.

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ORE4-10 Please see the response to General Comment 28.

Wildlife Mitigation Area:

Nowhere are the provisions for wildlife mitigation that were a part of the initial project accounted for in the EIS. The mitigation area was moved and placed below the dam. There is no mention of the effects of the various flow regimes on this aspect of the project. Presumably the avian species that required a separate water right for habitat in the original project still are impacted by the availability of water in the new location that they are supposed to inhabit. This does not appear as a direct reference in the EIS.

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ORE4-11 Please see the responses to General Comments 2 and 33 concerning mitigation and the downstream wildlife habitat.

Hydropower:

Hydropower replacement costs are projected to be an average of \$3.8 million more per year with the 250/ 5000 option, as compared to the 500/ 5000 option. These costs are incurred as a result of the releases effect on power generation. In the analysis a worst-case scenario was used to attribute loss of revenues to the 250/ 5000 regime. The lost revenue and replacement costs are relatively easy to quantify. Short of shutting down the plant and the attendant job loss, the costs are a rather simple dollar exchange. There should be no significant job loss under any of these scenarios as any reduction in power produced should be short lived and employees retained. An analysis of a full range of flows such as is supported by the San Juan Citizens Alliance would provide more precise information about the effects of flows on the generation of power. The 500/5000 Option would greatly reduce the costs for lost power generation.

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ORE4-12 Please see the response to General Comment 26.

Boating Impacts:

Obviously there will be more water downstream for boaters on the average day with a higher flow. The Draft EIS however, incorrectly assumes that there is no reduction in boater days because of the maintenance of 500cfs, which is a minimum boatable flow. No allowance is made for a possible decrease in demand for boating at the lower flows because of lost interest. The position is that there is excess demand now and that as long as there are 500 cfs flows there will be demand that cannot be met with the permits available. Therefore, there will not be any difference in economic impacts or significant differences in recreation impacts associated with either the 250/5000 or the 500/5000 scenarios. No consideration is given to market forces other than the recognition of the fact that the current demand exceeds the current supply. This is an oversimplified and dismissive view of this economic sector and must be criticized. Finally the siltation on the lower end of the river was not considered as affecting the boating population.

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ORE4-13 Comment noted. Please see the response to General Comment 32.

Irrigation Impacts:

If our recommendations are followed the losses to the economies of the area caused by shortages to the Navajo Indian Irrigation Project could be viewed as comparable to the losses that are incurred by other economic sectors. However, in calculating the loss to the region that results from a loss to agriculture a worst case scenario which assumes a loss of all but the first 6 sections of NIIP. A loss of water to sections 7 and 8, which are currently developed and which are already figured into depletions in the Draft, would even be assumed, as well as the loss of, still to be developed sections, 9-11. Thus the computation of the resultant impact of \$40 million is based on 56,0138 acres of lost agricultural production. This is not based on the reduced quantity of wet water, but rather on the impact of the loss that might be caused because of a failure to get the project past NEPA. This is really a badly based economic comparison and weights the costs improperly toward the 250/ 5000 alternative. This is a major flaw in the economic analysis and needs to be addressed in a second draft of the EIS by a more plausible and fair comparison. This examination will mean that all parties have better information. Finally by factoring the Biological Opinion into all scenarios the automatic rejection because of NEPA should be easily avoided. The inclusion of other future projects into this EIS is only valid if all of those projects demands are modeled into all parts of the study. The inclusion of projected projects and future development, which are unexamined and sometimes not quantified makes the

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ORE4-14 Please see the response to Comment ORE4-3.

examination close to irrelevant. Failure to take the realities of the limits of the river into account will involve leading those counting on using water, that is their right, into conflicts and shortfalls. This is a limited resource. There are unquantified claims on the river. These unknowns need to be resolved before the United States puts itself in a position of wondering how we are going to satisfy claims that are a legal obligation.

Future Development:

Future development will almost certainly be proposed. In the modeling for this project the Ridges Basin and the Navajo Indian Irrigation Projects are included. If we accept these two uncompleted projects as a given we have already factored in two major projects that are not yet operational. If no further analysis is done it is wise to error on the side of the benefits, which are being realized today rather than allowing ourselves to think that we have more water than we do. Planning to keep more water in the river means that more of the burden to find water for future developments and better analysis will remain on future developers. The less water we think we have the slower we will be to commit it. New projects will change the actual flow regime. Models are a best guess and the more projects that are actually operating the more real the scenarios become. This approach will not cause a loss of opportunities, It is simply a prudent stance that by its caution protects the commitments that have been made and those that are still not quantified such as the final amount of water due to the Navajo Nation. Re-operation of the dam is always possible if the area's needs change in the future. Caution will help us to not make missteps by predicting results on models that are based more on probabilities than on realities. If conflicts arise in the future we can weigh the alternatives and their consequences then. We should not make current decisions based on future possibilities. We should make them based on what is here today and proceed cautiously and with the best information possible in future development. The question for this EIS is not managements impact on future development. It is the impact on the environment and the economy as it exists today as reflected in current legal commitments.

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ORE4-15 Comment noted.

Water Management:

One more factor, which makes the higher flow more prudent, is the inconsistent administration of water rights in New Mexico. Any water released into the river under current administrative practices is liable to be taken before it is delivered to its appointed destination. Even those that have contracted water from the Navajo reservoir are not sure that it will remain in the stream until it reaches their diversion. Therefore, the more water in the San Juan the more likely that an adequate amount of water to create the desired flows downstream will be reached. If New Mexico and other downstream interests want to shave water off of the releases they should tighten up the administration of their waters to assure the public that water released at the dam will reach its intended destination and really benefit the endangered species and other uses.

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ORE4-16 Please see the response to General Comment 18a.

Water Quality:

The "Low Flow Test Report" done this year by the Bureau indicates that water quality probably would not meet state standards over the long haul. Long-term low flows would create an unexamined set of conditions. Possible results of lower flows might include the following:

- A failure of chronic water quality standards as well as acute (short term failures) exceedences of water quality standards could result. Long-term low flows might produce oxygen sag as a result of increased water temperatures and shallower depths, which will promote some increase in algal growth.
- There are many anecdotal reports of fish with sores in the San Juan. There is reason to believe that this is a result of byproducts (PAHs) associated with the production of petroleum products. What will be the effects of lower flows on this type of pollution?
- As the 'Summer Low Flow Test Report' indicates some parameters were not tested with methods that could detect a violation of the standard being measured. Some of the materials not effectively measured include PCBs, mercury, DDT, residual chlorine and chlorodane.
- Additional treatment caused by higher levels of fecal coliforms at lower flows could result in greater concentrations of residual chlorine, a water treatment by-product, because of a higher level of chemicals used for water treatment.
- The low flow report refers to the possible additional listings of stream segments on the NMED 303(D) list. Such listing would require a TMDL to be done for the parameters that were exceeded. No mention is made of the costs and constraints incurred when a TMDL is required.

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ORE4-17 Please see the response to General Comment 23.