

## MANAGING THE RIVER: A ROUNDTABLE DISCUSSION

The Roundtable Discussion of the water conference consisted of questions and answers based upon written questions submitted by the audience and two hypothetical water management scenarios. The scenarios were patterned after the successful Public Broadcasting series, "The Constitution". In this instance, each panelist, as the spokesperson for his agency or interest, made decisions relevant to the water management scenario. The videotape of the scenario segment of the Roundtable Discussion is available on loan from the New Mexico Water Resources Research Institute. The following has been transcribed and edited from the question and answer segment of the Roundtable Discussion.

### ROUNDTABLE LEADER:

0 George William Sherk, Attorney,  
Land and Natural Resources  
Division, U.S. Department of Justice

### ROUNDTABLE PARTICIPANTS:

0 Sam Arquero, Governor, Cochiti Pueblo  
0 Jeris Danielson, State Engineer, Colorado Division of  
Water Resources  
0 Robert M. Findling, Deputy Director, New Mexico  
Department of Natural Resources

- 0 Jesse B. Gilmer, Texas Compact Commissioner, Rio Grande  
Compact Commission
- 0 Narendra N. Gunaji, U.S. Commioner Designate,  
International Water and Boundary Commission
- 0 Eugene Hinds, Regional Director, Southwest Region, U.S.  
Bureau of Reclamation
- 0 Monte G. Jordan, Acting State Director, U.S. Bureau of  
Land Management
- 0 Robert L. Knutilla, District Chief, U.S. Geological  
Survey/Water Resources Division
- 0 Lt. Col. David E. Peixotto, District Engineer, U.S.  
Army Corps of Engineers
- 0 Steve Reynolds, State Engineer, New Mexico State  
Engineer Office
- 0 Michael J. Spear, Regional Director, U.S. Fish and  
Wildlife Service
- 0 William P. Stephens, Secretary, New Mexico Department  
of Agriculture
- 0 Phillip Wallin, Southwest Regional Manager, Trust for  
Public Land, Santa Fe.

Sherk Assuming no change can be made in the basic water  
law of New Mexico, would transfers of existing  
water rights from irrigation purposes to  
recreation or instream purposes be contrary to

water conservation in the state or detrimental to the public welfare of the citizens of the state?

Wallin

I consider water conservation to mean the highest and best use of water for the public welfare. And instream flow fits that definition in the sense that it's a nonconsumptive use. It's an opportunity to use water twice. I enjoy being a skier and a boater and drinker. It gives me that feeling of righteousness about multiple use of water. It's compatible with water conservation. In fact, it enhances water conservation. We need to recognize that New Mexico is urbanizing. The people in Albuquerque are certainly as interested in recreation and wildlife as they are in eating vegetables and drinking water. There are those for whom recreation is not a luxury, it's a necessity. I count myself as one of those. I wouldn't be in New Mexico if I didn't have the opportunity for water based recreation. I feel that changes in the the law--you would have to change the law as I understand it--should make instream flow, without diversion, a benefieial use. I feel it would enhance the public welfare for the citizens of New Mexico.

Sherk Mr. Reynolds, would it be necessary to change the law to protect instream uses?

Reynolds Yes.

Sherk Would or could the instream flow advocates be willing to bear the burden of proof of nonimpairment of existing water rights as well as bear the costs of water rights acquisitions and the necessary litigation to protect that water right? If you were representing the Public Land Trust, how would you respond?

Reynolds It would be very expensive. I doubt that Public Trust members themselves would be willing to pick up the extra cost. The administration that would be required to protect an instream right would be quite expensive and probably should be paid by whatever state agency was in charge of acquiring diversion rights and converting them to instream flow rights. It would only be fair for the state to pay that cost rather than charge it to the water users in general.

Sherk Mr. Spear, the Fish and Wildlife Service clearly

has an interest in instream flows. To what extent do you think the service might be able to assist on the acquisition of instream flows, which is a polite way of saying "Can you pay for it?".

Spear

Under certain circumstances that might be a possibility. For instance, if it were for the protection of endangered species and certain water rights were critical I can see the service perhaps agreeing to pay for instream flow rights for an endangered species in an emergency when something had to be done quickly. I think the tide is moving in the direction of maintenance of instream flows for the public trust. Most state and federal wildlife agencies are not going to be anxious to step up and say they will pay for the water necessary to maintain fisheries. In many cases adjustments can be made to do a good job for both. Are agencies willing to pay for instream flow rights? In extraordinary situations, yes. On a more routine basis, probably not.

Sherk

Mr. Stephens, you are involved with agriculture. The questioner asks how you prioritize beneficial uses? Are public health, safety and welfare of

water uses more important to public welfare and economics than instream flow uses. How do you come up with a priority? How much water should still go into agriculture? How much should stay instream for tourism? How do you balance the necessary uses of water?

Stephens I am involved in agriculture. We do use a main portion of the water in this state. We have to recognize the essential things. You have to have water for drinking. But when we go to other uses, such as fishing and saving an endangered species, then it becomes a little less distinct. We have to protect the people who have the water rights at the present time. Someone has to pay if that farmer gives it up. I was interested in the comment yesterday from the attorney from Colorado who said if we do not go to instream flow its like shooting ourselves in the foot. As I look at it, if you do go that way, it might be like shooting the farmer in the head.

Findling I'd like to respond to all three questions. First, there are a lot of different ways to look at instream flows. From a pragmatic standpoint

you need to identify those streams that are worthy of instream flow protection. In many instances in New Mexico those streams are located on public land in many of the state's wilderness areas and on Forest Service and BLM lands. In many cases those streams are wild and scenic rivers. I don't think there's a lot of interest in establishing instream flows in stream channels such as the lower Rio Grande that are unstable and have silted bottoms. In many instances the streams that need protection or that are desirable for instream flows are not streams that represent an impairment to agriculture. What the instream flow would do would be to establish protection for the stream in its present state. It wouldn't impound water because the water would still flow downstream. Only in some instances would there be consumptive use. If consumptive use means increased evaporation or some increase in transport losses, there are public entities that are willing to compensate for that impairment. Certainly in the case of the 6,000 acre-feet delivered for the Elephant Butte minimum pool, there is 300 acre-feet of instream flow losses. We pay to offset that 300 acre-feet of transport losses.

The key is to exercise managerial discretion in establishing goals that the water management community can all focus on and work toward achieving. Relative to the question of litigation, if we focus on managerial discretion when identifying what reasonable losses and consumptive uses are accrued to instream flow as defined under the present water law, then we can work toward compensating for those impairments. Another point is that the state of New Mexico cannot afford to trade one economy for another. Certainly we can't afford to retire water rights from agricultural land on a large scale in order to re-establish instream flows. We have to identify means and management techniques that provide a joint use for that water so we can have our cake and eat it too. It's very cheap. It's a very reasonable goal to reach. It's one that we can work toward in making these uses a success. Relative to the questions of public welfare and economics, it's clear that as the state's economy shifts from the traditional emphasis on extractive industries and agriculture toward tourism and recreation, instream flows will become a reality. It exists in Colorado. If the state is going to



work toward improving its economy it's essential that we not think of ways to preclude the possibility of improving the state's water use for recreational purposes. We must work toward achieving that goal and minimizing the impact it has on existing water uses.

Wallin

To give a good example of that, I want to thank Ray Shollenbarger, attorney for the Middle Rio Grande Conservancy District (MRGCD) who did a wonderful thing this summer in working with Bob Findling and state parks by providing late summer weekend releases on the Rio Chama for recreation. There was no gain and no loss as far as I know to the MRCD in coming up with a plan whereby their irrigation release from El Vado came down on the weekends to provide instream flow of 1,000 cfs for recreation. That was a terrific example of cooperation for the public benefit. It was common sense multi-use management. I also want to thank Gary Daves and the Albuquerque Water Resources Department, which did something similar this summer.

Sherk

Mr. Danielson, you and I are alone here to uphold

the honor of the great state of Colorado.

Colorado has an instream flow law. If you were an adviser to Mr. Reynolds, how would you advise him regarding protection of instream flows in New Mexico?

Danielson It's difficult to say how I would advise Mr. Reynolds on an instream flow program for New Mexico because I think such a program cuts far beyond what the State Engineer or any state agency does. Perhaps if I describe the Colorado program it might give Mr. Reynolds and other members of agencies here in New Mexico some ideas. Our water laws are similar to those in New Mexico. We're also a prior appropriation state. About 10 years ago Colorado became very concerned about two things. First, environmental groups were extremely concerned about instream flows. Second, the agricultural interest became very concerned because the environmentalists were concerned. Agriculture consumes about 94 percent of our water. We foresaw a lot of environmental groups coming in because of the broad definition of beneficial use in our state. We perceived being faced with all kinds of instream flow applications

and nobody was willing to bet on what the Supreme Court would do about the question. So we identified one agency in the state that was granted the authority to obtain instream flows. That was the Colorado Water Conservation Board, which is something akin to the Interstate Stream Commission in New Mexico. To date that agency has filed for instream flows on approximately 7,000 miles of streams in Colorado. The rights for those instream flows fit into our priority system. Many of them are recent applications in late 1970s, late 1980s, which generally are not of much value in terms of consumptive use. But when you look at the location of most of those streams, you'll find they're in wilderness areas and on forest lands. So they do preserve those flows in those recreational and forest areas from any future degradation. There have been instances where on our critical streams the state has put up money to go out and purchase a senior water right and dedicate that consumptive use to an instream flow. Instream flow is not something to be feared. Without major law changes, you can have a program that meets that environmental need and still preserves those water rights that are critical to the state's economy.

Sherk

When water laws were formulated many of today's interests--aesthetics, fish and wildlife resource protection, and recreation--were not integrated into the process. How can the agencies and organizations represented on the panel ensure that these interests are represented in the future?

Peixotto

The future is much easier than the past. Most of the laws that affect our flood control projects are fairly old laws, going back into the 60s and earlier, back before the days of the National Environmental Protection Agency (NEPA), before the days where we had an environmental conscience to the extent we have now. To modify the way we operate our projects is going to take changes in the law as we look to the future and future projects. We do have in place the mechanisms of NEPA, the mechanisms of the Endangered Species Act and the whole host of laws from the environmental 60s and 70s. In the future, the stage is set for not having the kind of challenges we now have.

Sherk

Mr. Hinds, Bureau of Reclamation projects operate with fairly strict criteria regarding their congressionally authorized purposes. How do you

expand your management role or change it to address things like instream flows?

Hinds

Like the Corp of Engineers, we are mandated by a number of laws going back to 1902. I'll have to concur with the colonel that since NEPA there's very little that we do in the way of river management that doesn't get the scrutiny of the public, even on river maintenance. We have to prepare an environmental assessment, an opportunity for comment from the public on what we're doing. We have cooperated to the best we can, at the same time meeting our obligation to the people who are paying for the water to implement instream flow uses. We work with Mike Spear's office very closely on fisheries and hopefully if it's within our ability and existing law and policy we can cooperate with all the entities on all uses of water. But laws are laws and that's what the colonel and I operate under. Congress mandates what we do and if there's going to be any changes required, that will require changes in the law.

Sherk

Yesterday we heard Mr. Wallin suggest a number of

changes which might be made to protect instream flows. Rather than asking him to repeat those, I'm going to ask Mr. Spear if he were sitting in the chair occupied by Col. Peixotto or Mr. Hinds, what would he do?

Spear

The question asked if the fish and wildlife, aesthetics and recreation interests are represented. I think the fish and wildlife interests are very well represented. I have no problem at all working with the Corp of Engineers and the Bureau of Reclamation. We don't always like what they decide because the law generally gives the construction agency the final decision. You really can't have it any other way. Sometimes I would like to have the final decision but in fact they're the ones building the project so they get to make the final decision. However, the law is good in making them take fish and wildlife interests seriously. I represent the national interests, but we also bring in the state interests. What it really boils down to in many of these cases is that the interests that I represent and their constituency are growing in strength. It's a differential strength depending

on where you work. In some parts of the country it's a lot stronger than others. In some cases the more traditional water interests are still strong and the decisions tend to go that way. So the final decision still comes down to what the public opinion is to a great extent. If I were sitting in their shoes, the only thing I would do differently is perhaps bring a little different consciousness. But we would still work under the same laws. The public interest is key. They simply have to get more involved. At times they just don't seem to be as interested as those people who are trying to build the projects. I don't have any doubts that Col. Peixotto and Mr. Hinds take those interests very seriously. I feel very well represented. The question is that sometimes I feel our point of view isn't seen as important. Sometimes you hear those comments about whether endangered species and fish and wildlife are as important. I think they're increasingly more important and will get considered that way.

Reynolds I think those interests alluded to in the question are protected. For example, we have one of the

first if not the first wild and scenic rivers in New Mexico. It takes up a long reach of the Rio Grande and a very important part of Red River. We've got at least three federal reservoirs that require minimum releases. They're not protectable once they're released, but nonetheless they are required. Perhaps most important is that the geography as well as the land ownership patterns in New Mexico protect what are some of our best streams. There's no real opportunity for reservoirs in these high mountain streams or even agriculture, so it seems to me those interests are protected. We should not denigrate what we do have. There are some excellent fishing streams in New Mexico and the several reservoirs we have also provide considerable recreation opportunity not only for fisherman but boaters and others that enjoy water recreation. So let's not put down what we do have.

Sherk

Mr. Jordan, Mr. Reynolds mentioned this Wild and Scenic rivers designation of the Rio Grande and part of the Red River. Yesterday we had a discussion on how the process came about by which those two river segments were protected. Is that



the kind of procedure you would like to go through every time a wild and scenic river is protected or is there another approach, perhaps based on instream flow laws, that might be preferable?

Jordan

Let me say first that BLM does not have a general authority for acquiring or adjudicating instream flows. We have adjudicated only the Red River. We have not adjudicated any instream flows on the mainstem of the Rio Grande. My staff tells me we only have one real authority and that is the Wild and Scenic Rivers Act, which we can use to obtain instream flows. The process we followed in the Red River is a good one because it brought everybody into the picture. We don't like to short cut that process. We find it helps to have the full involvement of the state and federal agencies and local government. When we get to the end of that process then we have something that everybody will live with and we can manage.

Sherk

Mr. Wallin, in light of what you've heard this morning, do you think those are still appropriate suggestions? Are there others you would like to make? If you were sitting in Col. Peixotto's or

Mr. Hinds' chair, how would you protect multiple resource values from projects that have a limited statutory authority?

Wallin

One phenomena I noticed is that people who have the power of a public agency behind them continually say they're obliged to operate in a certain way by statute. They say their hands are tied and this is the only way they can act. I've had enough debates with the colonel and Steve Reynolds and others that I know there is a range of discretion on how you read the laws and how you apply the laws. For example, flood control management of the Rio Grande is not an open and shut case. There is a lot of discretion about how much water to let out and when to let it out. We need to have better communication, but right now the environmental community is in one water tight compartment and the water management agencies are in another. We need to break down the walls between the departments and have some sort of roundtable discussion here in New Mexico. It might have to be a very big table, or maybe it would be better to have a very small table, but we've got to have some kind of ongoing

structure--informal or formal--whereby various water management people and various environmental people can stay in communication on a continuing basis. We in the environmental community must become part of the constituency for the Corp of Engineers, for the Bureau of Reclamation, and for the state engineer rather than be like minute men sniping at them from behind bushes as is our want. It is vital to have the kind of talking relationship that is structured and happens on a regular basis where we get to know each other on a first name basis and become familiar with each other's Organic Acts, operating requirements, vocabulary and concerns.

Sherk

Governor Arquero, I'll move on to you now. I knew you had been invited to be on the panel but I wasn't sure you would be here. I was concerned that I would have a panel talking about the waters of the Rio Grande without representation from the pueblos. That would be like having a car running on three wheels. What is your interest in instream flows and how do you best go about defending them?

Arquero Let me just interject something here. I agree with the gentleman's comments relative to communication. There is a big lack of communication with the Corp of Engineers and with all the agencies within this state. I'm not here as an expert on the complexity of water management but I'm here as a concerned citizen representing the Pueblo Cochiti. Cochiti has faced a drastic problem on the reservation with seepage below Cochiti Dam. I mentioned that yesterday. The council and I as a governor were willing to cooperate with whatever agency we could deal with to correct the problem. We've had many sessions with Steve Reynolds, with the colonel, and with others of my good friends. And it appears to me that they all have a sincere concern to correct the situation at that level. However, I don't know where the delay is and who has the final authority to correct it. The authority is so complex and it's awfully difficult to understand just who has the authority to allow our water storage in the lake, and who has the authority to release the water. But I think by sitting down and communicating that we can understand one another and perhaps help one another in this

situation. As I indicated yesterday, I was disappointed and frustrated because the slides showing damages all the way down to Elephant Butte Dam made no mention of Cochiti. Today I hope you'll take the time to see the film we brought, which shows the damages that are occurring below the dam. Our farmland is under water today. Somewhere someone is responsible for the damages that have occurred. I don't know if that answers your question sir, but those are the circumstances.

Sherk That's fine. Would anyone like to own up? I will ask one more instream question because it's a specific question for Mr. Reynolds. Senate Bill 426, which was passed in September, required that fish, wildlife and other environmental issues be given equal consideration in the granting of hydropower licenses. Will that bill have an effect on New Mexico water management?

Reynolds I can see no important effect at this time. Hydropower is not a thing that's of great importance in New Mexico. We do have the elevation in many places. But there are efforts,

particularly by Los Alamos, to develop hydropower both at El Vado and Abiquiu reservoirs. But these will be simply "run of the river" power plants so I can predict no substantial effect on the environmental or instream flows, or on any of the environmental issues we have discussed here today.

Spear

I'd like to add something to that and give an example of what's happened after this law was passed. The Fish and Wildlife Service made instream flow recommendations below two dams in Texas that were going back to the Federal Energy Regulatory Commission (FERC) for relicensing. In other words, their regular license of 40 or 50 years had run out. We are making recommendations to increase the flow below those dams. Of course this is being resisted by the hydropower authorities, which are basically the river authorities in Texas. But I'm pleased to say that the FERC is taking it very seriously and next Wednesday there'll be a meeting in Washington over one of the dams. In essence, not only are any new hydropower projects required to get a license from the FERC, but any license that needs to be reissued will be looked at. The license possibly

will require more appropriate flows below the dam so the fisheries and recreation interests can be better served. The new Electric Consumers Protection Act will have an effect on the situations that come up. But as Mr. Reynolds has said, there won't be many cases in New Mexico.

Sherk Mr. Reynolds, why should state law permit people who have access to a good public water supply drill their own wells?

Reynolds The fundamental reason is for administrative convenience. But, one has to review the history a bit. Back in the 30s as I recall it, maybe early 40s, there was a great oil boom and people needed water. It was hard to get because in Hobbs the growth of the population was so great the state engineer in effect turned them loose and said go ahead for a domestic well. I guess the legislature recognized the wisdom of that and for administrative convenience provided that by filing an application and a fee of \$1, the state engineer would be required to grant a domestic well permit without concern as to whether or not that well would impair existing water rights. Those wells

are still subject to the doctrine of prior appropriation and could be enjoined if in fact it turned out they were impairing senior water rights. I think administrative convenience is correct in that if a community gets large enough to have enough domestic wells to impair existing rights they fairly quickly see that their own economic advantage dictates a community well for which they must acquire water rights pursuant to the regular procedure. Also, we have a number of applications for domestic wells right here in Santa Fe where there is a public water utility. And more often than not the permit is never exercised because by the time one looks into the costs of drilling, operating and maintaining his own water system, bearing in mind that the well will probably go out on Monday, a private water supply is not worth it. There isn't too much of that that goes on.

Sherk

I'm going to make a wholesale leap then to the Sleeper decision. I might ask if you would like to summarize that very briefly for the audience. In your opinion, Mr. Reynolds, does the Sleeper decision represent an appropriate application of



the public interest standard to proposed transfers of water rights? And if not, why not?

Reynolds We don't have a Supreme Court decision on that yet and there remains considerable uncertainty in New Mexico as to what the term public welfare means. I'll not try to tell you, I'll refer you to Black's Dictionary. But if that opinion is extended, I can briefly say that the problem with the Sleeper decision is that the irrigation water rights could not be transferred to develop a ski resort. As I recall, it was for the reason that it would be detrimental to the traditional community ditch management and economy in that area. Now then, as I say if that is extended, it will certainly deprive the irrigation water right owners of a substantial value of their water rights and that might not be consistent with the public welfare.

Sherk One of the members of the audience submitted a question which relates to your comment yesterday, Mr. Reynolds, that you served at the will of the governor. It seems you have served at the will of

a number of governors. The questioner was worried about there being continuity in water management in New Mexico. Although you may have been here for more than one term, many others haven't. There is a different management strategy with every election and with every flip of the coin. Are you concerned about continuity in New Mexico's water management and water policy? Conversely, is continuity all that important in a time when values are changing from expanded agriculture to recreation and instream flows?

Reynolds You put that very graciously. The state engineer, in my opinion, has not dominated water policy, he has administered it. The legislature sets the policy. We're fortunate that that original 1907 legislation has not been substantially modified. And I think that is in the public interest. That sort of stability is important. If in fact, continuity is not desirable, there's a sure and easy way to remedy that. The state engineer serves a two-year term. Let me add that it's not uncharacteristic for positions on New Mexico's Interstate Stream Commission, an important water agency, to be inherited. We have people on the

commission whose fathers served before them. In fact, there are at least three members, out of nine, whose fathers have served on the commission. And I think it has worked.

Sherk

I have this image of the probate court judge sitting there looking at someone's last will and testament and seeing whether or not the grant of the position on the Interstate Stream Commission was within the person's testamentary capacity. Col. Peixotto, one of the members of the audience asked how you could justify ignoring the Endangered Species Act vis a vis bald eagles just because it was enacted after the authorization of construction of Abiquiu and Cochiti reservoirs?

Peixotto

I would contend that we do not ignore the Endangered Species Act vis a vis, the bald eagle. If you look at the historical record, you'll find that before our projects were built the bald eagles weren't overwintering on the portion of the Rio Grande and Chama where we have our projects. Last year in times of peak water storage, we also had peak bald eagles overwintering. Every winter Army helicopter comes up from Ft. Bliss and we fly

up the Rio Grande between Cochiti Lake and Abiquiu Dam and count the bald eagles. As memory serves me, the count was 26 between Cochiti and Abiquiu, which was a record. So we do have great concern for the bald eagle. Those of you who know a little bit about bald eagles, and I admit to knowing just a little bit, know that their first choice in food is fish and the best place to get fish is out of flat water. Therefore, they tend to congregate around the flat water areas. So I disagree that we haven't considered endangered species. We take them into account very gravely in all of our actions.

Sherk The helicopter isn't an Huey Air-Cobra gunship is it?

Wallin That reminds me of the guy who wrote a letter to the editor last summer about Abiquiu and Cochiti saying, "I don't know what all the concern is about. It's a beautiful reservoir. I have a power boat and I went up to Bandolier National Monument. Golly, it's great. I finally got access to the monument. I don't see how anybody could object to this." I'd like to write back to

the guy about now as the waters go down and ask him how it looks now as a mud hole with a lot of denuded land and silt several feet deep and archeological sites you can't see anymore. As far as eagles using Cochiti, I think any biologist will tell you that the eagles do flock to a rising reservoir. However, they tend to fall off precipitously after the waters come back down. It has the effect of destroying perching trees and so forth. So I think its kind of a half-truth to say we've reached record numbers of eagles while the reservoir was at maximum. The question is what is sustainable?

Reynolds I think with regard to this particular issue, it is important to know that at the March 1986 meeting of the Rio Grande Compact Commission, it was reported that the operation of the flood control reservoir on the Rio Grande had prevented \$120 million of damages in 1985.

Sherk Does anyone else on the panel care to address endangered species?

Findling I would like to comment on Steve's response about

the \$120 million. An important issue in that report is that it did not mention what other management techniques also could have provided equal flood protection while enhancing recreation and environmental values and benefits. There are a lot of different ways to manage and achieve like goals.

Spear

We administer the Endangered Species Act. Col. Peixotto has to come and ask our opinion on things like management of Abiquiu as it affects bald eagles. Its only fair to comment on how we saw that question. The Endangered Species Act does not say that you can't affect an eagle or even 20 eagles. It does have a say in how you affect the continued existence of a population or a species or a subspecies. In this case, our opinion was easily that the continued existence would be affected, even though all 20 might move somewhere else. Had this been a breeding population our opinion might have been different. We would have looked at it as a southwestern desert breeding population, which does exist in Arizona. But here we're dealing with wintering populations. We told that to Col. Peixotto. We may find that when the

water goes back down there may not be as many of them hanging around. The plain fact is the Endangered Species Act doesn't come into play and prevent something simply because it may be an impact on one or two animals or a great number. We are talking about a rather large wintering bald eagle population coming from the north and wintering in the south. That population extends over a wide range of states to the south and so its very hard to find how it may affect a particular lake. So I have to agree with the colonel. He did not ignore the act as it relates to that incident.

Sherk Mr. Jordan, is the increased cutting of trees by the Forest Service a concern to fish and game management agencies regarding runoff?

Jordan I think the most foolish person in the world would not try to answer a question for the Forest Service. However, let me turn it around a little. In the BLM, we have a close working relationship with the state Game and Fish, hopefully also with Mike Spear, on any of our activities. I'm sure that that relationship exists with the Forest

Service. If they see anything that we're doing that might impact the resources that they're charged to protect, they'll tell us and we work with them. I think that answers the question.

Knutilla The U.S. Geological Survey is working for the Forest Service on some proposed studies in the Las Vegas area where there may be some logging. We plan on monitoring stream flow, water quality and sediment load to find out the impacts on runoff. The Forest Service is indeed concerned about the runoff and quality of water as a result of logging practices.

Sherk Excellent, especially since I have to defend the Forest Service. I love to hear things like that. Dr. Gunaji, one of the participants raised a question about whether future development in Mexico is going to increase demands on the Rio Grande, which might require an amendment to the existing compact or an additional mechanism by which water could be supplied to Mexico. I'd appreciate your comments.

Gunaji Before I answer the question I should make some



observations. I'm still a commissioner-designate, so my answer is going to last 50 minutes because I'm coming from academia. The second thing I want to say is that I've observed the operations of the agency from outside this department, so I want you to decide the entanglement of any answer I give. I have Mr. Joe Valdez, the principal engineer for the commission, who will assist me with the technical part of the question. I will answer the question as follows, keeping in mind that I have a right to change my answer after I take office.

Sherk Everyone else does, why should you be any different?

Gunaji The division of waters between the two republics is a little more complex than as is done under the treaty. Under the 1906 treaty we are committed to deliver 60,000 acre-feet of water at the international border just north of El Paso. That particular item cannot be changed under whatever circumstances the development occurred in Mexico and the United States. Until such time we are obligated to operate under that agreement. If any development occurs in Mexico or the United States

that would change this, we are going to require another treaty convention to change those figures.

Sherk Under that agreement though, coming to Mr. Gilmer now, would increased flow into Mexico require an amendment or renegotiation of the Rio Grande Compact?

Gilmer No. The Rio Grande Compact recognizes the treaty with Mexico and the states that require delivery of 60,000 acre-feet of water a year by the International Boundary and Water Commission at El Paso. Bear in mind that the Rio Grande Compact is the law of Colorado, New Mexico, Texas and the United States. But an international treaty, approved by the senate and signed by the president, takes precedence over any domestic law in this country. Should the international treaty be changed, it would be incumbent upon the commissioners of the Rio Grande Compact to give due consideration to any changes in the compact.

Reynolds One needs to look at Article 14 of the Rio Grande Compact for the answer. It says, "The schedules herein contain the quantities of water herein

allocated shall never be increased nor diminished by reason of any increase or diminishment in delivery or loss of water to Mexico."

Sherk How would the compact commissioners respond to an issue raised by someone in the audience? Should the compact require renegotiation to protect environmental values because when the compact was negotiated those values were not nearly as important as they are now?

Gilmer I would reply this way to attract Mr. Phil Wallin to my answer: We have today white water running in the Rio Grande downstream from El Paso where we put the river through a thing we call the "little box" where white water is going at least 25 ft. in the air from time to time. I appreciate Phil being here today instead so he won't have trouble on the Rio Grande with white water rafting. Phil, that's a joke.

Wallin To refer to that as white water is a joke!

Sherk How does the water stored in the reservoirs above Santa Fe affect the compact?

Gilmer The laws authorizing the construction of the flood control reservoirs upstream from Santa Fe must respect the Rio Grande Compact as being the law of the three states and the United States. The compact also respects the rights of any Indian tribe on the river. I don't see any conflict between the Rio Grande Compact and the Flood Control Act because the act is built around the Rio Grande Compact. There are only certain circumstances under which water can be stored and released--possible danger, loss of life and danger to major structures. The law is compatible enough, I think it's the administration of the law that gives us trouble.

Sherk There is one area that is near and dear to my heart, growing up as I did overlooking the Missouri River, fondly known as the Big Muddy. That's the area of silt. I've always liked silt. There were two questions submitted about silt. So panel you may turn your thoughts to silt. Land erosion is a very serious problem. Is anyone presently studying silting problems?

Knutilla We have initiated two activities that address

silting, one with the Bureau of Reclamation and one with the Corps of Engineers whereby we are doing some cross sections on the Rio Grande. These two agencies are concerned about the impacts of silting on some structures.

Sherk In a related question, does any of the silt that's flowing into Elephant Butte contain toxic elements?

Knutilla We have not investigated that specifically yet but we've done a lot of water sampling on the Rio Grande. We have also looked at such things as water quality in the Bosque del Apache. But the work to date has been data collection as part of other activities or the kind of work at the Bosque del Apache that may be done in perhaps FY 88.

Hinds Because we have the responsibility to keep the water moving down the river, when we identify areas that need corrected we work with the USGS to look at the silt depositions in the river. We also maintain a close surveillance on our reservoirs to see what the silt aggregation is. When we design reservoirs, and I'm sure the

colonel works the same way, we build into that reservoir capacity for sediment deposition. We've found that it really isn't economical to go into a reservoir and remove silt. We don't plan it that way. We usually use another reservoir to replace the one built up. In that manner we feel we are doing as good a job as we can.

Reynolds The Soil Conservation Service under the Department of Agriculture has done a great deal to undertake sediment control in New Mexico. There is also a Soil Conservation Division of the state's Natural Resources Department which addresses that problem. The Environmental Improvement Division, under the general provisions of our Water Quality Act, has on occasion recommended best management practices in forestry in the harvesting of timber. Appropriate procedures are followed to minimize erosion. It has been demonstrated by the Department of Agriculture that the harvesting of timber improves water flow. At the same time, unless good practices are followed, it also greatly increased the sediment that will go into the reservoirs.

Gilmer You might mention that according to engineering literature in existence when Elephant Butte reservoir was designed early this century, the dam was predicted to be completely filled with sediment by now. The facts are that last night at midnight we had stored in the dam, 2,370,000 acre-feet of wet water.

Jordan Proper management of the public lands has always had an underlying mission of reducing erosion as much as possible. We adjust this with proper land management practices related to grazing, to the construction of small retention dams to catch the silt to keep it out of the mainstream of the Rio Grande, and ongoing studies. For years we've been involved in a study with the Forest Service in the Rio Puerco drainage and we're hoping that that's going to add to the knowledge that we all need to control it. We're actively involved in this on a continuing basis.

Wallin I had the privilege of going out to the Rio Grande drainage with Paul Applegate of the BLM and looking around. I was astounded at the degradation out there. In my idealistic way, I

wondered if there wasn't something interagency that could be done to reduce the silt runoff there. I went on one of my pilgrimages to see John Cunico at the corps. We locked ourselves in a room as an experiment to see if we could agree on something. We allocated half an hour and tried to come up with something we could agree on as a way the environmental community could work together. So I put forward this possibility on the Rio Puerco: Couldn't the Corp. of Engineers be the lead agency in devising structural or nonstructural ways of impeding the soil erosion and the sediment load up there? And I think John basically said they looked at it and it wouldn't work. Anyway I wonder who could look at it again? There's got to be a way we can deal creatively with that running sore in the Rio Puerco drainage.

Sherk I'd like to allow one more response. We all know that it all comes from Colorado anyway--I mean the silt. Mr. Danielson, you're upstream.

Danielson Silt or water all measures the same at the interstate gage. I don't want to berate the issue of silt in forest management, but I'm convinced



that the U.S. Forest Service and their forest management program to increase runoff comes to us from the People's Republic of California. And its a ploy to steal more Colorado River water. Seriously though, we've looked at it in great detail in Colorado, both the U.S. Forest Service and our own state forest service. It's great to keep chip board plants going, but we found that it makes the streams more flashy, the hydrographs peak higher, the runoff occurs at a shorter period and there are major contributions of silt. We do everything we can to subvert you client there, chopping down all the aspen.

Sherk Thank you all for your comments.