

Water Education Foundation  
Water in the West

Interviewer: Rita Schmidt Sudman  
Interviewee: Jack Barnett  
Date:

Page 1

---

R. Sudman: Okay. So why don't you say who you are and --

J. Barnett: We're up and going? --Uh-- I'm Jack Barnett. I'm the Executive Director of the Colorado River Basin Salinity Control Forum.

R. Sudman: Now, Jack -- let's go back to the beginning of your education and then involvement in water salinity. Are you an Engineer?

J. Barnett: I'm a Geologist. I have a Master's Degree in Ground Water Geology. I started my career administering water rights for the State of Utah and from there it moved to other opportunities.

R. Sudman: So when did you start working for the State of Utah?

J. Barnett: I started for the State of Utah back in 1960. And --Uh-- that led to an opportunity to work for the State of Idaho and Water Resource Administration.

R. Sudman: Were you in ground water most of the time in these fields?

J. Barnett: Well, it was always a mixture of both surface and ground water. --Uh-- Administering water rights and trying to understand the water resources better through studies.

R. Sudman: So what led you to this working salinity?

Water Education Foundation  
Water in the West

Interviewer: Rita Schmidt Sudman  
Interviewee: Jack Barnett  
Date:

Page 2

---

J. Barnett: Well there was kind of a middle point there where I was employed by the Western States Water Council as their Executive Director and in that position I got to know a lot of the water people around the Western States.

R. Sudman: Can you tell me what the Western States Water Council is?

J. Barnett: It's an Organization of the Western Governor's. At the time I was there, it was twelve states. They appoint members and those members are the ones that employed me. And we deal a lot with water policy. Back when I started, it was a time when President Carter decided there was going to be a hit list and in 1977 simultaneously, we had one of the worse droughts across the West we had. So it was rather an exciting time but after a few years there, getting to know u. water people around the west --Uh-- the seven Colorado River basin States, those administrators that were involved in water quality issues, the salinity of the river approached me and asked if I would consider taking on this job and there had not been an Executive before so I was the first one.

R. Sudman: Well what was this job and what interested you in it?

Interviewer: Rita Schmidt Sudman  
Interviewee: Jack Barnett  
Date:

J. Barnett: Well the --Uh-- Salinity Control Act was passed in '74 and there was a lot of debate about what could be done to control the salinity of the river. --Uh-- Congress said we would so obviously it was going to happen. Obviously, if Congress acts, it's going to happen. But that's not true and we didn't know what was going to happen.

R. Sudman: Well let's back up a little bit then to the issue. Was it just something that became an issue in the 70's or was this recognized as far back as when the compact was negotiated? How far back does the concern about salinity go?

J. Barnett: The issue was not apparent in the compact and it appears that it was in the mid 60's when the states started to become concerned and Mexico was concerned. When we approached 1970, the concern had become much greater. The Wilton Mohawk Irrigation drainage had now reached the Colorado River and was going to Mexico.

R. Sudman: And where is the Wilton Mohawk --

J. Barnett: The Wilton Mohawk Irrigation is a district in the Yuma area that received water pumped out of the Colorado River

Interviewer: Rita Schmidt Sudman  
Interviewee: Jack Barnett  
Date:

and it became very saline because there wasn't adequate drainage and so drains were installed and the water was then released back to the Colorado River below Imperial Dam, the United States last diversion but above Morales Dam. So the Mexicans were very much concerned about that but there was nothing in our treaty with Mexico that talked about water quality.

R. Sudman:

So there was --Uh-- a concern about salt on the Colorado River for many years but it became a big issue when it became an international political issue in that Mexico was getting, what they considered, too salty water?

J. Barnett:

That's correct. But at the same time the seven basin states had been meeting under the auspice of an old Federal Law that allowed a Federal Committee to Forum to help advise the Federal Government about the Mexican problem because the states were concerned about their water supply. But further, the lower basin states were seeing that the salinity of their water was going up and they were concerned. So, finally, there was an agreement in '72 between the United States and Mexico --Uh-- but the basin

Interviewer: Rita Schmidt Sudman  
Interviewee: Jack Barnett  
Date:

states insisted that when that agreement went to ratification before the Congress, that there was going to be an addressing of the problems within the United States as well and in fact the salinity problems of the United States are much larger than in Mexico, mostly because we have a lot more people that are using the Colorado River.

R. Sudman: Now what was the agreement that we did make with Mexico so that they were happy?

J. Barnett: The agreement with Mexico is that we will deliver to them water that we're talking in total dissolved solids now, when I talk about water quality, because that's the only thing that we've considered on the Colorado --That --Uh-- the waters they would receive at Morales Dam would not be greater than 115 parts more than the water measure at Imperial Dam. The Mexican President said --I'm willing to take that increase, I know that we've been in part, receiving turn flows from the Yuma area, because I believe the United States will control it's water quality for its' users at Imperial Dam and above --And so the, what we call

Water Education Foundation  
Water in the West

Interviewer: Rita Schmidt Sudman  
Interviewee: Jack Barnett  
Date:

Page 6

Title One of the Salinity Control Act which was passed in '74 addresses the Mexican issue.

R. Sudman: Now --

J. Barnett: That led to the building of the Yuma Desalting Plant and the bypass drain and all of the things we hear about in the Yuma area.

R. Sudman: So the United States spent a ton of money to build this Yuma Desalting Plant which the jury still isn't in, well it hasn't solved the problem, or whether it starts up again, whether it will solve the problem, but we agreed to do that to placate Mexico?

J. Barnett: That's correct. And in the Salinity Control Act then there was a Title Two and that addressed the salinity in the Colorado River. You might remember that that was also the time when the Clean Water Act was passed. So EPA was telling the basin states "you've got to establish water quality standards on the Colorado River.

R. Sudman: So things were really coming together in the late 60's and early 70's?

Water Education Foundation  
Water in the West

Interviewer: Rita Schmidt Sudman  
Interviewee: Jack Barnett  
Date:

Page 7

J. Barnett: In those first few years of the 70's it's amazing the deals that were struck so to speak. --Uh-- the basin states have formed the Salinity Forum that I worked for in 1973. They struck a deal with EPA and the deal was that wouldn't have state line water quality standards. We'd have a basin standard and that resulted in an agreement that we wouldn't allow the salinity at three downstream measuring points to increase above what they were in 1972 -- while the Upper Basin States continued to develop their Compact (inaudible) waters.

R. Sudman: Now there was a commission that was going to develop this criterion?

J. Barnett: Well, the law required each of the states to submit a water quality standard and plan to EPA. The agreement was all of the seven states would do that with one single plan that would be advanced by the Salinity Forum.

R. Sudman: The agreement between the states?

J. Barnett: Yes.

R. Sudman: The states decided to take this on as a group? Why?

Interviewer: Rita Schmidt Sudman  
Interviewee: Jack Barnett  
Date:

J. Barnett: Well they thought that there was unanimity among their views about the water quality and that they would all benefit by working together rather than trying to establish their own method of treating salinity. Trying to solve their own state line problems, standards and -- you know -- California, Arizona was being damaged by the upstream salts and they had little or no control over what Arizona, I mean what Colorado or Utah might set as their standards. So it was better if they all worked together. There were environmental groups that didn't like that approach. So after the basin states had convinced the EPA that was the approach and EPA accepted it, then EPA was sued by some environmental groups.

R. Sudman: What period was that?

J. Barnett: That's just about in 1975? It all happened so quick. And the courts agreed with EPA and the basin states that a basin water approach was clearly allowed under the Clean Water Act.

R. Sudman: What was the environmentalist concern at that time?

Interviewer: Rita Schmidt Sudman  
Interviewee: Jack Barnett  
Date:

J. Barnett: Well, they, I wasn't involved because I'm still five years away from becoming involved but, but I believe their concern was that the seven basin states really wouldn't make this collective effort work and so their would be no responsible party and if it was left to a state line standard then they would know that they could make Utah comply or Wyoming comply with the Clean Water Act.

R. Sudman: Were the environmentalists concerned that salt was hurting the environment also?

J. Barnett: Yes, --Uh-- I think the environmentalists wanted the salinity program to be successful and to reduce the salt levels in the river, but I think more of the environmental groups were concerned about this precedent being said that the states can collectively address the river basin and in context of the Clean Water Act and not be restricted by just state line standards. So I think they thought there was more at stake than just the Colorado River and whether this would work to reduce the salinity of the Colorado River.

R. Sudman: Well, now what were the seven states going to do? Were they going to build physical structures on the river, or how

Interviewer: Rita Schmidt Sudman  
Interviewee: Jack Barnett  
Date:

were they going to do this? Let's maybe start in the upper basin and work our way down.

J. Barnett: Well, I think you first need to understand that in the 1974 Act, the Salinity Control Act, the Congress committed the United States to come up with a plan and more specifically, the Department of Interior and the Bureau of Reclamation for salinity control. And much of it was to be funded by the Federal Government with basin states cost sharing because a great deal of the salts are being contributed from Federal lands. So the Salinity Control Act in 1974 authorized four projects and a number of studies but in reality it was an act that was put together in a hurry and those projects were not well thought out and some of them became real and some of them did not.

R. Sudman: Were they really salinity control projects or were they water projects?

J. Barnett: On no, they're definitely, just strictly salinity control issues.

R. Sudman: What were they going to do?

J. Barnett: Well the one that has been most successful and is still in service is a little anomaly to the program. There are

Interviewer: Rita Schmidt Sudman  
Interviewee: Jack Barnett  
Date:

naturally occurring brines that are discharging to the Delores River and Western Colorado. Bureau of Reclamation has drilled shallow wells to intercept those brines and bringing those brines to a collection point and injected into a 16, 000 foot injection well and that's --Uh-- that one worked. It took a long time to put it in place. It took a lot more money than we thought, initial plans, EPA thought everything could be done in two or three years other than two or three decades but the Paradox Project is in place and is taking out about 20% of the salt we not control in the Colorado River system.

R. Sudman: So that's a big chunk of salt.

J. Barnett: It is.

R. Sudman: The other projects? What was wrong with them?

J. Barnett: Well there was, the Grand Valley of Colorado was becoming a salinity control project and it was authorized then. But we're doing things in a different way that was initially envisioned. Initially, we went in and lined some of the very large canals with concrete or membranes and that's quite expensive. We're working more now the smaller

Interviewer: Rita Schmidt Sudman  
Interviewee: Jack Barnett  
Date:

laterals and the on farm irrigation practices in the Grand Valley but it's kind of our grandfather project and it's been an important one and so that one worked as well, although our method of controlling salt changed. A third one was Las Vegas wash and we --Uh-- haven't figured out much to do with Las Vegas wash over the years. There was some leaky ground water in the Henderson area that we have been able to pipe but that's about it. It's been a small effort. The last one was a place they called Crystal Geysers in Eastern Utah where an old oil well was spewing brine out of the old well into the river but it didn't turn out to be feasible to control that source and it still, but it's a small amount of salt, it isn't very much. So those were the four that were authorized, but many other studies were also authorized.

R. Sudman:

Well in this first authorization, you said 75 percent of the land is A Basin or Federal and so that sort of set the tone on the Federal Government picking up the major cost of this. Is that correct?

Interviewer: Rita Schmidt Sudman  
Interviewee: Jack Barnett  
Date:

J. Barnett: That was one of the rationales for the Bureau of Reclamation taking the lead. Federal responsibility and of course controlling the salt was also latched to the commitment to Mexico. If we didn't control the salinity above the Imperial Dam then the level of salt going to Mexico wouldn't be acceptable, even if we didn't increase it more than 115 parts, it would still be bad water if we didn't solve the problem in the United States.

R. Sudman: So I understand that, and these figures probably haven't changed too much over the years, about half of the salt is natural occurring and about half is from man's activities, including, of that half, about 40% from agriculture. Is that correct? How would you --

J. Barnett: Those are good round numbers and we have not learned effective ways to control much of salt. What we have learned the salt is in the agricultural areas.

R. Sudman: What have we learned there?

J. Barnett: Well we've learned that if we can provide those delivering irrigation water and those applying irrigation water with the tools to be more efficient then we stop the de-percolation of

Interviewer: Rita Schmidt Sudman  
Interviewee: Jack Barnett  
Date:

waters that are beyond their needs, beyond their crops needs and that the de-percolation goes down into the primary the Old Marine Shale's. Particularly one geologic formation called the Manko (Phonetic) Shale and it returns back to the river system full of salts. So a typical farmer say in the Grand Valley because we mentioned the Grand Valley might be receiving water that's 300 parts total dissolved solids but the return flows might be 2000 part total dissolved salts.

R. Sudman: I see -- so this is different than some places in California I'm familiar with where actually the farmers wanted to put on more water to flush out the salts.

J. Barnett: Well that becomes the last ditch effort so to speak if your at the bottom of the system and your getting you got salty soils and you've got salty water, then you've got to apply more water to dilute the salts out of them. In the Imperial Valley for example, the way the solve that in part is to put in a lot of drains so they can move the salts out of the soils into the drains and back, ultimately in this case, the Salton Sea. But upstream, that's not what we do.

Interviewer: Rita Schmidt Sudman  
Interviewee: Jack Barnett  
Date:

We're not trying to leach more salt out of the soils. In fact, subsoil's in the upper Colorado River basin probably have Uh-- how can I best describe it? Something like an infinite amount of salt. So we would be leaching forever.

R. Sudman: Now what incentives are there for farmers to do this work?

J. Barnett: Well that's a good question. When we, let me first explain, that when the program was authorized it was a Department of Interior Bureau of Reclamation program but there were, those would argue, particularly a congressman named George Brown from California that --Uh-- the Ags strategies had a lot of promise and after a period of time we all became to believe that. So the basin states drafted a legislation went back to Congress got the Salinity Control Act and created a Farm Bill portion of the Salinity Control Program. And it was a risk it was a political risk as to whether or not the farmers would come forward be willing to change the irrigation systems their grandfathers had put in-- in the upper basin so that somebody a thousand miles down stream would get better water supply.

R. Sudman: But they were going to get money for that?

Interviewer: Rita Schmidt Sudman  
Interviewee: Jack Barnett  
Date:

J. Barnett: They did. And one of the incentive was, “well we’ll give you part of the money but you need to put some of your money in”. So typically, over the years, the farmers would put in about 25% for the improvements and so, -- you know – in the Grand Valley, it might be gated pipe with timers on the gated pipe and the (inaudible) Basin of Utah it might be sprinkler systems, in the (inaudible) area of Wyoming it’s probably going to be center pivots, and so that’s all well and good. You buy practice and it has the potential of being a lot more efficient with the use of water. But it isn’t much of an advance if the farmer isn’t also will to use the equipment properly and change these irrigation practices.

R. Sudman: How do you accomplish that to motivation?  
What motivation?

J. Barnett: Well, in addition to the 75percent the program provides for the farmer, --Uh-- I think the greatest motivation has been that the farmer sees he can make more money and we’re happy if he sees that because then he wants to sign up and so we’ve had farmers standing in line after we got the first few farmers starting down the path. A farmer in a field in

Interviewer: Rita Schmidt Sudman  
Interviewee: Jack Barnett  
Date:

(inaudible) Utah might have said I'm never going to do this but then he'd drive the coffee shop and along the way he'd look at his neighbors field of hay and he'd say "he's got too many bails of hay and I don't see him out there working."

Well he came to realize that his neighborhood participated in the program, was getting more production from his land, with more efficient use of the water and was working less hours moving the water around and so then he became a recruit too and joined the program and ultimately in the (inaudible) area, because I bring that one up, it's a small discreet area, we had some farmers that were never going to get in the program and the last one signed up the other day. We had 100percent. So we finished that area and 100Percent participation and it's really a success story.

R. Sudman: Does that really, does that happen almost all the time that farmers really can benefit by going to more efficient systems?

J. Barnett: Almost all the time. If there's a rotten egg out there some place, that is to say if something goes wrong and some farmers don't find that they benefited from it then the word

Water Education Foundation  
Water in the West

Interviewer: Rita Schmidt Sudman  
Interviewee: Jack Barnett  
Date:

Page 18

gets around the neighborhood pretty quick and don't find any other recruits, but fortunately that doesn't happen very often. Almost always it's a benefit to them. So if they've been standing in line in the political gamble paid off that they've been willing to participate so, we've got benefits for them but the programs still keep telling everyone, it's a water quality program to improve the quality of water in the lower basin.

R. Sudman: How much of the other states --Uh-- you've given an example, in Utah? So what about the other states? Is the agriculture cooperating to their benefits along the river?

J. Barnett: They are, --Uh-- the upper basin states are where the salt comes in. New Mexico's only got a small part of the Colorado River in their state but they have had project in New Mexico with an irrigation company and was quite successful. Colorado is probably where we spent more money than any other state and --Uh-- yet there's a lot more to be done in Colorado because they have some big irrigated areas on the Manko Shale (Phonetic) in the Colorado River drainage. --Uh-- the most feasible project

Interviewer: Rita Schmidt Sudman  
Interviewee: Jack Barnett  
Date:

in Wyoming was what we call the Big Sandy Area or Farson (Phonetic) and we've about completed that project as well. And then in Utah, there's the areas referred to as the (inaudible) Basin and the Price San Rafael area and we're about three fourths the way through with the (inaudible) Basin maybe 40percent through with the Price San Rafael.

R. Sudman: This must be a pretty good deal for the irrigation hardware companies because the feds are paying 75percent and the farmers are paying 25 percent and it makes it attractive to be in that business?

J. Barnett: Well we've seen businesses start up or businesses thrive that were willing to go out into the hinder land and take to the farmer the technology and maybe even invest a little bit in it. --Uh-- We have a problem in selling sprinkler systems in the (inaudible) area of Colorado. Those farmers over there believe that sprinklers didn't work 30 years ago and they won't work today. Well we like to think they will the technology's changed. We have a lot softer rain coming down now than we used to 30 years ago from sprinklers

Water Education Foundation  
Water in the West

Interviewer: Rita Schmidt Sudman  
Interviewee: Jack Barnett  
Date:

Page 20

so with the cooperation of One Sprinkler Company and the Basin States Cooperative Funds, we got one very progressive farmer to put on a center pivot and it's been very successful and that's what we wanted. This gentleman was willing to take the risk and take all the notes and document all of his production and all of his costs and so now we're starting to see some more applications for sprinklers in that area.

R. Sudman: So how much of your time is spent working with agriculture trying to sell this new way of farming?

J. Barnett: Not very much. We rely primarily on the states Department of Agriculture and more so to Federal NRCS.

R. Sudman: NRCS?

J. Barnett: Yeah. Natural Resource Conservation Service, they have personnel in every area and we have two sources of funding with respect to the Ag effort. One is an appropriation under the Environmental Quality Incentives Program, the equate program of USDA administered by NRCS and then the fed basin states for every dollar they spend in the Federal Ag Program we have to come up with another 43 cents. And

Interviewer: Rita Schmidt Sudman  
Interviewee: Jack Barnett  
Date:

we've created, what we call, a parallel program where we also go out into the field with our cost sharing money that the Salinity Control Act requires the basin states to come up with and offer contracts to producers but we didn't want to have a competitive technical issue so we've contracted with the Federal Agency NRCS to do the technical work for the states contracts as well. So if a producer is in --you know-- if he's in Vernal Utah he just goes over to the local Federal Office and he finds a person there that's willing to help him designing a sprinkler system under the Salinity Program for his farm he agrees to it and then he realizes that he might get funding from Federal Program or he might get funding from State Parallel Program.

R. Sudman: Now has the pressure for cost sharing grown since the 1970's, I know in the 1980's there was a push to increase that?

J. Barnett: There is currently a press from Washington to try and lower the amount of federal funds that are going into the effort and we're currently studying that. We have a committee composed of State Representatives and Federal

Interviewer: Rita Schmidt Sudman  
Interviewee: Jack Barnett  
Date:

Representative to find out if we could still get good participation at a lower cost, that is a lower rate of cost sharing. --Uh-- but we have to keep our minds on the target downstream. It's a different program than many of the Ag programs that are intended to just benefit the immediate community or intended to benefit the farmer.

We're intending to reduce the tremendous salinity damages down the stream and so we have to make sure we have the producers eager to participate.

R. Sudman:

Well, now that brings up, you've talked about incentives in the care, what about stick, what about it's regulation?

If about half of the salinity is coming from manmade ways -  
-Uh-- what about regulating and charging a user fee or doing something to collect funds like that? Is that ever talked about?

J. Barnett:

Well the Salinity Forum has policies and one of those policies deals with point discharges and the states have agreed to implement our policies in their, what we call, NPDS program, Point Source Discharge Program. And, so industry and municipalities are regulation by the Forum's

Interviewer: Rita Schmidt Sudman  
Interviewee: Jack Barnett  
Date:

policy and so for example, an industry is not allowed to discharge salt back to the river system more than a ton a day, which isn't very much salt. And a municipality is not allowed, through their sewage returns to return water that's more than 400 parts per million, milligrams per liter greater than their receiving water, but when we look at that, that's a small amount of the salt water that we could be regulating.

R. Sudman: How much is it?

J. Barnett: Well I can't give you exact amount, but maybe like 4 or 5 percent.

R. Sudman: Which is the whole discharge NPDES system is only 4 or 5 percent.

J. Barnett: That's right.

R. Sudman: So that's the direct discharges from --Uh-- sewers, cities and all kinds of places like factories, etc.

J. Barnett: That's all right. And --Uh--you know-- under the Clean Water Act EPA and Federal and states agencies have learned how to control those point discharges. But the non-point discharges have always been the general category of voluntary compliance.

Interviewer: Rita Schmidt Sudman  
Interviewee: Jack Barnett  
Date:

R. Sudman: But now agriculture's under, their pressured certainly in California we see the water board there saying, "your not going to have a waiver anymore and we're going to look into the amount of pollution the river can hold TMDL if your familiar with that term, and so agriculture is starting to have volunteering programs to avoid regulation which they see coming down the pike from EPA. I wonder if that's the case in other states.

J. Barnett: Well there are mandatory TMDLs been established in several of the states and yet, there is no mandatory program for the accomplishment of those goals beyond the point discharges and so it's still filled in the upper basin and it's going to be by friendly persuasion but the pollution's going to be controlled not by regulation and I'm glad that notion hasn't come up stream because my program would have a hard time with lower basin states demanding that upper basin states agriculture should change their practices to benefit the people down stream. That would be a major war on the Colorado River system. But we're not there because we've been getting enough voluntary producers

Interviewer: Rita Schmidt Sudman  
Interviewee: Jack Barnett  
Date:

that we're able to use all the funds we've been able to acquire.

R. Sudman: So you don't see regulation coming either from Washington or the State capital?

J. Barnett: I don't see it moving through the upper basin. I think Colorado, or California is a leader in some cases in these issues and I don't see it happening in the upper basin at the current time.

R. Sudman: --Uh-- so what are some of your concerns now on --Uh-- it sounds like you've got a successful agricultural program. What are some of your big concerns about salinity on the river today?

J. Barnett: Well we've got a successful agricultural program and I ought to introduce one other notion and it's not all the Department of Agriculture, because Bureau of Reclamation monies are now being spent to improve delivery systems. So often it's a partnership between the delivering canal company that would be using assistance from the Bureau of Reclamation and the Department of Agriculture in the basin states funds that would be helping the farmer once we get a

Interviewer: Rita Schmidt Sudman  
Interviewee: Jack Barnett  
Date:

·  
better delivery. So it's an interesting mix of state and federal agencies and funds as working together and I'm just happy that I'm working for an outfit that everything's done by consensus because everybody believes in the same goal.

R. Sudman:

Well, when you say consensus, tell me how this works? You have a commission and are there people on it from other states and do they get appointed and how does your system work?

J. Barnett:

Forum --as I said-- was created in '73 and is made of up to three appointees from each of the seven Colorado River basin states. Appointments are made by the governors and typically you'll find a Water Resource lead there from State Government and you'll find a Water Quality Administrator from State Government and then if the governor chooses to appoint a third member, it's a variety from the public sector or from their Agriculture Department, depending on what that state might choose to do. So we have these varied interests coming to the table and we always have a unanimous vote. We've never moved ahead with one state voting "no" and moved ahead with a program. Now each

Water Education Foundation  
Water in the West

Interviewer: Rita Schmidt Sudman  
Interviewee: Jack Barnett  
Date:

Page 27

state only gets one vote, so a state may have to caucus and say "wait a minute, two of us think this way" but ultimately we get all seven states support before we move ahead.

R. Sudman: Tell me some of the things you voted unanimously on in the last few years?

J. Barnett: Well we've always been united on the level of funding that we believe --

R. Sudman: That you've always wanted?

J. Barnett: Well that's right, but the, you need to understand that for every federal dollar that's spent there's another 43 cents coming from the basin states and you might be interested to know, of that state money, 85% of it comes from the lower basin. There's a lower basin fund and so, when they say they'd like more federal money, they also have to know that they have to follow it with their cost sharing states monies.

R. Sudman: Now the reason that the lower states bear this burden is because --Uh-- they have more increased salinity even though you said it was being created in the upper basin?

J. Barnett: Well, I think, I wasn't there at the time, you've got to go back to '73 and '74 but there's 85%, and 15% is found in

Water Education Foundation  
Water in the West

Interviewer: Rita Schmidt Sudman  
Interviewee: Jack Barnett  
Date:

Page 28

the Salinity Control Act of '74. But I think that the debate was probably, where the lower basin states were being damaged by the pollutant coming in up stream, so we can either pay for improvements or we can try to enforce the improvements. And the lower basin states I think said "it's a good deal for us, it's very economically affordable we want the program to go ahead. We'll come forth with 85% of the money." And so I think that was one of the notes that was sounded that made the upper basin states say --okay --we can join in. When I first went to work for the Forum, I, we were just starting to implement and I was hearing representatives in the upper basin states saying yeah--we can buy off on this but I hope they find it in another state where we can implement it because this is going to be really disruptive to my water community if you were to come into my place trying to deal with our canal companies and delivery systems." And that's all turned around, now it's very competitive, --Uh-- the three, four Upper Basin States wants the Bureau of Reclamation money to alter the canal systems. They bid for it.

Interviewer: Rita Schmidt Sudman  
Interviewee: Jack Barnett  
Date:

They compete for it and most often, the companion to that, is then to bring in on farm improvements for the Ag program as well. And the basis states cost share on both of those efforts.

R. Sudman: In your time as Executive Director, was there --Uh-- one or more issues in which --Uh-- you may have gotten that unanimous vote but it might have been difficult to get it or whether there was major disagreement that you saw?

J. Barnett: Well I think the people I work for are pretty States rights (Unintelligible) handed. And if they had any disagreements it might have been how strident they should be in arguing their case with the federal agencies or before the Congress or how aggressive they might, should be to exert their political influences and I think the Salinity Forum, a good part of its' success, is because it does have political influence. And if there's debates -- it might be on how best to assert ourselves and how aggressively we assert ourselves. Not in the desired outcome.

R. Sudman: How does that political influence manifest itself? You have say in the West, a poor state like New Mexico with a very

Interviewer: Rita Schmidt Sudman

Interviewee: Jack Barnett

Date:

Page 30

powerful Senator --Uh-- you have a rich state like California with maybe a junior senator and a senior senator and then you have interest groups with a lot of money.

Agriculture has money and cities have a lot?

J. Barnett:

They --Uh-- every time, and I've been involved in moving about six or seven pieces of legislation through the Congress and we've always ended up with a lead Senator or Congressman from one of the upper basin states pushing the bill. But then we've always had up to 14 basin senators as co-sponsors and -- you know -- a couple of dozen congressman so that's the way we've tried to work it to make it look like it's a basin wide concern and I think the reason we get sponsorship, the lead sponsor from the upper basin, is because that was our desire because then it doesn't look like the lower basin un-powerful senator in the lower basin was trying to thrust and change on the upper basin.

R. Sudman:

And again, all of this legislation is to get money to implement these programs?

J. Barnett:

And authorize the programs, yes that's right.

R. Sudman:

I just had a thought, but it just went --Uh--

Interviewer: Rita Schmidt Sudman  
Interviewee: Jack Barnett  
Date:

J. Barnett: Well, let me follow that by saying we've been fairly successful. The program's moving along at kind of a record pace right now. Between the Department of Agriculture's program and the Bureau of Reclamation's program, the basin states cost sharing and the producers contributions, we're at almost a annual budget of about 50 million dollars.

R. Sudman: Now does that budget come through the Bureau of Reclamation and through Agriculture, Forestry, does it come through their budgets to you?

J. Barnett: No, it doesn't come to us, they spend their money. So through the Department of Interior, Bureau of Reclamation there is an appropriation, currently around 10 million dollars, a little less than--that, --Uh-- through the equate program of the Department of Agriculture, they're currently getting about 20 million dollars for the Ag program and then, as I said, we cost share on every one of those dollars with 43 more cents.

Water Education Foundation  
Water in the West

Interviewer: Rita Schmidt Sudman  
Interviewee: Jack Barnett  
Date:

Page 32

R. Sudman: So your Forum that you are in charge of doesn't really parcel out any federal money, you just promote the programs that are available through the federal agencies?

J. Barnett: Well that's mostly correct and it's technically correct. The Salinity Forum has a great deal of influence on how the federal agencies spend their money. They're coming to us and asking us if this is acceptable, if this is the right way to move ahead. Seldom is a federal agency implemented without the support of the Forum.

R. Sudman: Now who how does the Forum get its budget?

J. Barnett: Well the Forum is very limited. They hired me and that's about it, so, their funds are coming from stated dues and -- Uh-- we don't have much money. The --Uh--

R. Sudman: What is your budget?

J. Barnett: We're about \$150,000 a year.

R. Sudman: So --Uh-- when you say state dues how does that come from the various states?

J. Barnett: Well it's kind of interesting. There's a legendary State Engineer from Mexico named Steve Reynolds and he was very much --Uh-- state's rights and New Mexico rights and

Water Education Foundation  
Water in the West

Interviewer: Rita Schmidt Sudman  
Interviewee: Jack Barnett  
Date:

Page 33

when they hired me in 1980 I had to take it on the job with faith that they'd find funding for us. They initially knew they had an EPA grant because EPA wanted the basin states to develop the salinity Forum and have a (inaudible) that was united, but after the first year we had to find our own source of funding. So the states met and I remember the meeting very well. We decided, what should be budget for the next year and how much would they have to provide the legislature for and how much would each of the states have to contribute? Well Steve Reynolds was not going to let California contribute the (Unintelligible) share of the money to run this state organization. So after negotiations, we decided that half our dues, half of our budget, would be paid by each state contributing one seventh. The other half would be based on each state parentally paying its' alleged entitlement to Colorado River waters. So New Mexico pays one seventh of one half and then they pay a much smaller part of the other half because they have a much smaller allocation on the Colorado River system. We had to agree also that nobody was agreeing that the numbers we

Interviewer: Rita Schmidt Sudman  
Interviewee: Jack Barnett  
Date:

were using to how much water they were entitled to, had any influence on other discussions in other arenas. No one was agreeing to how much water they were entitled to. It was just for setting our budget all alone. So --

R. Sudman: Well now you touching on, on, on the legendary fights that have gone on between the individual states and the upper and lower basin and I'm sure, through the years, you witnessed some of those, especially in the last 20 years -- Uh-- with more active arguments about water in the Colorado River that maybe -- you know -- previously before that.

J. Barnett: That's very much true and I, when I took the offer to become employed by the Forum, I thought, the (inaudible) put the Colorado River things were (inaudible) -- state. But when I came on board, things were pretty quiet.

R. Sudman: And that was about 1980?

J. Barnett: Yes, and --Uh-- the lower basin states, of course don't have a formal organization. The upper basin states are organized and the upper Colorado River commission and those meetings were pretty boring. --Uh-- but it took another ten

Interviewer: Rita Schmidt Sudman  
Interviewee: Jack Barnett  
Date:

years and then things started to liven up and I've really enjoyed the position I've been in because I know all the players very well. I get to go out to dinner with them, I watch all of the events they're engaged in but one day they will represent their governor as a gladiator and they'll go out and do battle and the next week, during my Forum meeting, decide they're going to get along with everybody around the table. And so it's been interesting to watch the mix of , of --Uh-- emphasis that these appointees of the governor have been able to bring together and keep good relationships, one with another, in the salinity forum while still sticking hard to what they believe they ought to do for their own state.

R. Sudman: What livened it up or made this big change on the river where this became so contentious? Because I agree with you on covering water issues and those years, I didn't do too much on the Colorado River because it was quiet and there wasn't much fighting about it?

J. Barnett: Well there were two things; I remember when I first was working the Nevada representatives saying "we will never

Interviewer: Rita Schmidt Sudman  
Interviewee: Jack Barnett  
Date:

need all our Colorado River water”. --Uh-- and they brought graphs and they showed us how fast they were increasing their use of the water and it looked like they had another century of water so to speak at their current rate of influence.

R. Sudman: This was in about the early 80's?

J. Barnett: Yes, and that turned around within just a few years, as you well know. And so, Nevada recognizing that it needed more water than the allocation in the compact --Uh-- brought things faster to a focus point than anything else, until Arizona came along. I think much to everyone's surprise, agreed to start storing it's Colorado River water in the ground. So all of the sudden, we've got the lower basin states with California just historically using more than it's entitlement, all of the sudden we've got the lower basin states up to their compact entitlement. We never anticipated that would occur that rapidly. And it wouldn't have if Las Vegas hadn't of grown so fast and if Arizona hadn't decided "we'll start storing our entitlement". So that

Interviewer: Rita Schmidt Sudman  
Interviewee: Jack Barnett  
Date:

accelerated but what I think was inevitable to come anyway

--Uh--

R. Sudman: And you didn't mention California but there became this hue and cry that California should cut back its Colorado River use.

J. Barnett: Well sure. As I've indicated, they'd always taken more. It was appropriate for them to take more because the compact allows you to take what's not being taken by your sister states if they don't ask for all their entitlement. But when the other two states wanted their entitlement in the lower basin then the lower basin share was fully used in California was confronted with the pressure from all the other six states to go back to their four for.

R. Sudman: Now what you're describing is an increased pressure in the Western States due to urban growth. How does this urban growth and how will it in the future, impact the salinity problem?

J. Barnett: Well there's two factors. The damage done by the salt in the water is partly in agricultural areas. Partly because if you applying too salty of water, you can't raise crops you

Interviewer: Rita Schmidt Sudman  
Interviewee: Jack Barnett  
Date:

want or they don't yield as much as they would if they had better water supply. So -- you know -- about half the damage is the lower basin. We figure now that we can quantify about 330 million dollars worth of damages in the lower basin each year by the salt. And about half of that, maybe a little more than half is agriculture. But the other half is in the urban areas, industrial and in the households and every time Southern California adds another city the size of Salt Lake which is every year, then there's that many more people that are being damaged by the salt in the river and so the damages just keep growing and growing and --Uh-- so that puts more and more pressure. We've always been below the numeric criteria or the water quality standards but we've committed to. But now all seven states are agreeing "we're going to try and do better than that" because our goal now is to try and reduce the damages the 330 million dollars down stream, in the United States not considering Mexico.

R. Sudman: Now it looks like with the numbers of your criteria, it looks like they are improving and you are getting the salt out.

Interviewer: Rita Schmidt Sudman  
Interviewee: Jack Barnett  
Date:

J. Barnett: Well we think that --Uh-- in round terms going into Lake Powell three decades ago, there was about nine million tons of salt each year. We believe our programs have reduced it to about eight million tons. So we've taken out more than 10% of the salt that was getting to Lake Powell and that's significant. It results in lowering the total dissolved solids we think in the waters that's being delivered out of the Colorado River in the lower basin by about 100 milligrams per liter. So instead of getting 700 part water into the Los Angeles basin for example, their getting 600 parts and that is very important because that's still higher than you want to deliver your drinking water if you can. But it means that the mix they do with the Northern California water is a lot more advantageous than if they had seven or eight hundred in part water that they were mixing.

R. Sudman: But those, those big cities of Santa Barbara to San Diego, Los Angeles, etc. They're getting a fairly salty river from the Colorado River – salty water?

J. Barnett: They are, I kind of say "well if your going to drink Colorado River water, you ought to expect it to be salty,

Interviewer: Rita Schmidt Sudman  
Interviewee: Jack Barnett  
Date:

that's the nature of the beast". But it's not as salty as it would have been and --Uh-- hence the damages are a lot less than if we didn't have the Salinity Control Program. You were asking me about urban growth and there is another factor and it's in the upper basin. Now we don't know the full impact of this but we're seeing that some of the agricultural areas where we have implemented better irrigation practices for salinity control are now being urbanized and so where we pay to put sprinklers on the field now, there's homes in the field and we're not sure what that impact is on the total salt load. --Uh-- we've got studies trying to figure that out because if you take an area out of irrigation agriculture and put it into a half cement but half lawn subdivision, --Uh-- did we gain or lose salt contribution? Grand Valley is probably the most notable area where there's growth in the upper basin and we're seeing sprawl out into the irrigated fields – change.

R. Sudman:

So will you be spending some of your time and effort to one, promote conservation and two do awareness, like don't use a water softener because it adds salt? (Background

Water Education Foundation  
Water in the West

Interviewer: Rita Schmidt Sudman  
Interviewee: Jack Barnett  
Date:

Page 41

Noises Phone Ringing) (Talking to someone in background) There have been some people like Crystal has done some people, but then there's people she told me, she said try to get a few Californians because they haven't had much success doing that and --Uh-- I tried to get Tom Levy but he refused to do it.

J. Barnett: Oh really?

R. Sudman: Yeah.

J. Barnett: I would have thought --

R. Sudman: He's funny, he's a funny guy. I'm sorry about that but -- Uh-- might as well pick up Sue -- Sue McClerg (Phonetic) is coming in and we're going to that Colorado River, are you going to that at all?

J. Barnett: No I don't think so.

R. Sudman: Well we're going because you know to put on a thing in the Fall and so we'll sit there and get some ideas and talk to some people and so I'm going to pick her up and take John back. So we'll just do, where did we leave off there?  
I'm sorry about that.

J. Barnett: Um development.

Interviewer: Rita Schmidt Sudman  
Interviewee: Jack Barnett  
Date:

R. Sudman: Yeah. You were talking, you wanted to make a point about urban then I thought I'd ask you just a quick thing about irrigated agriculture in the west in general because we're going to do the salinity program in California and then anything else you think we've forgotten.

J. Barnett: We probably ought to talk about the potential for energy development in the upper basin too.

R. Sudman: Okay. With the salinity?

J. Barnett: Uh huh (affirmative).

R. Sudman: Okay. Okay. All right. Let's start with that urban thought do you want to or are we through there?

J. Barnett: I think I was through.

R. Sudman: Okay. All right. Let me ask you Jack about irrigated agriculture, not necessarily related to the Colorado River? On, in California there is a lot of salt build up in the Central Valley. Certain parts of the Valley and there is no political will to make a solution to get the salt out. --Uh-- their talking about maybe, -- you know -- taking agriculture out of production because you can't make a decision on to put the salt out into the ocean and go through the coastal

areas or the public doesn't want that, or the Congress doesn't want that so it's a big problem in California's Central Valley certain areas that salt is building up and it's affecting agriculture and it's starting to effect other areas too. Do you have any thoughts about that?

J. Barnett:

Sure. I think that if you look at the history of mankind and civilization, many of the civilizations grew up around irrigation agriculture and their demise could be part attributed to they just salted up their soil and they messed up the nest. And when you bring water into an area, whether it's Colorado River water or Northern California water, it's carrying salt. So if you want to back off and think well that's a slurry line of salt all be it really diluted, it's a slurry line of salt, it's delivering train loads of salt every year and if we don't take it out of the area we bring it into, we're going to have a salt build up, a salt sink. And that's happening. It's happening in Phoenix, it's happening in Las Vegas -- it's happening clearly all across the Coastal Plain in California and so even if there, our Salinity Program is very successful, there's still a salt load coming

in. It won't be as great as it was, we will defer a lot of the costs and delay a lot of the hard decisions, but with time, you've got to get as much salt coming out as you've got coming in or you're just going to have to let your ground water bodies be totally salted up.

R. Sudman: Why should the public care about this?

J. Barnett: Well it's their water supply. --Uh-- --you know-- how dependent is every area I just mentioned on their ground water? And --Uh-- so they've got to get the salt out of there and of course you're seeing that in some of the Southern California areas so, though at a great expense. You're seeing some pumping of ground water that's very saline now, running it through reversed osmosis plants, running a brine line out to the ocean to dispose of the concentrated salts and then re-using the re-claimed water. We're getting salt out of the, we're stopping salt from getting into the river at about oh, \$40-\$50 dollars a ton. That approach is probably going to cost, I don't know -- a thousand two thousand dollars a ton and so our program spreads the

Interviewer: Rita Schmidt Sudman  
Interviewee: Jack Barnett  
Date:

benefits wide and costs much less per ton but there's going to be local areas where you're going to half to go to that.

R. Sudman:

Now Southern California urban area can afford to do a system like you just described, but what about agriculture in the valley two hundred miles away from the ocean? Uh-- what are their choices?

J. Barnett:

Well, -- you know -- there's a whole discussion about the Salton Sea and how much salt it ought to receive and so there's a case and point where if you use less water in the Imperial Valley then your going to get less salt in the, the, into the Salton Sea but you're also going to get less water in it. So that's a delicate balance. If you look further away like Phoenix, where does Phoenix take it's salt? It's a long ways if they decide they're going to half to get it out of there.

R. Sudman:

What do they do with it?

J. Barnett:

Well right now it's just accumulating. --Uh-- and so, but they're concerned, they're trying to figure out their options and obviously when they get some ground water that's too saline they can desalinate some of it or they can desalinate

Interviewer: Rita Schmidt Sudman

Interviewee: Jack Barnett

Date:

Page 46

their sewage returns --Uh-- but they still have the concentrate. What are they going to do with that?

R. Sudman: What does agriculture does conservation's those programs you described, that works in the Phoenix area too?

J. Barnett: Sure it does to a degree because the more efficient they are with their irrigation, their application of water, the less salt they will leach back to the river system. But they're not faced with the large salt loading that we are, where we have marine shales.

R. Sudman: And that's a part, that's part of the Central Valley in California?

J. Barnett: That's right and we share a problem with the Central Valley in California, in that the, one of their problems is minor constituent and that's selenium and we're finding that there are more concentrated sources of selenium in certain of our drainage. Particularly, in the Gunnison and the Grand Valley area and it's of concern to the local residents there. So when we do a salinity control program, we're doing it to keep the total dissolved solids out but we know that we're

Interviewer: Rita Schmidt Sudman  
Interviewee: Jack Barnett  
Date:

some what proportionately keeping the selenium out as well.

R. Sudman: Now as a geologist, you know when the Federal Projects were built 50-60 years ago this was known that there was a salinity problem and a salt build up and there were actually plans too, in California, --Uh-- move that salinity out into the Pacific Ocean. But later on, when the time to do that came, the --Uh-- politics didn't work because the folks in Monterey and San Francisco Bay didn't want that salt coming from the Valley. Do you have any thoughts on that?

J. Barnett: Well -- you know -- there's a saying in many aspects of our life, "timing is everything" and they clearly couldn't gotten that discharge canal built 20 years before the problem became so severe and they closed everything down because of Kesterson (Phonetic). No, I don't know what the solution is going to be there. It looks to me, I'm guessing, that they're just going to have less irrigation agriculture. Because you've just enumerated the reasons it doesn't look like they're going to get to discharge that out to the ocean.

Interviewer: Rita Schmidt Sudman  
Interviewee: Jack Barnett  
Date:

--Uh-- but the problem in a larger sense is so big that we have to solve the problems. Phoenix is not going to go away because their ground water's going to become more saline or Toucsan (Phonetic) or Las Vegas or Southern California. And so, we're going to have to find problem, -- Uh-- answers but they're just going to get more and more expensive. And from our point of view, every ton we stop getting into the river system is a ton that doesn't have to be dealt with later and you asked, well surely the engineers knew 30 and 40 years ago when they were building these projects that this might be a problem, well if they thought about it probably, but that wasn't their task. --Uh-- I'm reminded of, I would like to think that the father of the Salinity Control Forum was a guy named Myron Holbert (Phonetic) from California and he had the vision to see that salinity was going to be a big problem. He was working for the Colorado River Board of California. He was instrumental in getting the Salinity Control Act passed and he was the one who persuaded me to work for him, work for the Salinity Forum. But, Arizona had a leader that was

also very forthright and his name was Wes Steiner (Phonetic). Wes was so concerned about getting, just water, just water to get the Central Arizona Project passed that they had a gentlemen's agreement between Wes and Myron and that was -- Wes said --I'll support you in anything your doing for salinity control -- but that's not where I can put my efforts right now. So I'm on the team, but don't call me to shoot any of the balls I'm going to try to get water to the Central Arizona Project. And -- well as it turns out now, they've got the Central Arizona Project and now Arizona is a fully engaged partner in the salinity effort. --Uh-- Nevada, their virtually only source of water is Colorado River so whatever comes down to Lake Mead is what they drink and so they're --you know-- six -- seven part water and if you're a visitor to the city, sometimes you'll think that tastes a little salty. But that's not their biggest issue. And so their on the team for salinity but that's not, they're not shooting the shots as much because they're concerned about their water supply. So -- so I think if you go back to those early engineers that might

Interviewer: Rita Schmidt Sudman  
Interviewee: Jack Barnett  
Date:

have, should have had the insight about the salinity problems that were being created, it was kind of like, “that’s for another watch, my job is to build the dam or to build the canal or build the pipeline” and that might happen. In the Wilton Mohawk Project of Arizona, you could think it was rather surprising the Bureau of Reclamation didn’t see the problem coming because it came within five or six years of when they built the project. And so, they had 3000 part water to dispose of or else that project was just going to go down the tubes in just a very short period of time. And so that one came home to roost a lot quicker than the other projects that have been able to put off this problem dealing with salt for decades.

R. Sudman: But maybe there are some places in the West, including that example in Yuma, where irrigated agriculture just should not exist. Would you agree with that?

J. Barnett: No, I don’t think I can say that. --Uh-- because, I work for the seven states who are very supportive of all their uses of water and I, in some ways, feel it’s a tragedy when I see irrigation agriculture going out and --

R. Sudman: But don't, don't you really agree that, if, if, if it's going to be a really tremendous salt problem and if somebody else has to pay, like the tax payers, that maybe that particular place is not good for irrigated agriculture? Everything can't be everywhere.

J. Barnett: Well, yes, but I would ask if that person that doesn't think they should be paying, wants to buy the grapefruits at the grocery store, I mean, it's all inter related. --Uh-- the benefits derived from the irrigation agriculture as you see when you go to the grocery store, we're getting less and less of our produce from the United States and that's a very deep subject to whether we're happy with that outcome. Because that's where we're going I remember Wes Steiner (Phonetic) was asked by Dan Lawrence (Phonetic) from Utah one day when he was explaining what was happening in Phoenix and all of the acres and acres of citrus coming out Dan asked "where am I going to get my oranges?" and Wes said, "I don't know, but it won't be from Arizona."

R. Sudman: Now, I know you wanted to mention something about energy.

Interviewer: Rita Schmidt Sudman  
Interviewee: Jack Barnett  
Date:

J. Barnett: Well the upper basin states have not developed all of their compacted apportioned water supply and they have various projects in mind to accomplish that and they're trying to project ahead how soon they'll need all the water that their compact allows them to use. But the wildcard is energy development. And right now, we're seeing energy development just going rampant in the upper basin. Every, you can just, if you drive down one of these highways at night, there's just oil rigs every place. So we're trying to understand a couple of things about what happens when we have this energy development. One, will they be discharging salts or consuming water that's going to change our balance? And secondly, it's just the land disturbance going to cause a slug of salt coming into the river system? Because some places you'll look and they're drilling on ten acre centers and so when you look down from the air, it looks like the whole landscape is encompassed with the oil, gas wells. So we've asked the Bureau of Land Management and the US Geological Survey to try and to try and analyze those impacts. It, in a very preliminary

Interviewer: Rita Schmidt Sudman  
Interviewee: Jack Barnett  
Date:

way, looks like, as to water consumers, the energy industry development is not going to be that, it's not going to take basin states compacted entitled water, except with the potential of oil shale and we don't even know how they would process the oil shale. One opportunity is a lot more water consuming than another, so that's the unknown that's out there, is what is energy development doing in the upper basin to the water supply, the future water supply and to the salt contributions? But it's happening, it's happening rapidly --Uh-- as far as oil and gas development's concerned.

R. Sudman: So another something on your plate?

J. Barnett: Yes.

R. Sudman: Anything else?

J. Barnett: I think we've pretty well covered the subjects.

R. Sudman: Well I thank you very much for spending time with us today and I hope somebody watching this in a hundred years will get some insights from it. Thank you.

J. Barnett: Thank you.

Water Education Foundation  
Water in the West

Interviewer: Rita Schmidt Sudman

Interviewee: Jack Barnett

Date: Page 54

---

R. Sudman: Great thank you. Oh, no, things to, I'm even trying to do that with our own family stuff because some, first they started out from my dad, you know that he had --

**[END TAPE]**