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ENVIRONMENTAL AND ECOLOGICAL ISSUES: HISTORY AND FUTURE OF ESA, NEPA, AND THE CLEAN WATER ACT

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I don't feel uncomfortable speaking last, being a pitcher I'm used to batting last. So I'm going to talk about a slightly different title but the subject matter is the same. I will be talking to you about the Ecology of Environmental Policy. I'm going to come at this from the perspective of the "radical center," but first I want

to thank Karl Wood and the organizers of the conference this year. I think they did a great job selecting the name. It stimulated me to google "Lawyers, Guns, and Money" and I got the actual words, lyrics from Warren Zevon, from his album *Excitable Boy*:

*Now I'm hiding in Honduras
I'm a desperate man
Send lawyers, guns and money
The s—t has hit the fan*

I would suggest to you that the theme of this conference, and the content, clearly demonstrate the s—t has in fact hit the fan. I want to give you a perspective from the Middle Rio Grande Conservancy District of national environmental policies – specifically, three of those: 1) I'll talk about what's changed, 2) what it means to be looking at these policies from the perspective of the radical center, 3) and then give you a few examples.

First of all, I have to give you this disclaimer. You cannot blame me if your analytical faculties are diminished by this presentation. NASA has determined that at least one cause of the last space shuttle disaster was the over use of the PowerPoint by engineers. I'm neither an engineer nor have any connection with the space program. So you cannot blame me for this use of PowerPoint.

The Middle Rio Grande Conservancy District was created by State District Court in 1925 to accomplish three things. First, to drain tens of thousands of acres of waterlogged farmland – the picture on the left of Figure 1 shows what is now the intersection of Interstate 40 and Rio Grande Boulevard. Second is flood control. The center picture is of downtown Socorro around 1921 and third (the picture to the right), depicts the improvement in the efficiency of 70 acequia systems that operated in the Rio Grande Valley.



Figure 1.

Today we serve approximately 11,000 water users on about 62,000 acres of irrigated farmland, and our service area includes six pueblos. One of the most controversial issues associated with water use in the Middle Rio Grande is exactly how much water we do use. In fact, unlike much of the rest of New Mexico, agricultural water use in the middle Rio Grande valley (according to the regional water plan) amounts to about 1/3 of total surface water use, 1/3 of the water is used by the riparian forest which we call the “bosque,” and 1/3 is accounted for by reservoir evaporation (primarily from Elephant Butte) and minor urban uses.

In order to address some of the environmental controversy associated with water use in the middle Rio Grande we've installed new gages. Since about 1996 we have been engaged in a very serious program of increasing the efficiency of our water use. We've automated diversion gates and canals, and we are conducting studies on canal lining. So far we've discovered through our preliminary results that lining irrigation canals will result in no net savings. But this is only preliminary; the studies are not complete. We are also working with Colorado State University on the development of a decision support system for irrigation and scheduling, and we have begun the process, with the good work of Dr. Phil King, of looking at the question of forbearance to get more water for endangered species. Our diversions have been reduced by 44 percent since 1996. Consumptive use we estimate in 2004 was about 2.5 acre ft. per acre, total diversions from the river in 2004 amounted to about 5.3 acre ft. per acre, and we are very proud of those numbers. They are down a significant amount.

I was asked to talk about the past, the present, and the future of national environmental policies. I picked three that in my opinion are most relevant to water in New Mexico along the Rio Grande. These are: NEPA – the National Environmental Policy Act, CWA – the Clean Water Act, and ESA, the Endangered Species Act. In the 1960s and the early 70s when these national policies were enacted, I think it's fair to say that they were considered to be groundbreaking, widely seen as effective, and very widely supported by the public. And we know that today the public overwhelmingly supports strict environmental enforcement. In the polls, environmental controls consistently get 60 to 80 percent of the public's support.

However, the fundamental error of all the environmental policies in the late 60s and early 70s was that they were based on a highly punitive view of

the world. Now, we are talking about policies that are over 30 years old. My hero Abby Hoffman told me not to trust anyone over thirty. I've taken this to heart for this presentation.

What has changed over the last thirty years? Well, for one, we all know that the federal agencies are major players for us on the Rio Grande and elsewhere in New Mexico. We see them today primarily forced to manage paper instead of lands and water. I'm engaged in the Middle Rio Grande Endangered Species Collaborative Program, which Estevan Lopez spoke of earlier today. This Program consists of, I think, 22 signatory agencies and entities. We sit around and talk, and we've been talking since January 2000 about how to protect, preserve, and eventually recover endangered species in the middle Rio Grande. In our interim committee meetings that are general held monthly, somewhere between 20 to 30 people are sitting around a room and talking.

Four years ago the Bureau of Reclamation and the Corp of Engineers decided that we needed an environmental impact statement for this collaborative program. Not on the work that the collaborative program is doing on the ground. Not on the new habitat that I will show you in a minute, looking at water quality and such, no. This environmental impact statement only covers the program. What it covers is only 30 people sitting around the table talking. So we are going to do a complete environmental impact statement because some one decided that NEPA, the National Environmental Policy Act, requires it, and it's going to take how long to do it? Well, last month we were told that it's not going to be a year, or two years, which has already been invested. Instead, it's going to be four years to get an environmental impact statement completed on 30 people sitting around a room talking.

In any discussion on the Endangered Species Act that you've seen lately on TV or in the papers, Congressman Pombo has recently attempted to amend the Endangered Species Act. Relatively speaking, there are very few species that have been recovered to date, and very little habitat has been protected. There are thousands of candidate species or species listed and relatively speaking, little habitat is protected for these species.

The most disturbing thing to me, with more than 30 years in the ecology business as a 'biocrat,' is that there are no effective controls today for non-point source pollution other than irrigated agriculture.

Studies on this subject have shown that, generally speaking, irrigated agriculture does the best job of any "treatment" technology in cleaning up non-point source pollution. You won't hear this from the EPA because the politically correct dogma from the EPA is that agriculture is a problem. In fact irrigated agriculture nationwide is overwhelmingly a solution, but an inadequate solution. We don't have controls for non-point source pollution, and it's a huge problem.

The context of this disturbing scenario that I'm painting for you is of course that we live in a desert. We can reconstruct 2000 years of climate history (Figure 2). It shows as this slide indicates that the 1950s drought was not a very big deal on the 2 millennia time scale, and we need to get used to the fact that we live in a desert and that we are going to have dry times to come – drier than we've seen.

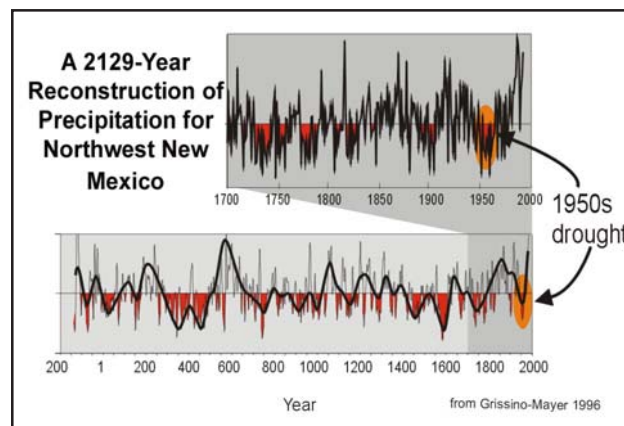


Figure 2. *from Grissino-Mayer 1996*

The Quivira Coalition was created about six years ago by a cattle rancher and a couple of Sierra Club activists. Quivira came up with the notion of The Radical Center. It represents a different way of thinking about environmental protection that appeals to me. It involves first, active stewardship of working landscapes for biological diversity. Now what is all of that? Well in essence it means instead of (as Bruce Babbitt would have you believe) buying farm or ranch land to put into natural parks or protected areas, supporting the efforts of private ranchers and farmers to do a better job of land stewardship. From my perspective, the federal agencies are full of wonderful, dedicated, hardworking, devoted people who cannot do an adequate job of managing natural resources because they are overwhelmed by paper. Instead of putting land into federal agencies, the notions of the radical center are that we should protect and support

private land owners who are working for biological diversity, creating wildlife habitat. The radical center looks at ecosystem rehabilitation through restoration of working landscapes, instead of “preservation.” The radical center supports not only private land owners, but the public agencies that are doing rehabilitation and restoration. And most important of all, the radical center supports relationships, because relationships are the basis of ecology. Relationships are the key to looking at the world from the perspective of the radical center, and an example of that is active stewardship of working landscapes for biological diversity. I can take you to many ranches in New Mexico where biological diversity is high and getting better all the time.

If you look at the work of Rick Knight, you find his research from a few years ago conducted on a large working cattle ranch that borders the Rocky Mountain National Park, on the Park itself, and on a nearby development of 40-acre ranchettes. He found over several years of monitoring that biological diversity was higher on the cattle ranch than on the Rocky Mountain National Park, or of course, than on any of the ranchettes. (His email address is knight@cnr.colostate.edu; he would actually respond to your email, if you are interested in contacting him)

Another example: If you went to the Bosque del Apache National Wildlife Refuge as I did in the early 1990s, you would have seen a little brochure that you can’t get now because they stopped printing them. That brochure talked about how important irrigated farms are along the Rio Grande valley to the birds, the tens of thousands of birds that use the Rio Grande flyway every year. That brochure said at the time (it is not politically correct to say anymore) that private irrigated farms are a key part of the strategy that avian biologist use to support the tens of thousands of migratory birds. You can find evidence of this in the Bosque Biological Management Plan that the Fish and Wildlife Services still produces.

Our agency is building new silvery minnow habitat, an effort that would have been unthinkable a few years ago, but it is an important part of what we do now. The City of Albuquerque has built a multi-million dollar facility to propagate endangered species as a part of their BioPark.

Here is a little bit of the silvery minnow habitat that we built a couple of years ago. It is simple. What does the habitat consist of? Anchoring whole cottonwood trees in the river so that the wood in the

river becomes a part of the habitat for the fish. It works and is really amazing. The picture shows Dr. Tom Wesche, the premier fish habitat builder in the west.

Habitat for the Endangered Rio Grande Silvery Minnow



Figure 3. Dr. Thomas A. Wesche supervising construction of new silvery minnow habitat in Albuquerque.

The Conservancy District looks at things from a watershed perspective these days. Although we constitute only about 1 percent of the total Rio Grande watershed, we are forced to consider the whole watershed in our decision making, and this is exactly what we are doing. Looking at environmental protection from the radical center also requires that you get into bed with a lot of people that you might not have thought about having a relationship with before. Figure 4 provides a list from the MRG Endangered Species Collaborative Program and is probably inaccurate in a couple of respects. I’m not entirely sure that I have everyone there, and it may be that a couple of those are no longer active, but notice that we have multiple state agencies, multiple federal agencies, several local governments, several Indian Pueblos, a couple of environmental organizations, and a couple of organizations of private farmers. There is quite a bit of diversity here, and it has been working rather well.

We look for active stewardship; we look for active rehabilitation and restoration, and we look most importantly of all for relationships. Those are the fundamental elements of the radical center.

Thanks very much.



Figure 4.

Question:

You were quoted somewhere that there are tens of millions of silvery minnow in the Rio Grande. Is this right?

Answer:

Is it right? Nobody knows. That number is based on my speculation. In 2004 the Fish and Wildlife found 13,000 silvery minnows, and this year they have found a little over 600,000. I just scaled that up from past studies of how many fish you would expect to find based on how many you do find. That's where my tens of millions number came from.

Question:

(inaudible)

Answer:

Silvery minnows are a desert fish, and if you look at the literature on desert fish there is something called the Desert Fishes Council. Google the Desert Fishes

Council sometime, and you will find that there are good ecological studies of various species of desert fish and other animals, critters that live in deserts and they all have a singular characteristic and that is that their population numbers boom and bust periodically. I happen to believe that the silvery minnow is not endangered. That in fact we happen to be looking at it at a time when its population, aided by a lot of dumb river management on our part, was in decline. Now we are doing better at river management, and its population is booming.

Question: How is the refugium concept working?

Answer:

Most folks involved in the Middle Rio Grande would say that the refugium concept is an essential part of the recovery strategy. Fish biologists say that you can't have fish in the river unless you have fish in the river, and to produce a lot of fish in the river, you need to

grow them somewhere that is ideal. This is what the refugia are doing. Everyone involved that I know of in the refugia program sees it as a temporary measure to build up the size of the population. Regarding the idea of recreating a natural hydrograph: We just finished a study of the so called historical hydrograph on the Rio Grande using, strangely enough, a model created by the Nature Conservancy for evaluating western rivers. What we found was that the current hydrograph is not very different from the historical hydrograph on the Rio Grande, but there are a couple of significant things that are different. The peaks are cut off and the timing of the maximum flood flows in the spring is slightly different. Other than that there are no differences.

So from my perspective, the idea of recreating the historical hydrograph is a smoke screen, and it's not realistic to discard the concept of refugia out of hand unless there is some other reason not to consider it. We see it as a valuable tool.

Question:

What is the concept of refugia?

Answer:

The fundamental idea is that you have an endangered species, and you don't have enough critters out there where there ought to be more. To create more, if the habitat is degraded, you might have a situation where the existing population cannot produce enough females to produce enough offspring. Therefore, you create refugia either in the habitat or outside the habitat. Right now on the Rio Grande it's all outside the habitat, it is essentially tanks. In those tanks you can produce lots of fish. They are essentially hatcheries. Although they are operated differently from conventional fish hatcheries, they use the same technology.

Question:

Just a couple of comments...600,000 silvery minnows were found this year as part of the rescue effort when the river dried. Agency staff went out and collected eggs during the high flood flows and brought them back to rear them in the bio-park and in the Fish and Wildlife Services facilities. They tagged them, grew them to adults, then put them in the Bernalillo/Albuquerque area. They put in tens of thousands of fish with positive results.

Answer:

Right, that is part of the refugia issue.