Jonathan Kohr: Good afternoon. I know it's after lunch. I'm going to try and stay awake for my presentation. I hope you do the same. I'm from Washington State and keep in mind this picture right here, was actually in 2015 and one of our worst droughts on record.

I think Jeff had mentioned that and it was an emergency that we felt brought people together and actually brought some projects together, such as that year's drought emergency. There is the before picture of the creek.

This is the Manastash Creek flows into the Yakima River and we did a project, actually Andrew Purky had some water purchased in their through the acquisition program, Columbia Basin Water Transaction Program. It was about 6 CFS. It wasn't enough, it was still going subsurface. This is a very porous system, still going sub but in a drought emergency in 2015, we had a very innovative group get together, the Kittitas Reclamation District. Urban Eberhart, some of you might know him in this room. He was actually going to give a talk here, but couldn't make it. He was very innovative in talking with us and we had worked almost 40 years to try to do what he did to reroute water down streams to users that are downstream. Instead of conveying it down the canal.

This worked out really well for people, fish, Ag, everybody. It was a great opportunity to all work together and again, an emergency that brought good things and people together in time of great need.

This website here I'll actually bring it up a little later so you can copy it down. This is a very important website if you're doing anything drought related. It's called The National Drought Mitigation Center, so the NDMC.

This has actual status of droughts and the status or definitions of individual state drought plans. It shows all the drought plans from the nation and those drought plans are considered as 1) response plans, 2) mitigation plans, 3) development or revision plans and 4) some states or one state, has no plan. The plan definitions are actually a lot longer but the bullet points are just too much to put up but anyway, if you want…again, go to the NDMC website.

The status of those drought plans for the 13 western states, as you can see here, under the heading; response, mitigation, development, Washington is active in the development phase. I actually just got told that Colorado is also revisiting their drought plans. Alaska is the only one that did not have a drought plan. Maybe they have plenty of water up there, but I've been told by Christopher (Estes) that they do have a process for drought actions.

I'm sure there are ongoing discussions about it, within Washington, we had a plan in 1992 and Jeff Marti who gave his talk mentioned that we're updating. I think it is very close to being done, but it was based again, on 2015 when we had a major drought so it brought attention to the need for completion. One of the problems we had in earlier droughts was getting funding in time. Acquiring funding takes many routes, legislative efforts, whatever it has to go through to get to the actual ground pounding and to get the work done to help save the fish, and help Ag and community interests.

We came up with a new two stage, I say we, as I was not actually part of it. The two-stage drought process consists of advisory and emergency stages to expedite those projects so we can actually get that money in hand a little quicker. There's a committee, a large supply availability committee that is the think tank and includes anyone from the Governors, Department of Ecology, Fish and Wildlife, Department of Health, Department of Ag, I couldn't list them all, there are so many. I thought employment security was an interesting one to have on there too, so there's job opportunities when you have droughts. We, of course, in Washington have had numerous fish and flow projects that we've done. One of the main efforts that we did was fish and gold dredging restrictions when you have too high of temperatures detrimental to fish life, we halt activities, typically called "hoot owl restrictions", where certain times of the day when we knew temperatures were too high…No more fishing, no more gold dredging, which stresses fish out.

Alaska, as I said, doesn't have a plan, but they actually did a few things on occasion. One of them was to request temporary water authorization to be suspended. That actually worked. On the other hand, they rather wanted to halt some of the fish habitat permits and those were contentious, actually were fought back on, and apparently did not work as well.

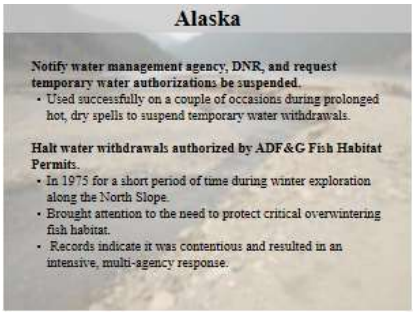
The following portion for Alaska (not presented) is supplemental material prided by Christopher Estes in regards to Alaska's drought decision-making process:

"...Critical Water Management Areas
The commissioner will, in his or her discretion, initiate proceedings to designate a particular geographic or hydrologic area, including surface and ground water, as a critical water management area if

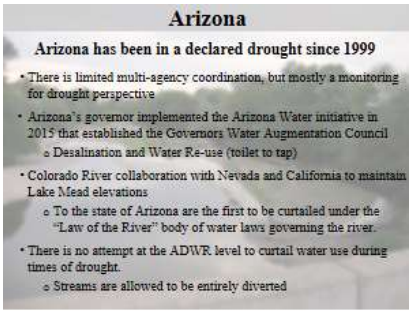
(1) the commissioner determines that there is or might be an imminent water shortage in the area, for all or part of the year, affecting a substantial number of permittees or certificate holders of record so that their ability to reasonably acquire water has been or will be affected by ***existing*** *or* ***potential*** *overappropriation,* ***drought****, saltwater intrusion, or a chemical or toxic contamination rendering the water source unusable;*

(2) an agency or political subdivision of the state, or an agency of the United States, petitions for the designation of the area as a critical water management area and demonstrates that a condition in (1) of this section exists; or

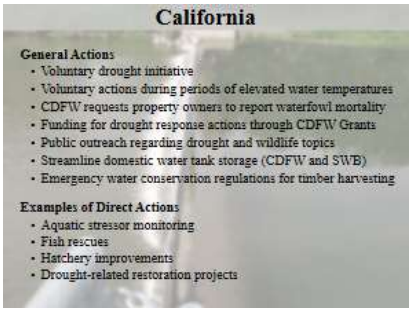
(3) 25 percent or more of the permittees and certificate holders of record in a geographic or hydrologic area petition for the designation of a critical water management area and demonstrate that at least one condition in (1) of this section exists...."



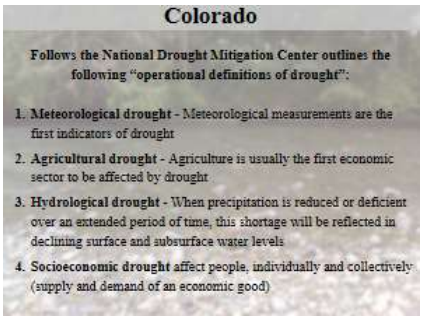
Arizona, has been declaring drought, I have been told, since 1999, that's an interesting fact. Drought every year. There is limited coordination and so the drought plan sounded like it hasn't been vested as well as others have. Again, drought was relevant; and it always seems to be happening so they knew of it. They did a couple of things, 1) desalinization and water reuse, which they called, “toilet to tap”. I thought that was a nice little note. They had some interstate rivers, the Colorado and they actually didn't attempt to curtail any water use which is quite opposite of what we would do in Washington. The streams were entirely diverted in some cases.



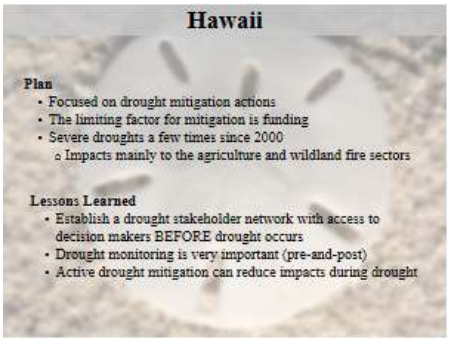
California has many actions pertaining to drought response. California, was actually, I got more than I needed, thank you California. There's so much on drought, they've been reviewing and doing drought work for years and there was just so many general actions. I tried to take some of the key points that were brought forward to me. They did some voluntary drought initiatives, some voluntary actions, funding, public outreach, of course. That's a great thing to do. Stream-line some domestic water tank storage and emergency water conservation regulations for timber harvest. Then, some of those direct actions included post-project monitoring which is great. Fish rescues, which we've done too, hatchery improvements, and numerous drought related restoration projects.



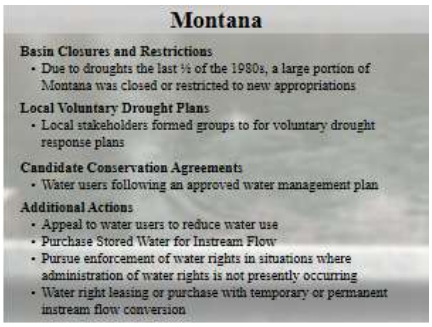
Colorado has been dealing with droughts for years. Colorado has a lot, and they were kind of on the forefront of the nation’s drought definitions, 1) meteorological, 2) agriculture, 3) hydrological, and 4) socioeconomic droughts. Therefore, we've taken some of that and actually incorporated those types into our drought planning review.



Hawaii has a plan, which is more of a mitigation plan so they have drought actions that they can take. Illumining factors was funding as happens quite often. Severe drought since 2000 and mainly it was agriculture and wild land fire sectors that were important and the fish were not really as high as in our state, high on that totem pole, so lessons learned there. They definitely know that decisions should be made before a drought, that's kind of obvious. Which brings us back to the hydro-illogic cycle. Let's not wait until a drought happens and then come up with things. Let's have them on the forefront. Drought monitoring was mentioned about pre and post. It's very important to do pre, of course, want to make sure, are we going to have a drought? Let's get ready for it. Then, post monitoring, are these effects taking place and are they doing good thing for what we're planning them for. After drought mitigation, can we reduce impacts during droughts?



Montana, they had basin closures and restrictions to water use. They had local, voluntary drought plans. They had Canada Conservation agreements where water users would actually approve a water management plan and many more actions. Some of those additional actions were just appeals to water users. Requesting reduction of their use, and they would purchase stored water. I think Andrew Perky and the western folks were probably involved in that. Maybe Columbia Basin Water Transaction. Then they pursued some enforcement on the water rights, which was a great idea as well, and water right leasing and purchasing, which we've done in many states throughout the west.



That's pretty much a very brief overview of some states in the West. So the findings now. I tried to find some of the commonalities and all those commonalities were drought declarations, which is the plan almost all states had except for Alaska. It was apparent that it is important to have all those agencies working together, more than you could ever imagine. In Washington State, I'm sure in time we'll get more and maybe some will drop off and say, "Well, we're not really involved in this." I imagine it's going to get bigger before it gets less. Maybe money is the driver, but still it has to be coordinated and certainly get better projects, more ideas from people coming forward and being, okay to take them on.

Drought mitigation projects, those are very common among Western states. I would say the two most important ones or the ones I found most were 1) passage issues, which we would include, passage projects whether it was getting water or channelizing streams in some cases. However, those projects include projects with 2) water acquisition where you could actually get water for that passage or actually respond to needs or increasing during habitat. Again, just with those commonalities, I always saw that there was a need, not just fish. I'm fish centric. I'll stand in the middle and say, "I want to work with fish," but all those needs to be addressed, fish, farms, and people. The people portion goes right back to the fish and the farms. This is my passion and I really love it when we get out there and see things that get done such as what I showed you in the first couple of slides.

What worked? Voluntary water savings worked in some ways and didn't work in other ways. It is what it is. It's voluntary. You can't always get people to do what you hope they'd do, but education is one of the key factors. We actually have to get out there and I found that just by talking, in general, to cities and folks, "How did it work for you?" Some of them would say, "Oh, it worked great. Some of our folks would shut off and are aware of the issues with drought." Moreover, other ones would say, "Oh well, you know they'd still be watering at 3:00 in the afternoon when it's 100 degrees out." There is still some education that's needed out there and we will continue to do that.

Those fishing and gold dredging windows were a great regulatory compliance product that worked. Water acquisition, again, worked and mitigation projects, all types would work in many ways. Hard to pin down though, because what didn't work was the monitoring efforts. Monitoring efforts were very difficult.

Not a lot of people want to spend money on monitoring efforts, the afterthought.

The thought is, let's get the project done and on the ground and then move on because we've all got jobs to carry on with. So the jobs gone and done. We tried to come up with monitoring effects, in Washington, at least to give to Jeff and we've gone over that. Again, I spoke of the availability and timing of funding and that's difficult when you face and have a drought. You need to prepare ahead of time to be able to get that money on the allotted for on-the-ground projects. That's it.

Thanks for the opportunity and I'd also like to thank the IFC members that sent me way more than I could handle in 15 minutes for the drought talk. In addition, Hal (Beecher) helped tremendously with that data gathering and thanks also to Kiza (Gates) who helped put this presentation together. Here again is the website for information at the drought mitigation center. They actually do a little thing for kids and it's a nice little video. I think I learned enough on that to pretty much give this talk, so again I thank you.