The Water Report™
Water Rights, Water Quality & Water Solutions in the West

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Tribal Water in Oklahoma

Bureau of Reclamation Commissioner Mike Conner

Tribal Water Rights in the Northwest

& More!

COLORADO WATER ISSUES

AN INTERVIEW WITH COLORADO STATE ENGINEER DICK WOLFE

by William H. Fronczak, Attorney at Perkins Coie LLP (Denver, CO)

INTRODUCTION

Dick Wolfe was appointed State Engineer and Director of the Colorado Division of Water Resources on November 26, 2007. As State Engineer, Dick is responsible for the direction and management of the Colorado Division of Water Resources, which has a staff of approximately 290 employees and an annual budget of approximately $25 million. As Division Director, Dick is responsible for: the distribution and administration of water in accordance with statutes and interstate compacts; the implementation of a statewide dam safety program; the permitting of the use of groundwater and construction of wells; the collection and dissemination of data on water use and stream flow; and conducting various studies concerning water resources and the availability of water supplies. Dick is Colorado's commissioner on five interstate compacts and is responsible for assuring compliance with these compacts. Dick is also the Executive Director of the Colorado Ground Water Commission and is the Secretary of the Board of Examiners for Water Well and Pump Installation Contractors. Dick has been with the Division for over 17 years.

On October 8, 2010, Dick agreed to a question and answer session regarding his thoughts on water issues facing Colorado.

Question: Thanks Dick, for allowing me to ask you a few questions regarding water issues facing Colorado. To start off, and as a general matter, what are your thoughts regarding the water supply challenges facing Colorado presently and in the future? In response to this question please provide your insight regarding solutions (i.e. Colorado River Compact entitlement, more storage, increase groundwater use, etc.) to make up the anticipated water supply shortfall for the Front Range of Colorado.

Answer: This is an interesting question because there are numerous factors that have to be considered, some of which you eluded to. Therefore, I will broaden the discussion to address key factors that are currently being utilized to address and solve potential water supply shortfalls. The mechanism presently being used in Colorado to evaluate and address potential water supply challenges is the Interbasin Compact Committee or IBCC. The IBCC was formed in 2005 and is comprised of members of the nine basin round tables and key government personnel. The IBCC is evaluating information collected from the Statewide Water Supply Initiative, municipal water providers, statewide consumptive and non-consumptive water use, and population predictions to identify gaps in the present and future municipal and industrial water supply requirements.

This evaluation has gelled in the last several months. IBCC has developed a framework or portfolio of options that it is modeling to determine what factors can be changed to fill the gap. The factors being evaluated are: (i) **i**ndividual **p**rojects and **p**rocesses (IPPs) identified by municipal water providers; (ii) water conservation (passive and active); (iii) new water supplies, for example Colorado's Colorado River Compact allocation [see page 2]; and (iv) agricultural to municipal water transfers. The IBCC will change these factors, like levers in a machine, to model and predict which mix will fill the projected M&I [**m**unicipal & **i**ndustrial] water supply gap. While modeling has just begun, I believe it is a powerful tool to assist decision makers on what mix (new water, conservation, etc.) will best serve Colorado and fill the anticipated water supply gap.

Colorado Water

Quality Impacts

Groundwater Impacts

Return Flows

With regard to whether the state's Colorado River Compact entitlements, more storage, increase groundwater use, or other options will solve the anticipated water storage in Colorado, these are all factors that will be evaluated in the IBCC process.

Q: Was the IBCC's portfolio/model based upon Colorado's present water law structure, i.e. the Colorado doctrine – first in time, first in right, or did the IBCC incorporate other legal mechanisms?

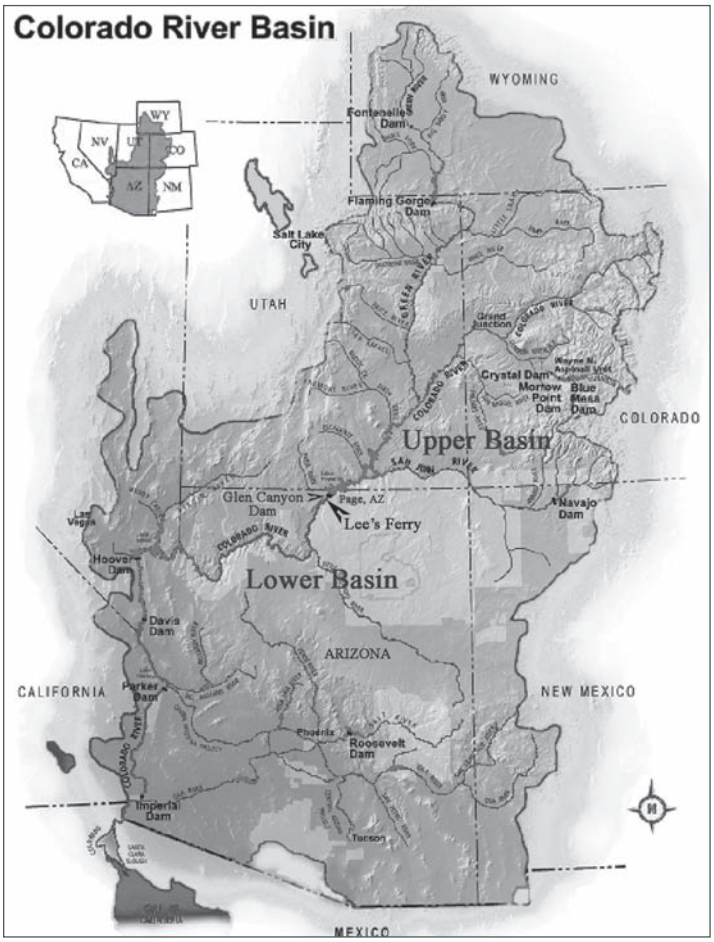
A: The direction to the IBCC was that the portfolio/model had to be based on Colorado's present legal structure regarding water rights. No new structure was to be considered.

Q: Continuing along the line of water supply challenges, how do you foresee water quality playing a role in the water supply challenges facing Colorado presently and in the future? For example, water quality impacts from wastewater treatment plant discharges, energy development, mining; agricultural transfers, etc.

A: Again, this is a complicated question — however, an important one. I guess the best way to answer this is that each of these water quality impacts, wastewater treatment plant discharges, energy development, mining; agricultural transfers, etc. are increased risks to water supply development.

Take for example wastewater treatment plant discharges. This water quality issue has impacts on water supply in areas where wastewater providers are requiring residents on a septic and leach field within 400 feet of their sewer line to tap into that sewer line and discontinue their septic tank and leach field. While these wastewater providers are trying to improve the water quality going into lakes and streams by eliminating septic and forcing these residences onto their central system, the returns from the septic systems are not coming back to the system and there is a concern that wells are drying up. Where this is occurring is in areas up around Fraiser and Breckenridge on the Blue River. For example, the Breckenridge water treatment plant is located downstream from Breckenridge on the Blue River right near the lake. Breckenridge requires that residents on septic hook on to the public wastewater system. This system's piping takes the wastewater around the river reach from just outside Breckenridge to the lake. This practice has impacted the stream flow in this reach, but what it really does, since the historic returns from the septic aren't coming back to the system, is the concern that the wells these houses are on are starting to go dry. People sometimes don't realize that these things to try to solve water quality can cause water quantity issues. People don't like to think about septic systems and the associated return flows, but that's the renewable supply that's going back to the well field.

One way to solve some of these issues is better coordination between the water quality and water quantity agencies.



Colorado River Compact Allocation

The Colorado River Compact is an agreement between the states of Arizona, California, Colorado, Nevada, New Mexico, Utah and Wyoming ratified by the US Congress regarding the disposition and apportionment of the waters of the Colorado River. As a general matter, the upper basin states (Colorado, New Mexico, Utah and Wyoming) have exclusive beneficial consumptive use of 7.5 million acre-feet annually, subject to an aggregate flow restriction of 75 million acre-feet at **Lee's Ferry** on a ten year rolling average.

The Water Report
(ISSN 1946-116X)
is published monthly by
Envirotech Publications, Inc.
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Eugene, OR 97402

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Subscription Rates:
$249 per year
Multiple subscription rates available.

Postmaster: Please send address corrections to
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260 North Polk Street,
Eugene, OR 97402

Colorado Water

State v. Federal Law

Q: Exactly, and continuing this discussion further, some of the work I am involved in is similar to what you just brought up. Currently, I am working on projects where there is a tension between state water law and federal Clean Water Act. Specifically, the issues we are grappling with are state water right impacts associated with wastewater plants that are either: (i) re-using the discharge for non-potable purposes; or (ii) going to zero discharge facilities resulting from the federal ratcheting down of discharge limitations. Wastewater treatment plants involved in these two activities are obviously taking water out of the streams thereby impacting the water supply for downstream water users. Of particular interest to me is whether the Clean Water Act (federal law) that permits discharges (basically indicating that the facility cannot discharge at certain contaminant levels) trumps state water law wherein discharges are required because of water right impacts.

Augmentation Plans

A: Impacts of wastewater discharge and taking them out the stream system for various reasons is creating conflict between water quality and water quantity or possibly federal law against state law requirements. Bottom line is we need to identify these issues and then we need to figure out a way to reconcile them. We have that obligation. For example, under Colorado's Senate Bill 89-181 — which relates to substitute water supply plans or augmentation plans — we have the obligation to ensure that the substitute water proposed for the plan be of the same quality as the source being diverted. Moreover, we are starting to see water quality issues crop up more and more with exchanges especially where the discharges from water treatment plants are being used as the exchange source for pristine water up stream. We're seeing more and more of it and I think that's why I sense that it keeps coming up, and therefore we ought to take heed in that. It's kind of like putting a toad in a pot of cold water and turning up the heat slowly. The toad will simply stay in the pot and boil to death. However, if you put a toad into a pot of boiling water it jumps right out. Well I think some of these things are gradually occurring and we don't take heed to them and then all of a sudden they are in a crisis stage. This is certainly one area that people have talked about and we have focused on here at our agency and also at the department level recognizing we have to figure out a way to get agencies and activities more coordinated so that we're not making independent decisions that are at the detriment of the others.

Coordination

Q: How about we jump over interstate obligations and intrastate obligations, and maybe we can come back to consumptive vs. non-consumptive and conditional/non-conditional water rights. Let's now move into how endangered species are impacting water development and what you're seeing in that regard. You are aware of the South Platte issues and the whooping crane in Nebraska and the issues in the Glen Canyon dam, are these issues that you are seeing more and more of?

Endangered Species

A: Well, yes and no. I think to the extent we know that there's an Endangered Species Act out there, we know that the federal government is involved and certainly a number of agencies are protecting these species and insuring other species don't become endangered or threatened. I think endangered species, or the potential of endangered species have increased the risk of impacts on future water development. However, again I look at it as part of this equation of input vs. output. It's just one of the outputs. With a fixed amount of water that's in the system, it's just that part that is going to be carved out as one of the outputs. If it's not going to municipal use or going to recreation or agricultural, whatever, we've got to carve out endangered species as part of the output. If you will, it is just another issue to deal with and what I think is, what will be done to minimize that risk of how big that amount is as to take away from that total quantity of water to do other things?

Creative Solutions

Things like the Colorado Water Conservation Board as part of their instream flow program and other similar activities have been able to come up with creative alternatives to avoid species either becoming listed as endangered or having river designated as wild and scenic. We have also seen in the last few years that without utilizing some state processes to avoid getting these federal designations, in a lot of people's minds, there would be a lot quicker and more drastic impact on water development in some areas. So what is good out of this is that we have the opportunity to think about how we can use these different programs, work with all these state programs, work with the federal agencies, give it some time, and finally come up with a good creative solution that will allow water development to occur and yet protect these important values. I think we've had some good success with recovery programs on the upper Colorado and the San Juan. We also got the three-state agreement on the Platte River (including the South Platte River in Colorado) regarding endangered species. We've got to keep these programs in mind. While there is obviously something we can limit, i.e. future development, I think we can minimize that risk by utilizing some of these programs out there. That's how I see endangered species will impact water development.

Stream Flow Models

How big the output is, I guess time will tell. But I think we've been in this process now for over 30 years since the ESA was passed and people understand mechanisms now and how they can protect species. They've got an understanding of the biological systems, the hydrologic systems, and how those two can be put together. We have timed the stream flows and we have models, not an exact science by any means, but it's better than it was. And so I think we've got good tools in place to help us move forward to minimize the impacts on endangered species from development of water for future growth.

Colorado Water

Climate Change

Reduced Runoff

Period of Record

Volumetric Limits

Colorado Compact

Supply Strategies

Q: Are there other issues impacting water supply within the State?

A: Climate change is obviously out there. And when I refer to climate change, we know there is— if you look at the definition we've been using in our State of climate change — climate variability. There is also climate change because of the natural long-occurring processes that we go through and then there are questions about what extent climate is being influenced by mankind activities like global warming. But in this discussion I'm referring to just climate change in general. We know that climate change is going to occur, so that is obviously going to affect water supply in the State. We've already seen with the studies done now about how climate change is going to affect the timing of runoff. Some areas already have a reduction in the amount of runoff and if we've got warmer temperatures it's going to increase consumption of vegetation which would further reduce runoff to the stream. So all of that is obviously going to impact water supply and we just need to continue to develop good models and a scientific understanding of this issue so we can adapt to it or manage it. What I think is difficult for some people is that they do not know how climate change is going to happen. If they have a better understanding of predicting how it might occur, we'd manage and adapt to it a little better than just leaving it as a total unknown.

How I see climate change really impacting water supply is to the extent water rights that have been changed and approved in decrees up until now are relying on a retrospective study period. For example, in a certain decree we may have looked at a 1950-2000 study period — historical hydrologic record — and this is what we think the hydrologic pattern is going to be in the future. So all the volumetric limits and other engineering is based on that period of record, which is fixed. But, we know that the future is not going to be like that period of time, so I have a concern that the further we move away from that period of record and we take into account the effects of climate change presently going on we're going to get the runoff occurring sooner. We're already seeing that on average spring runoff from snowmelt is occurring two weeks sooner. We know that over the next 40-50 years we're going to have more extremes, higher and lower periods of runoff. My concern is how are we going to reconcile these decrees and administer a volumetric limit that says you can have 10 acre feet in May and 20 in June, or whatever, based upon a static study period. The runoff in the future is not going to mirror what was in that study period and we're going to start seeing conflicts because of it. We need to think about how we're going to reconcile that in the future. I don't know if it means coming in and modifying decrees [judicial orders from the Colorado water court authorizing the use of water] to take that into account, but people don't like to open up decrees. However, I see that as a potential because the timing of water is a big part of a municipal water supply plan now and it's going to continue to be for many years?

Q: I can see that there will be issues on who can store when and what can be diverted with changes in runoff patterns. This can have a huge impact on the legal availability of water. And you're right, how do you open up that decree without having a huge legal battle on your hands.

A: The same issue is occurring with the interstate compacts. For example, the short study period used as the basis for the Colorado compact is inconsistent with the long-term record for the Colorado River watershed. The long-term record is something less than what they thought they could allocate out of that system based upon the study period so we've got to learn how we're going to reconcile that discrepancy going into the future. I think that's just a case study that shows what can happen when you fix something like a compact on a short and limited study period. So those are things that I see are going to impact water supply not only in Colorado but obviously worldwide.

Q: My next big topic: Water supply and demand strategies. My thoughts regarding this topic are: (i) where will water come from; (ii) what projects do you feel will be most successful to resolve this issue; (iii) the use of conjunctive use projects [see side bar]; and (iv) others. I'm kind of combining my questions, and I am asking you to touch on a few of these issues.

A: I think I'll comment in general to all those portions you're adding to this question. I think the overarching thing in Colorado is that we're essentially dealing with a developed resource and we're managing that. While there is a potential to develop additional water from Colorado's compact allocation under the Colorado River compact, depending on what the current study says about the amount of water that could be developed underneath the compact — to the extent that it is there and it's not either already committed in some existing projects or ones that are on the board — varies. Since we're dealing with a developed resource anything that we do to meet future water demand, we're essentially taking water from old uses and changing it to new uses. So I think all these things that you identified as different strategies that you've laid out, are all a part of the solution. However, I think there's no silver bullet, you know one single thing that is going to do it. But I think of it, as Reagan Waskom [Director of both the Colorado Water Institue and the Colorado State University Water Center] put it, that there is no silver bullet, but there is a lot of silver buckshot.

There are a lot of little things, strategies, to help meet this future demand. For example, cash in lieu of water rights. Well, that's not as desirable any more because the thinking presently is "we can get this money in for water, but if we had to go out and look for water rights they're not out there, so growth has got to bring its own water rights with it to the table." I think you're going to see more of that.

Conjunctive Use in Colorado

Conjunctive use is the active management of aquifer systems as an underground reservoir to store surface water. During wet years, when more surface water is available, surface water is stored underground by recharging the aquifers with surplus surface water.

Colorado Water

Conditional Water Rights in Colorado

Conditional water rights are water rights in Colorado that have not been finalized because no actual diversion and beneficial use has occurred. These rights arose out of the need to protect investment in large scale projects like the transmountain diversions. With these rights an appropriator can protect himself in priority by obtaining a decree provided the appropriator completes the project with reasonable diligence.

Lease Limitations

Supply Proposals

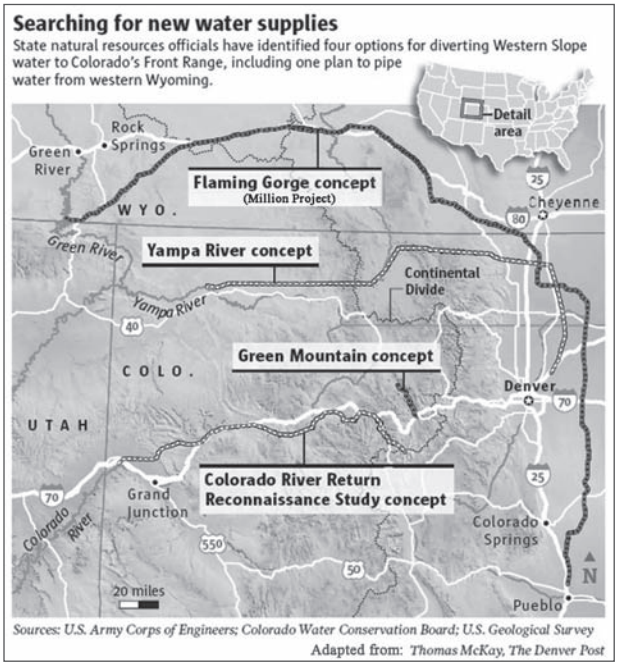
Obviously, there are interstate imports we're looking at. I think this needs to be considered. We're looking at projects like the Million Project [see map below] or others off the Green River. Managing demand is also being looked at now. I think demand pricing has shown to be very effective way to control the demand side water needs. Obviously, you always try to look at the supply side, but if we can control the demand side of it is going to extend those existing water supplies into the future.

I think you also have to fully analyze whether there is water available in periods of free river [i.e., when there is no priority call on the river due to elevated flows]. In the South Platte, people say that there may still be water available for appropriation under free river conditions. There are currently some projects that are trying to take the periods of time when there is what they identify as free river and take the peaks off for storage and use. However, I think you have to consider this water development in conjunction with the existing conditional storage rights that are still out there and not being filled. We've got about seven million acre-feet of active storage right now, but we have over sixteen million acre feet of additional conditional storage water rights. So it's not just a matter of needing more storage rights. Obviously, we need to build some of those projects, but the rights have already been identified. For example, we have the existing conditional water rights like Two Forks reservoir project on the South Platte that's still sitting out there [see sidebar]. This is a million acre foot water right. Do we re-look at this project and develop it, or is there a combination of smaller projects throughout the state to consider? Bottom line there is a lot of existing things to consider, and I think we need to look at existing conditional storage water rights as a key factor.

We also have to recognize those water rights that have been decreed after those conditional storage water rights were decreed, say in the 1980's. If these conditional water rights get fully developed, they are going to have an impact on all those junior water rights that have come afterwards, like the recharge rights being used to help offset depletions from well pumping for agricultural use. So, we have got to understand that interrelationship because I know the holders of these conditional water rights are trying to develop future storage projects to avoid impacts on changing agricultural land over to municipal use. I understand this thinking as a concept, but we also have to understand this other impact too — how that system is administered and if you develop those more senior conditional water rights these junior water rights that have developed since then are active and made absolute. I think there's potential for some real impact on these juniors so we have got to keep that in mind.

"Conjunctive use" — most definitely I think we need to continue with this concept. I view groundwater use as just another reservoir out there and the wells allow us to exchange this water from the storage base underground for use above ground. This is presently being used in a lot of areas — in the Rio Grande and South Platte and Arkansas.

Regarding leases and temporary leases of water, one of the things I wanted to point out on that is I think they've been limited to date just because they are temporary in nature. Most municipal water suppliers are indicating that they do not prefer leased because they do not want to base their future permanent on-going demand based on temporary water supplies. So there's been a reluctance to go to those temporary sources even if they're for four years because they are going to say "well what am I going to do after four years? I've built up this reliance on it with my population base and I don't have any certainty that it's going to be there after four years or whatever that lease term is."



The Million Project

The Million Project is a proposal to access Colorado's and Wyoming's unused Colorado River Compact water in the Green River by building a pipeline that would transport water from the Flaming Gorge, along I-80 in southern Wyoming, and to the front range of Wyoming and Colorado for beneficial use.

Colorado Water

Colorado Water Banks

A water bank is a process in Colorado whereby water can be stored (i.e. placed in a bank) and leased, exchanged or loaned for other uses without requiring a permanent change in water rights.

Water Right Condemnation

Condemnation of a water right is the (i) seizure of a citizen's property rights (water rights); (ii) with due monetary compensation, (iii) without the owner's consent; and (iv) for public or civic use.

Infrastructure

Water/Energy Nexus

Administration Challenges

Critical Functions

Water banks [see sidebar] also have a place in this solution, but they're going to be limited. While everybody is saying "why don't you look more at these water banks as they are a great option," nobody is really taken advantage of this program yet because I think there have been other options that have been more effective.

Reuse and recycling. I think this option only extends the existing water supply, and does not create a new water supply.

Below ground storage. I think there's some potential for some things here and we've talked about some of them — for example reducing evaporation and maybe taking credit for that somehow. But we have to consider pumping costs and what does it do on the energy side, the carbon footprint, creating potential climate change issues because of that so you just solve one problem while creating another.

And the last thing I was going to comment on is this question about condemnation [see sidebar] of water rights by cities, municipalities, etc. Specifically: do you see these entities utilizing these powers as water supplies become more stressed? In the foreseeable future, no. I think from my opinion, if municipalities have to get to that point to condemn we failed as water planners and leaders. We shouldn't allow that to end up there, I mean it should be a last resort type of thing. We know the laws in some places allow them to do that but I think if there's a willing, concerted effort to plan for the future — like IBCC — and where you know your water supplies are coming from you can solve the water supply problem without condemnation.

Q: I have also talked with various municipalities regarding temporary leases. I concur that the thinking is, specifically with temporary leases – municipalities don't like to do it. They don't want to rely on a temporary water supply. But my comment always back to the municipality is, "*you could have a temporary supply that's going to give you that buffer for you to develop a water plan for perhaps the next 20 years.*" Now the municipality has time to think through reuse projects, developing additional water supplies, working with other municipalities, whatever you may need to do, but it gives you that buffer where you're not putting the breaks on your development, you're not putting the breaks on your economic growth.

A: It's a bridge to get you there.

Q: Exactly, instead of just saying, "*well, we're not going to deal with it*" or "*we are going to go through our traditional method of having to secure permanent rights*" which could take three to five years.

A: In addition to water leases, there are other efforts with South Metro and working with Aurora and Denver for example, to integrate, how do we best utilize our infrastructures because it is expensive to put in infrastructure. You're seeing a lot of movement in that area. I think that's a good thing. Moreover, these municipalities are trying to take advantage of existing water supply sharing arrangements for drought times. For example, there can be a reliance on groundwater during drought times as long as we know in other times we can recharge it back when water supplies are good and integrate throughout a number of water suppliers. So they're seeing some real opportunities there along the cost of not just the water supply but also the infrastructure.

The other thing I was thinking about is that, I think there's got to be a way we can take advantage of the increasing demand for water for energy development — whether it's oil shale, oil, or natural gas. We know that based on current energy development for fossil resources that those are going to be time-limited. To the extent those water supplies that are developed for energy uses start phasing out and we've got population growth demand coming up, we need to figure out how those supplies that were previously used for energy development can somehow be transitioned over to meet the population growth demand. If that water that was developed for energy isn't being used for future energy needs — solar, wind, nuclear, whatever — maybe that water can be switched over, through some kind of process, to meet some of that future growth.

Q: My next set of questions relate to administration challenges for the agency. What I'm going to do is combine my three subcategories: (i) funding, (ii) additional staffing and (iii) critical issues for surface and groundwater administration as the lead of the agency. In my mind, water administration is paramount. You can have all the water decrees in the world, but without water administration/management the system doesn't work. I think Colorado has done an incredibly good job over the years with its water administration — through its division offices — being able to administer the resource. But, we all know that the States, not just Colorado, but the States all over the union are experiencing severe budget crises. We know that the division here is primarily funded under the general fund. As those moneys become more stretched and obviously dedicated to other areas do you see the State seeing water administration as not as big an issue now. What are your thoughts?

A: Well, obviously these funding challenges we have here have risk to critical functions like water administration and public safety — both well and dam safety construction, for example. I think these budget problems can be summed up by that expression "the Chinese character for crisis is made of two characters, one is danger the other is opportunity." I think it's so true because it is like going through a drought. It makes you look introspectively at what you're doing and it has made us as an agency look at again what our core mission is and what our core obligations are. We've got a lot of legal obligations through statutes, water administration and compacts. But, when we've looked in that introspective

Colorado Water

Human Resources Needed

Demand Growth

Senior Rights Expansion

way as to what our core functions are, it's really made us reevaluate our mission. We've gone through some restructuring over the last couple of years to try to put our resources to our most critical needs and most critical functions. While we think almost all of the functions are vitally important, we obviously had to prioritize. So it has caused an impact on us. We've lost positions out of this process in the last couple of years. We've had to become smarter, work harder, do more with less, but it has given us an opportunity of how we can predict the future and how we can do our business better. There are ways we found though this "crisis" (if you will)…we've become more efficient. We've also used technology in a little smarter and better ways. But, what I recognize out of this prioritization is that there are limits based on our current technology and how far we can stretch it. While I think we've utilized technology to a tremendous degree, we're now almost human-resource-limited again. There is a basic need in water resource administration at this time to have boots on the ground. Technology has helped us a lot there but we don't have all the pieces quite in place to really reduce the need for human resources to stay on top of administration. I see us going through a transition of change where I think in the short term we are going to need additional human resources and boots on the ground. We need more commissioners, we need more engineers developing these tools to help them administer the water. We just have so much growth — over 1,200 water applications to the water court every year. Our demands are continuing to grow having to manage more and more with no more bodies. I think in the future, with technology we may have tools that may help us administer water with less human resources. But, we're not quite there yet and I think there's still going to be a period where we're going to demand and still need some additional staffing to, I think, continue to perform at the level that the citizens expect in Colorado.

I think we've done an excellent job so far and I think this effort has been recognized because the legislature has been very supportive of us even during these crisis times to try to minimize the fiscal impact. The legislature could have taken a lot more from us but they have recognized the value of the services we provide. They know we operate very lean and they are helping us get though this crisis. So I think, if we can make it through these next couple of years and get back some of the people we have lost, we can look forward to a transition period where I think through attrition, and eventually at some point with technology (although I don't have all the answers yet), that we would probably, hopefully, try to minimize the amount of human resources we need to provide the level of service necessary. So that's how I think, in a nutshell, how to answer some of your questions about the water administration challenges.

We have discussed some of the critical issues regarding surface and groundwater administration — climate change impacts on these existing decrees for example. However, the two other areas that I see in the near term that are a critical issue for surface water administration is expansion of the senior irrigation rights. We've seen through the FRICO Ditch case, the Jones Ditch case and Weldon Valley cases [see below] what the potential impact that has for not only for those individuals that have those water rights or are changing them, but from our administration standpoint. We are seeing more and more of a push for us to handle these expansions outside of the context of a change case and dealing with them more on the administrative basis. The second issue is ponds. There is a proliferation of ponds out there. Ponds are just getting out of control in my mind, and we need to get our minds around this issue.

FRICO, Jones Ditch, and Weldon Valley Ditch Cases

The FRICO case is cited as *City of Englewood v. Burlington Ditch, Reservoir and Land Co.*, 235 P.3d 1061 (Colo. 2010). This case involved the change of Burlington-Barr and FRICO-Barr water rights. The Division 1 Water Court re-quantified the Burlington-Barr and FRICO-Barr water rights with terms that limit the 1885 Burlington storage right to use under the Hudson and Burlington Extension laterals as they existed in 1909 and applied these new terms to all shares under the ditches. The Division 1 Water Court also applied a limit per share for the shares changed for new uses. The limitations on amount per share were also applied to all shares in the system that use only gravity fed irrigation systems based on a system wide analysis by FRICO and a stipulation as to its application. While the Division 1 Water Court used a variety of criteria to come up with the above re-quantifications, the primary factor in reducing the Burlington rights was the Division 1 Water Court's finding that they were expanded once FRICO become involved, after 1909. The Supreme Court evaluated the Division 1 Water Court's ruling on other matters, but ultimately affirmed the Division 1 Water Court's ruling.

The Jones Ditch case is cited as *In re Water Rights of Central Colorado Water Conservancy Dist.,* 147 P.3d 9 (Colo. 2006). In this case the water rights holder filed two applications in water court seeking to change the use of a portion of its water rights. The District Court, Water Division 1, found that the ditch water right was an appropriation of an absolute water right, and ruled that the lawful historic use of the water right was limited to the volume of water sufficient to irrigate approximately 344 acres. The water court also ruled that, based on a parcel-by-parcel analysis of the ditch water right, water rights holder was entitled to consumptive use credit for the historic volume of water used to irrigate its acres. Water rights holder appealed to the Colorado Supreme Court who held that: (i) the water right decreed for irrigation purposes in 1882 was an appropriation of an absolute water right that could not be enlarged; and (ii) ditch-wide analysis of water right was preferable to parcel-by-parcel analysis.

The Weldon Valley Ditch case is a Division 1 Water Court proceeding (Case No. 2001CW263) regarding the Central Colorado Water Conservancy District's proposed change of 4 out of 640 total shares in the Weldon Valley Ditch Company. The issue raised in this case was the potential expansion of use of the ditch when some of the shares in the mutual ditch company are changed using a parcel by parcel analysis of historical use. This issue is caused by the historical practice of mutual ditch companies to not strictly deliver a share holder's pro-rata portion of the water rights each day, but rather increase or decrease the amount delivered based on operational considerations such as farm headgate location, demand for water by all shareholders, amount of water available, etc. In this case Division 1 Water Court originally ruled that once the volumetric limits for the changed shares were reached, the ditch diversions had to be reduced by the pro-rata amount. However, upon a motion for reconsideration, the Division 1 Water Court changed its ruling to allow the full amount to be diverted into the ditch even after the volumetric limits were reached, but required Central to demonstrate that the return flows were being maintained.

Colorado

William Fronczak is an attorney with Perkins Coie LLP in Colorado whose practice focuses on water rights, water quality, and environmental law throughout the United States. Mr. Fronczak is a member of Perkins Coie LLP's Environment, Energy & Resource practice group and plays an integral role in the firm's water policy and water law sub-practice groups. Prior to his current position with Perkins Coie LLP in Colorado, he practiced law in Georgia in the areas of water and environmental law. Mr. Fronczak is also an adjunct professor at the University of Colorado where he teaches water law and policy, with a focus on western water law issues. He extensively writes and frequently lectures on water issues across the country, including for the National Business Institute, the Colorado Bar Association, the Institute of Continuing Legal Education, and the American Bar Association. Prior to his legal career Mr. Fronczak was the Chief of Water Supply for the State of Colorado from 1997 to 2004, where he was instrumental in the development of policy for the adjudication, administration, and management of Colorado's water resources east of the continental divide. Mr. Fronczak also practiced as a private water and environmental consulting engineer from 1991 to 1997. Mr. Fronczak earned his B.S. and M.S. degrees in Chemical Engineering and Environmental Engineering from the Colorado School of Mines, and his J.D. degree from the University of Denver. He is licensed to practice law in Colorado and Georgia and is a licensed professional engineer in the states of Colorado, Georgia and Wyoming.

As far as groundwater — and the sustainability of aquifers — we have talked about this. Exempt wells, is another one I think we need to as a society and as the legislature deal with the impacts of the un-replaced depletions associated with exempt wells. It's a problem throughout the West. We talked about it at the annual meeting of the Association of Western State Engineers about how to deal with the impact of exempt wells and what they are in the system. Finally, there are the designated basins in general or the Denver basin mining of aquifers. Those areas are unsustainable right now. Once the wells are depleted and the aquifers are gone what are you going to do? Also, how is that going to impact the local economy? I don't think people are generally thinking where the future lies with some of this now. They know that water levels are declining, but they are putting it off till the next generation or the next administration. But I think we need to be really thinking hard about those right now.

Q: My next topic area is federal challenges and strategies. We touched on this a little bit, but I would like to get your thoughts regarding state rights vs. federal requirements. Specifically do you see the federal government stepping in as water in the nation becomes more and more scarce.

A: My response to that is this — I would agree that if the individual States and their respective stakeholders along with other States do not work amongst themselves or take the appropriate steps to address these future demands and understanding the physics of the system in developing laws and regulations, and they get into crisis mode, yeah, I think you're right, then the federal government would step in. I think one of the functions that federal government feels they're obligated to do is to step in when you're in crisis mode. But we've entered into these compacts because this is a method to avoid the litigation method. So I think people understand that there are always ways to move through these issues and work with stakeholders. Obviously, they've put in the Clean Water Act and the Endangered Species Act for the reasons they did and we need to work with those laws. But I think if we just stay diligent and try to stay ahead of the curve to avoid being in a crisis mode, I think we are going to be able to better predict our future and avoid having the federal government coming in and taking over.

I also think that Colorado can and has taken a leadership role in some of these issues; however, I also see a lot of other great people in other States doing great things too. I see a lot of other States communicating better with their stakeholders and performing more outreach efforts to try and educate more people in these issues. I see some great successes and I think that's what people need to continue to do — work in a collaborative way to find solutions to these problems, because, in my mind, there are really no other options to solving these problems. There are a lot of great ideas out there. We need to just communicate better in sharing these ideas to solve these problems.

Q: Are there other issues that you think of regarding water supply and how to meet future demands, for example water outside of Colorado for use in Colorado?

A: Other alternative water supplies outside Colorado that could impact Colorado have been discussed. I know of the tapping the Mississippi River. However, when you think about where the vast majority of our water exists it is in the ocean. Obviously it's salt water and it's expensive to treat, but if you think of a physical source we need figure out ways to utilize this vast resource. As one example, we may be able to take advantage of some of the desalination projects on the lower Colorado River. If we can allow some of these users to get off of the Colorado River system because they can treat sea water, we could possibly do an exchange and allow additional water to be used upstream. This is something that should be explored. We would obviously have to pay those guys to develop a supply using desalination and we would have to deal with all the environmental issues, but it is something that should be explored.

We're also seeing improved crops where they are more efficient in that they use the same volume of water for a multi-fold increase in the yield of crops. Something probably a little more out there is a possibility of developing strategies for reducing human needs for water consumption. Maybe we can become more efficient not only in the amount of food we need to survive, but the water we need to survive. We continue to think and govern with water demands continuously growing and so we have to keep thinking of where the next supply is going to come from. However, what can we do to continue to reduce demand? Obviously, we look at conservation as being one of those measures.

Look at the water use across the world. If we compare the water per capita used in the United States compared to third world countries, we could reduce our demand. This would obviously affect our lifestyle but this is an example of a means already out there to reduce demands — not that necessarily people want to go there.

Conclusion

I agreed with many of Dick's areas of emphasis. Where can we become more efficient? Is the water park necessary? Is there a way we can conserve water through minimizing evaporative losses? Through creative thinking we can stretch the water supply, but we need to think outside the box.

There is only so much water that is going to fall in the mountains and be available for use and this may be changing due to global warming. We also have to not just look at the State of Colorado when dealing with water rights, but possibly look at the water supply on a river system basis.

I thanked Dick for his time and insights regarding these issues.

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Nebraska Water Law

NEBRASKA'S EVOLVING WATER LAW

CHALLENGES & OPPORTUNITIES – PART I

by Mary E. Kelly, Parula LLC (Austin, TX)

Editor's Note: The following "Part I" of this article provides extensive information on the State of Nebraska's water resources, the development of those resources, and Nebraska's current water management framework. Part II, which will appear in next month's issue of *The Water Report,* will explore Nebraska's compliance with the Republican River Compact and include a comparison of water management approaches from other states.

Figure 1: HIGH PLAINS AQUIFER

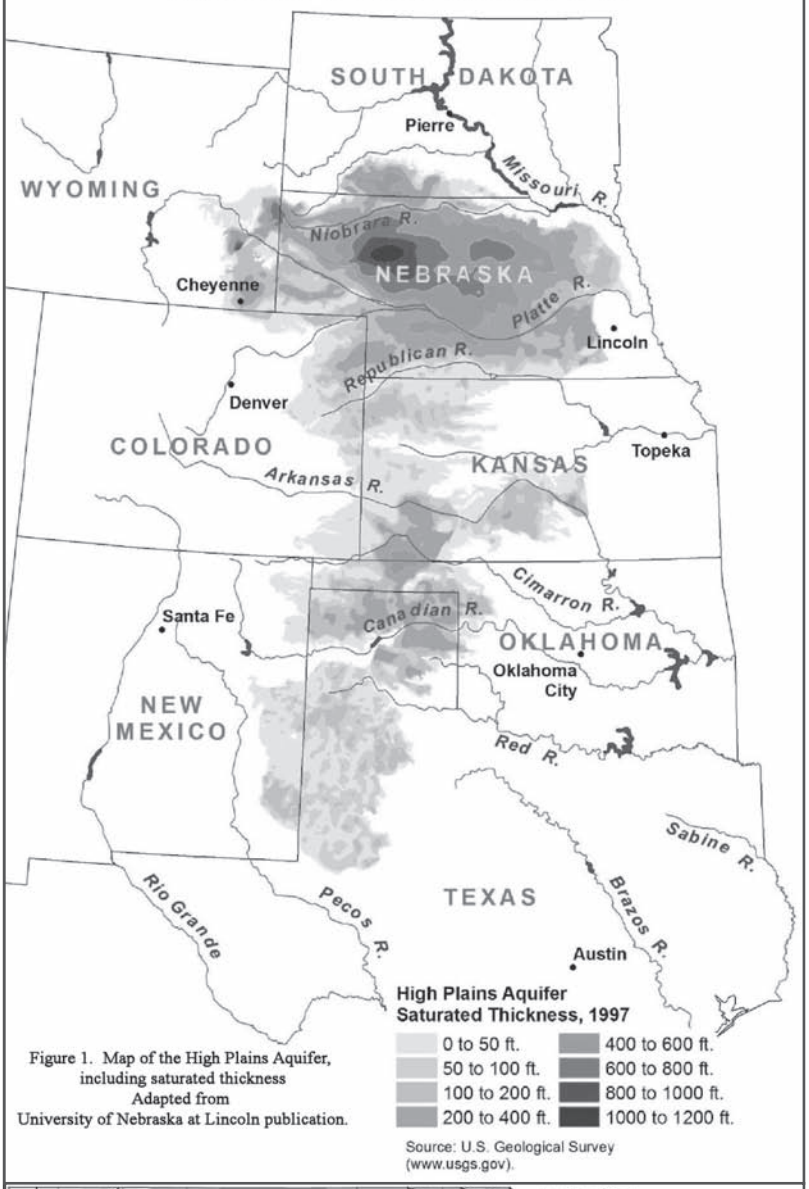


Figure 1. Map of the High Plains Aquifer, including saturated thickness
Adapted from
University of Nebraska at Lincoln publication.

Figure 2
Nebraska Rivers

INTRODUCTION

ABUNDANT WATER RESOURCES

Nebraska is endowed with abundant, accessible water resources. From the vast reserves of the High Plains Aquifer to the healthy flows of the Republican, Platte, Niobrara, and several other rivers, Nebraska's water resources are extensive, especially in the context of the state's modest and relatively stable population.

The High Plains Aquifer

As the United States' largest underground reserve of water, the High Plains Aquifer (also referred to as the "Ogallala Aquifer") covers 174,000 square miles over portions of eight states (Figure 1). In total, the aquifer is currently estimated to store about three billion **a**cre-**f**eet (AF) of water[1] — though not all of this water is technically or economically recoverable. Nebraska contains 37% of the aquifer's land area and an estimated 65% of the total aquifer volume. The saturated thickness of the aquifer in many areas of Nebraska ranges from 200 to 1200 feet.

The aquifer underlies most of Nebraska, including the Republican, Platte, and Niobrara river basins. In most areas, the water table of the High Plains Aquifer is relatively near the surface, ranging from zero to 300 feet. This relatively shallow depth enhances the aquifers connectivity to surface water. For example, the US Geological Survey (USGS) reports that in 1975 the High Plains Aquifer contributed in the range of three million AF/year to the Platte River.[2] Another source estimates that groundwater contributes 50% to 90% of surface flows in the Platte and Niobrara Rivers and 10% to 20% in the Republican River.[3] Throughout Nebraska, spring flows and aquifer seeps contribute to the headwaters of smaller streams and creeks. Evaporation rates parallel or exceed rainfall in many areas overlying the High Plains Aquifer, particularly in western Nebraska, leading to generally low recharge rates.

The Republican River

The Republican River is formed from the North Fork of the Republican (originating in Colorado) and the Arikaree River (originating in Kansas). After being joined by the South Fork of the Republican (also originating in Colorado), it flows through southwestern Nebraska before crossing into Kansas (Figure 2). There are two major reservoirs on the river, Harlan County Lake and Swanson Lake, which primarily supply water for irrigation. About 40% of the river's drainage basin lies in Nebraska, fed by a series of major tributary rivers flowing into the Republican from the north — with the rest of the basin being split between Kansas and Colorado.

Nebraska Water Law

Declining Stream Flow

Snowmelt Runoff

Groundwater Dependent

Interstate Compact

Allocation

The Republican River basin in Nebraska is a complex system, with highly variable inflows and substantial groundwater/surface water interaction along its mainstem. Many of the major tributaries to the Republican have their own similar complexities. Stream flows are generally declining, however, as measured at a variety of gauges throughout the basin over the last half-century. The declines are not fully accounted for by precipitation variability or surface water use. As discussed below, these changes, and their implications for groundwater and surface water management, as well as compliance with the Colorado/Kansas/Nebraska compact governing interstate allocation of the Republican, have led to substantial water law and policy innovation seeking to move this basin towards sustainability.

The Platte River

The Platte River is formed in western Nebraska by the joining of the waters of the South and North Platte Rivers. The South Platte headwaters lie in the Front Range of the Rocky Mountains in Colorado, linking its higher flows to snowmelt runoff from April to June. About 15% of the 24,300 square mile South Platte Basin lies within Nebraska (almost 80% lies in Colorado). The North Platte also originates in the Rockies, but before reaching Nebraska it makes its way through Colorado to Wyoming, where a series of federal reservoirs for irrigation have been developed. In Nebraska, it flows into the 35,700-acre Lake McConaughy, one of Nebraska's largest reservoirs. This reservoir, owned by Central Nebraska Power and Irrigation District, provides both hydropower and irrigation water.

As it flows through Nebraska, the Platte is a broad, braided river, with a well-deserved international reputation as excellent habitat for fish, birds, and wildlife. However, stream flow reductions and other pressures have resulted in adverse effects on the once-abundant pallid sturgeon and three endangered bird species (whooping crane, least tern, and piping plover). As discussed in more detail below, a species recovery program under the federal Endangered Species Act is being implemented in the Platte Basin.

Flows in the North Platte, in particular, are heavily dependent on groundwater input, posing similar challenges as found in the Republican River Basin with respect to conjunctive surface and groundwater management.

The two forks of the Platte also depend on inflows from other states. The South Platte River Compact between Colorado and Nebraska was signed in 1923, making it one of the earliest interstate compacts to be approved by Congress.[4] The compact requires Colorado to limit diversions of any post-1897 rights between April and October in order to maintain a daily mean river flow of at least 120 cubic feet per second or greater at a gauge at Julesburg, in northeast Colorado, as long as such flows are necessary for beneficial use in Nebraska.[5] These limits apply to diverters essentially between Fort Morgan, Colorado, and the Colorado/Nebraska state line.

Allocations and interstate management of the North Platte are governed by a US Supreme Court (Supreme Court) decree, the result of litigation filed by Nebraska against Wyoming in 1934 after compact negotiations failed. The Supreme Court issued its decree, to which Colorado is also a party, in 1945. The original decree essentially allocated 75% of the natural flows originating in the Wyoming portion of the basin to Nebraska. The decree was revised in the mid-1990s, after litigation was re-initiated by Nebraska, and a broad settlement of issues and decree revisions were approved by the Supreme Court in 2001.[6]

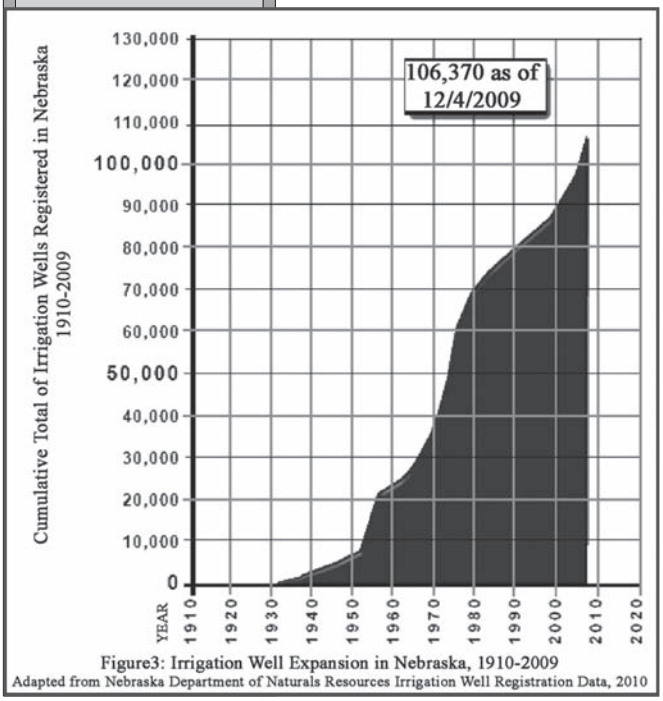


Figure3: Irrigation Well Expansion in Nebraska, 1910-2009
Adapted from Nebraska Department of Naturals Resources Irrigation Well Registration Data, 2010

The Niobrara River

The Niobrara begins in Wyoming and crosses into Nebraska on the state's western boundary. The river flows east across the northern portion of the state until it enters the Upper Missouri. A 76-mile stretch of the Niobrara was designated a National Scenic River in 1991 and is frequently used for canoeing and other water-based recreational activities. Like the Republican and the Platte, there is substantial groundwater/surface water interaction along the course of the Niobrara.[7]

WATER RESOURCES DEVELOPMENT & IMPLICATIONS

Nebraska's water resource management challenges are currently derived from three major, and often intersecting, drivers:

1) Pumping: the operation of a vast network of center pivot irrigation systems, with pumping volumes significant enough to potentially affect aquifer sustainability and river flows
2) Compact requirements: the obligation to meet water delivery requirements under the Republican River Compact and related settlement
3) Instream needs: the increasing need to ensure instream flows for protection of fish and wildlife, as well as habitat and river recreation

Nebraska Water Law

Groundwater & Irrigation

Aquifer Declines

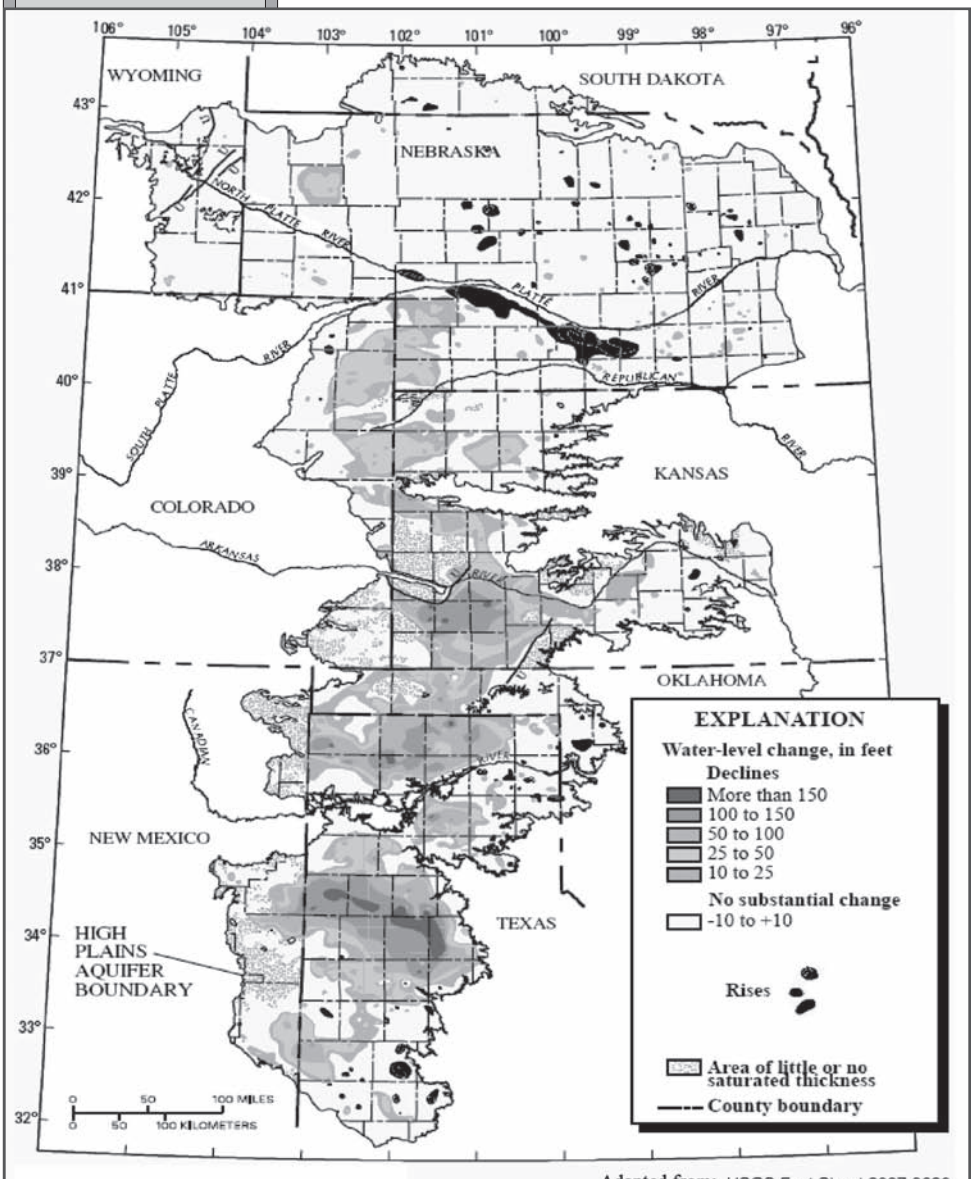
Agricultural Water Use

The center pivot irrigation system began to take hold in Nebraska in the mid-1960s. Figure 3 shows the expansion of irrigation wells associated with center pivot irrigation. There are now well over 50,000 center pivot systems in operation. Groundwater, primarily from the High Plains aquifer, is used to supply these systems. Groundwater use for irrigation now accounts for over 80% of total state water withdrawals, (excluding withdrawals for hydropower and thermal power plant cooling).[8] In large part due to the use of center pivots, Nebraska now has the most land of any state in the country under irrigation — 8.56 million acres[9] — and is the third largest user of groundwater among the states (following California and Texas).

Groundwater irrigation has increased rapidly in just the last few decades. According to the Nebraska Department of Natural Resources, total irrigation wells registered increased from 80,000 in 1990 to over 106,000 in 2009.

Irrigation generally results in increased crop yields in comparison to dryland farming. About 60% of the corn grown in Nebraska is irrigated, with reported yields in the range of 180 bushels/acre, versus 130 bushels/acre for dryland.[10] The inflation-adjusted value of land with access to irrigation has nearly doubled since 1970.[11] Irrigated agriculture is also a mainstay of Nebraska's economy, estimated to contribute $3.6 to $4.5 billion in net economic impact.[12]

In some areas of the state, the intensive use of groundwater for irrigation has led to local aquifer declines. Throughout the southern portion of the state, groundwater level declines of from five to 40 feet are common.[13] In other areas of the state, groundwater levels have not declined substantially and have, in fact, increased. Note that similar, or even more stark declines are common throughout the entire range of the High Plains aquifer. Figure 4 shows regional declines in the various states that overlie the aquifer.



Adapted from: USGS Fact Sheet 2007-3029 May 2007

Figure 4: Regional Water Level Changes, High Plains Aquifer, USGS.

As many Nebraska water experts have observed, the increasing use of groundwater — especially in areas where groundwater has historically provided substantial input to stream flow — is one of the most prominent challenges facing state decision-makers.[14] The issue has arisen in the context of Nebraska's ability to meet certain compact delivery requirements on the Republican River (see discussion below). In the North Platte, some surface water right holders have been unable to exercise their full water rights. These users have begun to use various avenues to resolve this issue, from administrative proceedings to litigation to seeking new legislation. These actions are reshaping Nebraska's water law and creating uncertainty about the respective rights of surface water holders and groundwater users.

Conflicts between groundwater pumping and surface water flows are only likely to increase. The effect of pumping on stream flow may not show up immediately, as Professor David Aiken explained in his comprehensive 2006 article.[15] In fact, except for instances where groundwater is being pumped from the shallow alluvial aquifer (via wells adjacent or nearly adjacent to the river), changes in a stream's base flow due to pumping hydrologically connected groundwater may not show up for years (depending on how far the pumping is from the river and how fast the water moves through the aquifer).

Nebraska Water Law

Pumping Effects

Streamflow Impact

THIS DELAY IN PUMPING EFFECTS HAS TWO BROAD IMPLICATIONS:

1) Groundwater level declines are not necessarily the appropriate trigger for deciding when to regulate pumping to protect stream flow
2) Reductions in groundwater pumping will not necessarily result in immediate improvements in stream flow

AS AIKEN FURTHER NOTES:

> Regional water level changes are not a reliable guide as to when groundwater pumping may reduce streamflows or even when groundwater supply problems are developing. Groundwater level declines will become apparent only when the aquifer discharge to the stream has stopped, and when the transition from a gaining perennial stream to a losing ephemeral stream will be difficult to reverse...Not until 2004 did the impact of pumping [hydrologically connected] groundwater become an official factor in triggering groundwater regulations...The fundamental policy issue is that much of the groundwater pumping in Nebraska (and in the West) involves the pumping of tributary groundwater without regard to its future impact on streamflow. The long-run impact of this will be to turn [water] gaining streams into [water] losing streams. (Aiken, 2006, supra n. 3, at 973-974).

In the Republican River basin, where about one million AF/year of groundwater is pumped for irrigation, it has been estimated that about 14% to 18% of the pumping is associated with stream flow depletion, reducing flows in the Republican by 25% in the lower portion of the river and to 44% in the upper Republican.[16]

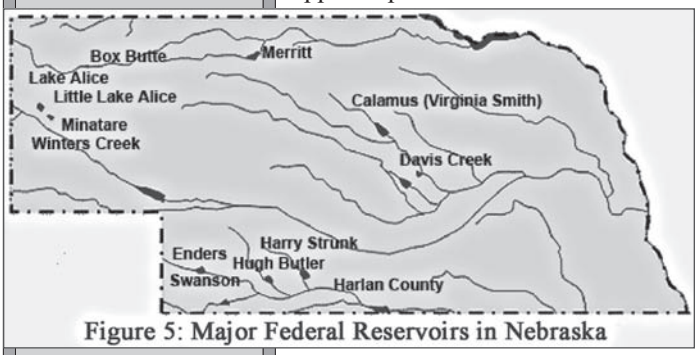


Figure 5: Major Federal Reservoirs in Nebraska

Agricultural irrigation also places more direct pressure on surface water resources and now accounts for about 12% of total state water withdrawals (excluding hydropower and water for thermal power plant cooling). Surface water irrigation derives primarily from in-state and out-of-state US Bureau of Reclamation reservoir projects (Figure 5) and Lake McConaughy.

In addition to water lost through reservoir evaporation, the operation of water storage reservoirs can substantially alter stream flow patterns.[17] In a river such as the Platte, with extensive surface water development throughout the basin, this has meant very significant alteration of in-river and riparian habitat, with consequent effects on various species of fish and wildlife.

Flow Pattern Altered

AS SUMMARIZED BY USGS:[18]

> The channel of the Platte River in Wyoming, Colorado and Nebraska has been narrowed to as little as 15 percent of its former width as a result of in-channel sediment accumulation in some stretches, caused by the placement of dams upstream. The numerous dams and reservoirs that provide flow regulation for irrigation have also depleted much of the Platte River's volume and significantly reduced the magnitude of spring floods. The riparian habitat, depended on by various species of cranes and other waterfowl, has also been severely restricted. Balancing the need for irrigation water for farmers upstream and for restoring wildfowl habitat downstream is one of the management challenges now faced. Adaptive management techniques have been suggested that would allow for moderate releases that could submerge sandbars that would otherwise host germination of unwanted vegetation. Under such a management strategy, planned releases could also open and maintain a channel adequate for use by waterfowl.

Instream Flow Needs

Throughout the United States, increasing water use over the last few decades has led to concerns about maintaining sufficient instream flows for fish, wildlife, riparian habitat, and recreation. Issues concerning the Platte and Niobrara Rivers in Nebraska highlight these concerns.

Degradation of riverine and riparian habitat in the Platte River has led to the development and implementation of a three-state, multi-species recovery program for three endangered birds and one endangered fish. While water use is not the only factor in the decline of these species in the Platte, the changing flow patterns have had a significant effect. The multi-agency **c**ooperative **a**greement (CA) approved in 2006 includes water management goals for restoring both base flows to benefit native fish and wildlife and "pulse" flows to benefit instream and riparian habitat. [Editor's Note: A "pulse" flow is one component of a natural flow regime. Most rivers (at least those not highly regulated by a dam) have "base" flows which are fairly constant throughout the year, then "pulse" flows of various durations, usually associated with spring snow melt runoff or heavier precipitation events. Pulse flows can provide "overbanking" flows outside the river banks, which is useful to riparian systems, but even lower volume pulses usually have ecological importance for fish and other aquatic species. Pulse flows are also designed to provide or restore in-channel geomorphological functions].

"Pulse" Flows

Nebraska Water Law

Storage "Environmental Account"

Scenic River

Instream Conflict

"Correlative Rights" Doctrine

Groundwater Transfers

Local Control

NRD Regulation

Targets for Nebraska include restoring 130,000 to 150,000 AF/year within 13 years (out of an estimated 417,000 AF annual shortfall) and addressing reductions in surface and groundwater to target flows caused by depletions begun or expanded after July 1997. Relicensing of the hydropower facilities associated with Lake McConaughy resulted in the creation of an "Environmental Account" of 100,000 AF (about 10% of the authorized storage in Lake McConaughy) which can be used to release water flows for the benefit of downstream endangered species.[19] These targets are over and above the current instream flow rights held by the Nebraska Game and Parks Commission and the Central Platte Natural Resource District water bank. The plan is also dependent on significant adaptive management work, as well as the combined "integrated management plans" of the "Natural Resource Districts" located in the Platte Basin (Natural Resource Districts are delineated under state law, see below).

Another river receiving increasing attention from a flows standpoint is the Niobrara. As described by the Niobrara Council, the river is somewhat unique in Nebraska, offering "an outstanding example of a largely free-flowing Great Plains river. The valley contains a large concentration of scenic cliffs and waterfalls, rare in the Great Plains."[20] With 76 miles designated as a federal Scenic River in 1991, the Niobrara is attracting increasing numbers of recreational users, bird watchers, and other tourists, bringing vitally important revenue to the local rural economy.

While the level of surface water development and groundwater irrigation in the Niobrara has not been as extensive as in the Platte or Republican, there are developing conflicts between irrigators and the need to legally protect adequate instream flows for fish, wildlife, riverine habitat, and recreation. Parts of the basin have been declared "fully appropriated" and the Nebraska Department of Game and Fish has begun a suite of studies to better define instream flow needs for the Niobrara.[21] As discussed below, however, Nebraska has both important statutory and case law limits on new appropriations for instream flow purposes.

NEBRASKA'S CURRENT WATER MANAGEMENT FRAMEWORK

Nebraska has developed a fairly comprehensive water management framework. From the regional to the state level, Nebraska has put in place a system of interlinked statutes and regulations, providing a variety of tools to develop, conserve, manage, and protect both surface water and groundwater. This statutory and regulatory framework is paired with a series of important state court decisions, as well as federal court decisions related to interpretation of the Republican River Compact.

Groundwater

Groundwater in Nebraska has been subject to a combination of common law and detailed statutory provisions. On the common law front, the state courts adopted the "rule of reasonable use" overlaid with a "correlative rights" doctrine for allocation among groundwater users in times of shortage. This doctrine, unique among US states, was articulated in the case of *Olson v. City of Wahoo* in 1933:[22]

> [T]he owner of land is entitled to appropriate subterranean waters found under his land, but he cannot extract and appropriate them in excess of a reasonable and beneficial use upon the land which he owns, especially if such use is injurious to others who have substantial rights to the waters, and if the natural underground supply is insufficient for all owners, each is entitled to a reasonable proportion of the whole…

This basic doctrine has been adopted into statute by the legislature, with certain very important modifications. State law provides that "every landowner shall be entitled to reasonable and beneficial use of the groundwater underlying his or her land" subject to the provisions of the Nebraska Groundwater Management and Protection Act, and the "correlative rights of other landowners when the groundwater supply is insufficient for all users."[23] In enacting this doctrine, the legislature made broad findings about the need to manage and regulate groundwater use for the long-term benefit of the public and the state economy.

The legislature has also modified the aspect of traditional rule of reasonable use that limits groundwater use to the overlying land, allowing it to be transferred to other parcels or other uses.[24]

Nebraska's Ground Water Management and Protection Act (GWMPA) was adopted in 1975.[25] GWMPA divides the state into 23 Natural Resource Districts (NRDs), generally based on basin boundaries. These NRDs, which are governed by locally elected boards, have been granted broad powers by the legislature, from groundwater management and regulation, to flood control, water supply, erosion control, drainage and even forest management. The NRDs develop groundwater management plans, which are subject to review and approval by the Nebraska Department of Natural Resources. The statute specifies the elements that must be contained in these plans, including a proposed "ground water reservoir life goal" for each district.[26]

With respect to regulating groundwater pumping, an NRD can declare a "ground water management area,"[27] within which it can impose pumping restrictions, temporary new well moratoria, measurement of groundwater use and, in certain cases, a reduction in irrigated acreage.[28] Allocations of groundwater within a management area must generally be made in a way that allocates an equal amount of water per acre throughout the area, though there is the possibility of variations in allocations for "varying climatic, hydrologic, geologic, or soil conditions," "different hydrologic relationships between ground water and surface water," or other conditions.[29]

Nebraska Water Law

Texas Comparison

These broad and flexible powers give Nebraskan NRDs distinct advantages over similar districts in other states that rely on local control.

In Texas, for example, local districts are also the "preferred" approach to groundwater management.[30] But in contrast to Nebraska's statewide basin-based districting, Texan Groundwater Control Districts (GCDs) are only established upon local or legislative initiative. With the exception of the vast Edwards Aquifer Authority, most GCDs have been created on county jurisdictional lines, not on aquifer or river basin boundaries. This means that several different districts may cover just small parts of the same aquifer, each with its own different approach to management and Texas now has over 90 GCDs. The lack of consistent management has been recognized by the Texas legislature. There is now a process underway by which groundwater districts covering the same aquifer have been grouped into "ground water management areas" and tasked with arriving at common "desired future conditions" for the aquifer.[31] While Texan GCDs can generally develop management plans and goals and regulate well spacing and pumping, their powers are narrowly drawn and often ambiguous, especially in comparison to those provided to Nebraskan NRDs.[32] Moreover, GCDs have faced constant administrative and litigation challenges, especially in response to any sort of conservation-minded management. GCDs receive little financial or technical assistance from the state. Moreover, the ability of many GCDs to raise a reasonable budget to carry out aquifer modeling and/or monitoring has been limited by restrictions in their authorizing legislation. For example, some districts are prohibited from imposing ad valorem property taxes [tax based on value of the property] and must depend on pumping fees. As one might imagine, reliance on pumping fees can be a serious disincentive to conserving the water resource through pumping limitations.[33]

Budget Constraints

However, while Nebraskan NRDs benefit from broader authority, before 2004 most NRDs had not fully exercised those powers.

Professor Aiken notes:

> …NRDs were not actively regulating groundwater development (well drilling) or use (pumping restrictions) until recently. For many years, only one NRD [the Upper Republican NRD] restricted well drilling and ground water withdrawals, although two NRDs began regulating ground water withdrawals in the 2005 irrigation season [Middle and Lower Republican NRDs].[34] (citations omitted).

Water Metering

The Upper Republican NRD, which has experienced extensive center pivot irrigation development and some of the largest groundwater level declines in the state, has been regulating groundwater withdrawals for about 30 years.[35] Recently, this NRD made full use of its authority and mandate to protect groundwater resources by imposing strict consequences on irrigators that bypassed required water metering devices.[36]

As discussed below, the linkages between groundwater pumping and Republican River Compact delivery requirements, and the state's subsequent enactment of Legislative Bill (LB) 962, is now driving much of the regulatory action in all three of the Republic River NRDs as well as in other NRDs throughout the state. As more NRDs become active in declaring and adopting regulations for groundwater management areas, they may face more administrative and legal challenges.

Narrow Standing Decision

A recent Nebraska Supreme Court opinion, however, appears to limit the range of actors that can challenge NRD decisions, perhaps substantially. In *Central Nebraska Public Power and Irrigation District v. North Platte Natural Resource District*,[37] the court found that Central did not have standing under the Administrative Procedures Act to appeal a 2008 decision of the North Platte NRD that lowered groundwater allocation from 14 inches to 12 inches per acre.[38] The court held that even though Central is the permitted holder (i.e. owner) of the surface water rights it claimed would be impaired by the allowed level of groundwater pumping, it holds those rights for the benefit of others (irrigators and the general public). Therefore, the court concluded, Central's interests were essentially "derivative" of other interests, depriving it of standing under Nebraska precedent.[39] The court went on to find that Central's pleadings also essentially failed to show a "fairly traced" link between the groundwater pumping allowed under the regulations at issue and the reduction of inflows to Lake McConaughy. The court seemed particularly discomfited by the pleadings allegation that Lake McConaughy would be "ruined" or was being "destroyed" by the NRD actions, calling it "apocalyptic rhetoric."[40] While it is obviously too early to characterize the full effect of this ruling, it would seem that standing to challenge NRD regulations, at least from a surface water perspective, will be narrowed substantially.

Surface Water

Constitutional Provision

The Nebraska Constitution provides that "[t]he use of the water of every natural stream within the State of Nebraska is hereby dedicated to the people of the state for beneficial purposes" and that "[t]he right to divert unappropriated waters of every natural stream for beneficial use shall never be denied except when such denial is demanded by the public interest."[41] Since 1895, surface water in Nebraska has been allocated according to the Prior Appropriation Doctrine (first in time, first in right) used throughout most of the western United States.

DNR Permits

The Nebraska Department of Natural Resources (DNR) is empowered to issue surface water rights permits for beneficial use, including the place and purpose of use, authorized diversion rates, and other conditions.[42] Permits can contain conditions necessary to protect the public interest. However, except

Nebraska Water Law

Broad Discretion

Surface Rights Adjudication

Non-Use Case

Niobrara Interstate Conflict

Over Appropriated Basins

for permits for induced groundwater recharge and inter-basin transfers, DNR is not expressly required to include conditions that protect instream flows for fish and wildlife or consider whether the permit applicant has engaged in water conservation or can demonstrate a need for the requested water.[43] This leaves the DNR with broad discretion in permit application decisions, and leaves those concerned about a particular proposed use with little or no guidance as to how DNR will balance various factors that might bear on the "public interest."[44]

Nebraska has completed adjudication of surface water rights on all its rivers, a process initiated in the early 20th century. This is a distinct advantage over some western states that are still struggling with complex, expensive and time-consuming stream adjudication processes. "Dividing the Waters," a resource for judicial officers presiding over complex water litigation, notes that "other adjudications could occur if [the] Iowa, Omaha, Sac & Fox, Santee, or Winnebago Tribes seek to quantify their water rights."[45]

Surface water rights are potentially subject to cancellation, under various procedures and conditions specified in the statute, after five consecutive years of non-use.[46] Like most western states, however, Nebraska has been reluctant to cancel unused rights. The issues surrounding non-use, however, have been raised in litigation in the Niobrara River basin, where in 2007 the Nebraska Public Power District (NPPD) sought to exercise senior priority surface water rights that have not been used for several years.[47] Despite having concluded in previous years that the Niobrara was not fully appropriated, once NPPD made the call for its 1942 rights, DNR declared the upper part of the Niobrara fully appropriated and ordered many junior surface water users and groundwater pumpers to cut back. This decision was challenged in state court by four NRDs, and a Nebraska Supreme Court decision is expected soon (case was argued in September 2010). Two irrigators lodged an administrative challenge to the closing order issued by DNR in response to the NPPD call, and that issue is still pending before DNR.[48] Some irrigators also challenged DNR's cut-back order in federal court as a "taking" — but they have so far not been successful on that issue.[49]

Ranchers in the Upper Niobrara have also brought a mandamus action [lawsuit brought to force action] seeking to compel DNR to execute various monitoring and data analysis activities under the 1962 Nebraska/Wyoming Compact on the Niobrara.[50] The plaintiffs in this case, which is pending in state district court, assert that groundwater development in Wyoming is reducing stream flows into Nebraska and undermining their ability to exercise senior water rights.

As shown in Figure 6, significant stretches of Nebraska's rivers are now held to be fully- or over-appropriated from a surface water standpoint. Drought, increased pumping of hydrologically connected groundwater, and the use of surface water rights that have not been heretofore fully exercised all have the potential to cause controversy and legal conflict in the future.

The enactment of LB 962 (the provisions of which are discussed in detail below) has substantially affected the relationship between surface water permittees (holders) and groundwater users. The "appropriation" classification of a river is largely based on the situation of junior water right holders — if these juniors are not adversely affected under the current status, then senior right holders would be fully protected as well.

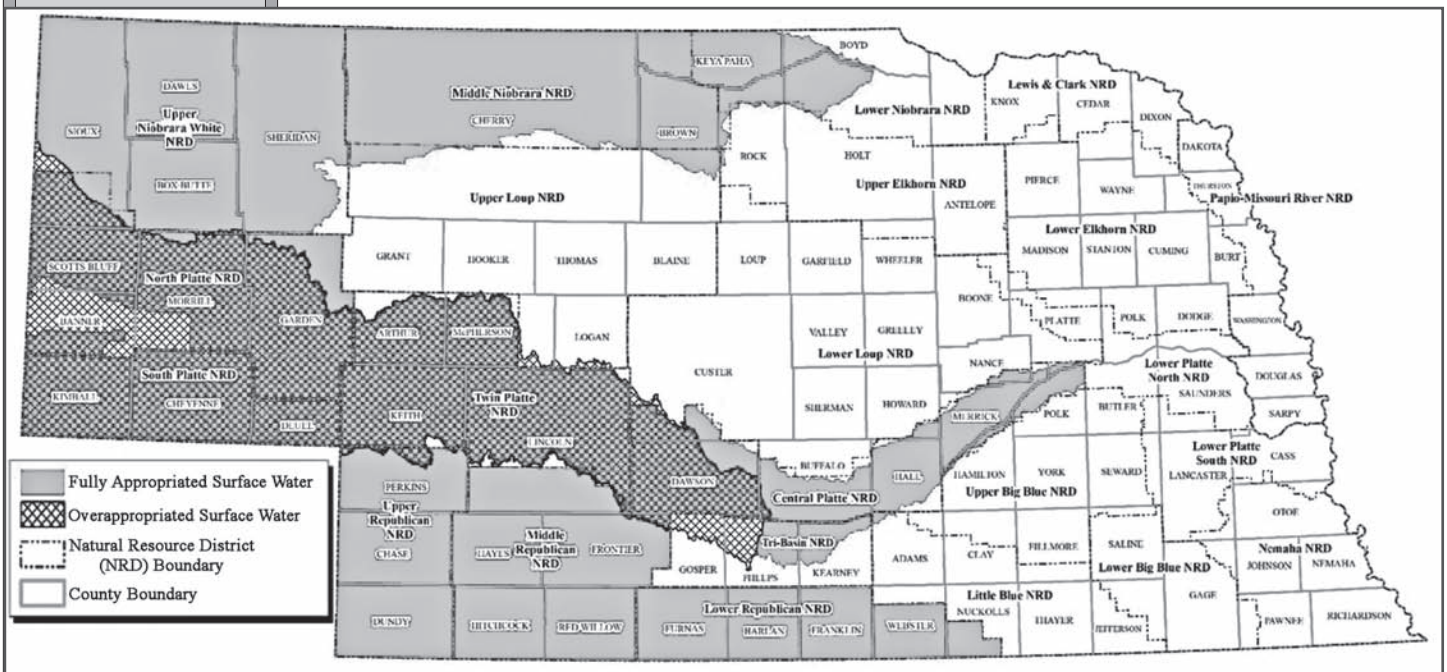


Figure 6: Fully and Over Appropriated Basins in Nebraska
adapted from Nebraska Department of Natural Resources data, 2008

Nebraska Water Law

Hydrologically Connected Groundwater

DNR rules for making appropriation determinations provide, in part:

> 001.01A Except as provided in 001.01C below, for purposes of Section 46-713(3)(a), the surface water supply for a river basin, subbasin, or reach shall be deemed insufficient, if after considering the impact of the lag effect from existing groundwater pumping in the hydrologically connected area that will deplete the water supply within the next 25 years, it is projected that during the period of May 1 through September 30, inclusive, the most junior irrigation right will be unable to divert sufficient surface water to meet on average eighty-five percent of the annual crop irrigation requirement, or, during the period of July 1 through August 31, inclusive, will be unable to divert sufficient surface water to meet at least sixty-five percent of the annual crop irrigation requirement.
> 457 Neb. Admin. Code, Chapter 24, Sec. 001.01A.

Thus, DNR first evaluates the effect of pumping of hydrologically-connected groundwater on projected surface flows, and then looks at whether junior water rights can be satisfied at the stated threshold. Known as the 65/85 rule, this trigger drives the appropriation classification. Under LB 962, a fully-appropriated designation kicks in various provisions capping water use at current levels under LB 962 and requires development of integrated groundwater/surface water management plans (see below).

Groundwater/Surface Water Interconnectivity

Conjunctive Management

The extensive interconnectivity of groundwater and surface water in Nebraska, combined with Republic River Compact delivery requirements and flow issues on the Platte River, brings the challenges associated with conjunctive management of surface and groundwater to center stage in Nebraska. Court rulings, administrative and legislative actions, literature, and opinions on the various aspects of groundwater/surface water connectivity in the state are extensive and varied. It is beyond the scope of this article to delve into all of them in detail. Instead, this subsection focuses on: (1) the broad implications of and issues raised by the *Spear T Ranch v. Knaub* case (*Spear T Ranch)*[51]; and (2) the provisions and implementation of LB 962.[52] See Sievers & Golden, *TWR* #21.

Legal Recognition

The 2005 Nebraska Supreme Court ruling in *Spear T Ranch* set a new course for the state's water law. By giving judicial recognition to the reality of groundwater/surface water interconnectivity, the court erased the legal fiction of separation that still plagues many western states.[53] The legal recognition of this connectivity constitutes an important, albeit controversial, first step towards long-term sustainable water management.

Balancing Test

The court's creation of a judicial balancing test based on section 858 of the Restatement of Torts (Second), however, raises a whole host of new questions. [Editor's Note: the Restatement is an influential treatise issued by the American Law Institute]. In brief, the court held that section 858 should be used to adjudicate disputes between surface water right holders and groundwater pumpers. This case-by-case "balancing of the equities" leaves many issues for further development and, likely, litigation. The court showed some clear empathy for the surface water right holders who initiated the case, seeking redress for the sharp declines in the flow of Pumpkin Creek.[54]

THE COURT HELD:

> Initially, we reject a rule that would bar a surface water appropriator from recovering in all situations. Such a rule would ignore the hydrological fact that a groundwater user's actions may have significant, negative consequences for surface water appropriators.
> Instead, the common law should acknowledge and attempt to balance the competing equities of groundwater users and surface water appropriators; the Restatement approach best accomplishes this. The Restatement recognizes that groundwater and surface water are interconnected and that in determining the rights and liabilities of competing users, the fact finder needs broad discretion. Thus, when applying the Restatement, the fact finder has flexibility to consider many factors such as those listed in [section] 805A [of the Restatement], along with other factors that could affect a determination of reasonable use.[55]

Reasonable Use

The Restatement balancing factors themselves do, indeed, offer almost unlimited discretion to the fact-finder. The court noted that the "test is flexible and that a trial court should consider any factors it deems relevant."

Balancing Factors

FACTORS TO BE BALANCED INCLUDE, BUT ARE NOT LIMITED TO:[56]

- Purpose of use
- Suitability of the use to the watercourse or lake
- Economic value of the use
- Social value of the use
- Extent and amount of harm it causes
- Practicality of avoiding the harm by adjusting the use or method of use of one proprietor or the other
- Practicality of adjusting the quality of water used by each proprietor
- Protecting of existing values of water uses, land, investments, and enterprises
- Justice of requiring the user causing the harm to bear the loss

Nebraska Water Law

Groundwater Issues

Conjunctive Management

LB 962 Provisions

"Fully Appropriated" Consequences

Groundwater Restrictions

Supply/Use Balance

Nebraska legal commentators have noted the uncertainty and potential for further litigation over these factors in specific cases. Professor Aiken has raised the issue of whether the Restatement rule would apply only to interconnection between surface flow and pumping of the immediately connected sub-flow groundwater, or whether it can be extended to pumping of hydrologically connected but more distant "tributary" groundwater.[57] Another commentator, Donald Blankenau, has raised two additional issues: (1) how the *Spear T Ranch* decision will interact with the groundwater/surface water models and integrated management plans being developed under LB 962; and (2) the prospect of substantial monetary damage awards to surface water right holders encouraging litigation and the effect of such litigation on LB 962 implementation. Blankenau, noted, however, the court's holding that the effect of groundwater pumping on surface water flows must meet a "direct and substantial" threshold test to be successful.[58]

In some ways, successful implementation of LB 962 is critical to avoiding further litigation under the new common law established by the *Spear T Ranch* decision. This ground-breaking legislation, if fully implemented, could set Nebraska on a clear path to sustainable, conjunctive management of surface water and groundwater — something that has thus far eluded virtually every state in the western US.

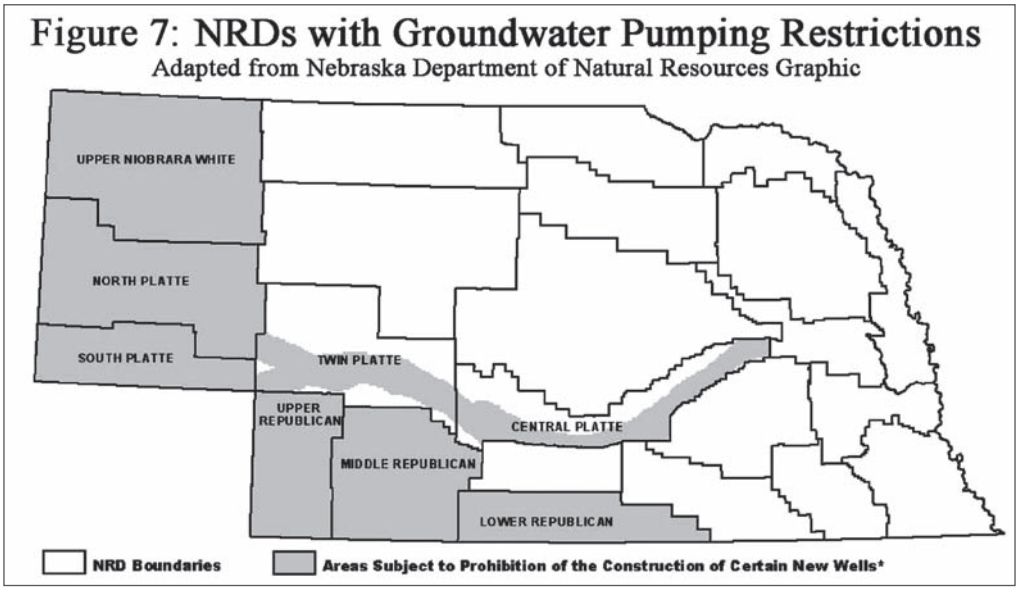
The basic conjunctive management provisions of LB 962, which grew out of a multi-stakeholder task force, can be summarized briefly as follows.

Major LB 962 provisions include:[59]

- Basin appropriation classification: river basins and the associated NRDs are evaluated by the state, via DNR, as to their appropriation classification
- Hydrologic connection consideration: DNR considers both surface flows and the 25-year "lag effect" of use of groundwater that is hydrologically connected to stream flow[60]
- Consequences to "fully appropriated" designation: All or a portion of nine NRDs (generally those located in the drier western and southwestern parts of the state) were designated as fully appropriated upon adoption of the bill. By statute, a "fully appropriated" designation automatically triggers moratoria on new surface water permitting and on new groundwater well drilling in areas of hydrologically-connected surface water and groundwater until development of an approved Integrated Management Plan. LB 962 further provides that, in reaches preliminarily determined to be fully appropriated, stays shall also be imposed on wells permitted but not constructed before the preliminary determination and on the expansion beyond "historic use" from existing wells and surface water permits.[61]

The Integrated Management Plans (IMPs) are developed by the NRDs with assistance from DNR. IMPs are subject to review and approval by DNR. There are now nine approved IMPs, with five more to be completed.[62] Undesignated basins are reviewed annually by DNR. Figure 7 shows the current status of basins and related NRDs.

Figure 7: NRDs with Groundwater Pumping Restrictions
Adapted from Nebraska Department of Natural Resources Graphic



An over-appropriated basin is theoretically one where the extent of development is not sustainable over the long-term. However, Sec. 46-713(4)(a), by linking "over-appropriated" status to a river with an "interstate cooperative agreement" and certain moratoria measures in place on July 16, 2004, is written so as to essentially limit the "over-appropriated" designation to the Platte River.[63]

The overall goal of an IMP is to obtain a balance between water use and supply in order to sustain the economic viability, environmental and social health, and public safety and welfare in the basin over both the near term and long term.[64] Both voluntary and regulatory measures to meet IMP goals are contemplated.

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Surface Water Measures

IMP SURFACE WATER MEASURES MAY INCLUDE:

(a) increased monitoring and enforcement of surface water diversion rates and amounts diverted annually;

(b) the prohibition or limitation of additional surface water appropriations;

(c) requirements for surface water appropriators to apply or utilize reasonable conservation measures consistent with good husbandry and other requirements of section 46-231 and consistent with reasonable reliance by other surface water or ground water users on return flows or on seepage to the aquifer;

(d) other reasonable restrictions on surface water use which are consistent with the intent of section 46-715 and the requirements of section 46-231.[65]

For groundwater, the measures are generally those authorized for NRD groundwater management plans.

Groundwater Measures

IMP GROUNDWATER MEASURES MAY INCLUDE:

- allocation of groundwater to various users
- rotational irrigation requirements
- well-spacing rules
- measurement and monitoring requirements
- reduction of irrigated acres[66]
- limitations on or prevention of the expansion of irrigated acres
- limitations on increases in the consumptive use of groundwater withdrawals from water wells used for irrigation or other beneficial purposes.[67]

Broad public and stakeholder participation is required in the development of and decision on the IMPs. Uses existing prior to the preliminary appropriation determination are generally protected from mandatory cutbacks, though they might be included in relation to voluntary or incentive-based programs. For example, the Central Platte NRD has established a Water Bank to perpetually lease existing groundwater irrigation rights and retire them in order to reduce stream flow depletions in the Platte River. The Bank has so far obtained almost 2,456 AF of such credits out of an IMP target of 2,503 AF.[68]

Water Bank Option

DNR provides a wide range of technical support for IMP development, including: groundwater and surface water hydrological modeling; evaluation of instream flow needs; water demand projections; effect of land use changes on stream flow and recharge rates; options for reservoir or other infrastructure re-operation; and economic analysis of alternatives.[69]

Trust Fund

Significantly, LB 962 also established the Water Resources Trust Fund, to be used for implementation. The funds can be used by both the state and NRDs. In addition, NRDs were provided with authority to adopt an additional $0.01/$100 taxable valuation to generate funds for LB 962 work.

LB 962: Protection Hopes

While the LB 962 process is still relatively new and quite ambitious, it most likely provides the best hope of both protecting the water resources of the state and preserving economically valuable water use. It is a solid and reasonable alternative to disruptive and expensive private litigation between surface water and groundwater users or a legislative rewrite of Nebraska water law to harmonize groundwater and surface rights under the Prior Appropriation Doctrine.

A central set of challenges for Nebraska water policy decision makers will be to ensure transparency, the use of good science, and on-going monitoring of IMP implementation to build water user and public confidence in the LB 962 process. In some areas, voluntary market transactions (leases, purchases, dry year options, etc.) will likely be necessary to reduce existing consumptive use. All of this will require substantial and sustained funding, but the alternatives would clearly be more expensive.

Instream Flows

Limited Instream Rights

Nebraska's statutory instream flow provisions, many of which have been in place since 1984, focus on new appropriations for instream flow. Instream flow for "recreation and fish and wildlife" is defined as a beneficial use and only the Game and Fish Commission and NRDs can obtain instream flow appropriations.[70] Game and Fish and the NRDs are to define the segments with a "critical need for instream flows" and quantify those needs.[71] These provisions do not appear to have been fully implemented. University of Nebraska-Lincoln Professor Sandra Zellmer noted: "…only 247 miles (2%) of Nebraska's 12,371 miles of streams and rivers have received some protection through instream flow appropriations (8 miles on Long Pine Creek and 239 miles on the Platte River)."[72]

Instream Restrictions

The statute contains other restrictions on new instream flow appropriations: (1) unappropriated water must be available 20% of the time;[73] (2) the flows must be the minimum necessary to protect existing recreation and fish and wildlife resources;[74] and (3) the permits are subject to review every 15 years and can be cancelled or modified.[75]

Stored Water Option

However, the statute does give the Director of DNR discretion to investigate the use of "stored water" for instream flows if insufficient natural instream flow is unavailable:

> "If the director determines that there is insufficient unappropriated natural flow available for an application for an instream appropriation and if the applicant consents, the department may conduct a study to determine whether the instream flow needs can be met through the use of stored water in new storage facilities. The study shall address the availability of storage sites, the estimated cost of providing any required storage, and such other findings and conclusions as the department deems appropriate."[76]

Nebraska Water Law

Instream Amounts

Lease Possibility

Instream Flow Drivers

Mary Kelly has 25 years of experience as an environmental lawyer, having worked in private practice and the not-for-profit sector. Before forming her own private consulting firm in July 2010, she served as Senior Counsel for Rivers and Deltas for the Environmental Defense Fund, managing EDF projects to protect and restore habitat, rivers and coastal deltas across the US. She has specialized in water law and U.S./Mexico binational water management during much of her career. Ms. Kelly joined Environmental Defense Fund in 2002, after many years as the Executive Director of the Texas Center for Policy Studies. Previous to that, she was a partner in the firm of Henry, Kelly & Lowerre and various predecessor firms, representing citizens and local governments in a wide variety of environmental matters. She is a frequent speaker at state and national legal conferences.

Comparing Nebraska water law to that of other western states, Professor Zellmer concluded that "Nebraska's existing instream flow legislation is quite narrow. Nebraska statutes impose a variety of restrictions on instream flow appropriations, many of which are unique and even unprecedented."[77] Eisel and Aiken, however, noted that interpretation of the statutory language by the Nebraska Supreme Court indicates room for flexibility:

> The Nebraska Supreme Court has ruled that this language does not require instream appropriations quantities be limited to provide merely survival habitat and no more, but rather a flow rate that would maintain the existing habitat quality, even if that existing habitat quality were "optimum to outstanding" (*In re: Application A-16642*, 463 NW2d 591, 609-12 (Neb. 1990)). Thus, there is considerable room for interpretation and discretion regarding the quantity of an instream appropriation in Nebraska.[78]

In 2004, via LB 962, the legislature provided that the "consumptive use" portion of existing surface water rights could be leased for instream flow purposes for up to 30 years, though this provision as yet does not appear to have been widely exercised.[79]

The flow protection activities that have occurred in Nebraska seem to be driven by factors other than a comprehensive statewide program to protect instream flows. Activities to date have been driven largely by the cooperative agreement in the Platte, compact delivery requirements on the Republican River, and recreation interests in the Niobrara. Unlike many western states, Nebraska does not have a state-run or non-profit water trust dedicated to leasing water rights for instream flow purposes.

SUMMARY

Nebraska water management is entering a new era. After many decades of extensive and lightly regulated irrigation development — heavily dependent on the vast and accessible reserves of the High Plains Aquifer — the state now faces several challenging issues.

Water management challenges include:

- conflicts between surface water and groundwater users
- compliance with Republican River Compact delivery requirements
- debates over how best to ensure instream flows for fish, wildlife, and recreation

In the last few years, Nebraska policymakers, state and local agencies, water users, and academic and non-governmental leaders have responded to these challenges with impressive dedication, new ideas, and financial resources. The results include the ambitious innovations of LB 962.

LB 962 innovations include:

- cooperative efforts to recover species and habitat quality in the Platte River
- financing for reducing consumptive water use in various basins and NRDs
- increasing recognition of the economic value of recreation and ecotourism on rivers like the Niobrara

Other developments, like the holdings in the *Spear T Ranch* and *Central Nebraska Public Power District* cases discussed above, raise new issues that may spur further litigation and/or legislative action. Almost all of the issues at the top of the Nebraska water policy agenda have an associated financing challenge: how to secure and make the most economically efficient use of funds to solve water management problems. In meeting these challenges, it may be useful to draw on water management approaches tried and lessons learned in other states, particularly those with similar challenges.

CONCLUSION

While Nebraska is endowed with abundant water resources, it faces some difficult management challenges over the next several years. Interaction between groundwater and surface water, and the conflicts that can generate between respective users of these two supply sources, are at the top of the policy agenda, along with challenges in protecting instream flows for fish, wildlife and recreational tourism.

Fortunately for Nebraska, the legislature and policy-makers at the state and regional levels have undertaken some quite innovative efforts to deal with groundwater/surface water interaction. Many of the measures reviewed in this paper are relatively new and their full implementation will no doubt present new and difficult questions, some of which will likely end up in the courts. Nevertheless, these measures represent a genuine effort by Nebraska to build a more sustainable water management framework. In this respect, there are many features of Nebraska law and policy that could be of interest to other western states facing similar challenges.

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This article was adapted from a Policy Study by Mary Kelly, *Nebraska's Evolving Water Law: Overview of Challenges & Opportunities*, (Sept. 2010), published by the Platte Institute (www.platteinstitute.org).

Footnotes for this article appear on the next page.

Footnotes for "Nebraska's Evolving Water Law"

1 V.L. McGuire, "Changes in Water Levels and Storage in the High Plains Aquifer: Pre-development to 2007," USGS, Fact Sheet 2009-3005, February 2009.
2 USGS, Groundwater Atlas of the United States, HA-730D, Kansas, Missouri and Nebraska. Available at http://pubs.usgs.gov/ha/ha730/ch_d/D-text2.html.
3 James Goeke, "Surface Water and Ground Water Relationships in Nebraska," University of Nebraska-Lincoln, available at water.unl.edu/c/document_library/get_file?folderId=173022&name=DLFE-2927.pdf. See also Aiken, David J., *Hyrdologically-Connected Ground Water, Section 858, and the Spear T Ranch Decision,* Nebraska Law Review 84: 962 (2006). Aiken includes a table for various groundwater contributions to total flows for several river drainages. (Hereinafter cited as Aiken, 2006).
4 See Neb. Rev. Stat. Sec. 1-105 for the text of the South Platte Compact.
5 South Platte River Compact, Art. IV.
6 Detailed information on the North Platte Decree and subsequent litigation and settlement can be found at www.dnr.state.ne.us/legal/nebraska.html.
7 The US Bureau of Reclamation recently approved $350,000 in grant funding for a "Basin Study" for the Niobrara. This study could provide an excellent opportunity to gain a better understanding of the basin hydrology, existing and future water demands and management alternatives. "Grant Funds Niobrara Study," *Omaha World Herald,* 8/1710.
8 Nebraska DNR, state water use data at www.dnr.state.ne.us/SurfaceWater/Total_Withdrawals_2005.pdf.
9 Based on the 2007 Census of Agriculture by the US Department of Agriculture. Nebraska is now estimated to have 8.56 million acres of irrigated farmland, up from about 7.62 million in 2002.
10 2007 USDA Census of Agriculture.
11 Supalla, Raymond, "Will Agricultural Research Make Future Irrigation Reductions Easier?," Cornhusker Economics, September 2008.
12 Charles Lamphear, *Economic Importance of Irrigated Agriculture 2003,* Nebraska Policy Institute, available at www.nebraskapolicy.org/Irrigation_study_Summary.pdf.
13 Goeke, n. 3, supra.
14 See Aiken 2006, supra n. 3.
15 Aiken 2006, supra n. 3.
16 Integrated Management Plan for the Upper Republican (2008), available at www.urnd.org/IMP2008.pdf.
17 See generally N.L. Poff, et al, *Ecological responses to altered flow regimes: a literature review to inform the science and management of environmental flows*. Freshwater Biology. 2009. P 1-12. Brian Richter, et al., *Ecologically sustainable water management: Managing river flows for ecological integrity.* Ecological Applications. 13(1): 206-224. (2003).
18 USGS, "*Dams and Rivers: Scientists Take a New Look Downstream"* (1996), news release summarizing findings of comprehensive 1996 report on the effect of dams on river habitat, available at www.usgs.gov/newsroom/article.asp?ID=811. See also USGS, *Platte River Ecosystem Resources and Management, with an Emphasis on the Big Bend Reach in Nebraska,* August 2006, available at www.npwrc.usgs.gov/resource/habitat/plrivmgt/factors.htm and John Echeverria, *No Success Like Failure: The Platte River Collaborative Watershed Planning Process*, William and Mary Environmental Law and Policy Review, 25:559 (2001) (written prior to the 2006 Cooperative Agreement).
19 Nebraska Game and Parks Commission, Instream Flow Implementation in Nebraska (2009), available at www.nlc.state.ne.us/epubs/G1000/B046-2008.pdf, p. 8 and pp. 11-12 respectively.
20 Niobrara Council, www.niobraracouncil.org/.
21 Nebraska DFG, supra, n. 21 at pp. 23-25.
22 *Olson v. City of Wahoo,* 124 Neb. 802, 248 N.W. 304 (1933).
23 Neb. Rev. Stat. Sec. 46-702 (2004).
24 See, for example, Neb. Rev. Stat. Sec. 46-691 (transfers off overlying land for agricultural irrigation or groundwater remediation uses, setting conditions and allowing for affected persons to protest transfers at the local Natural Resource District).
25 Neb. Rev. Stat. Secs. 46-701 to 46-753 (2004).
26 Neb. Rev. Stat. Sec. 709.
27 Neb. Rev. Stat. Sec. 712.
28 Neb. Rev. Stat. Sec. 739.
29 Neb. Rev. Stat. Secs. 740 and 739 (4), (6)(a).
30 Tex. Water Code Sec. 36.0015
31 See Robert Mace, et al, *A Streetcar Named Desired Future Conditions: the New Groundwater Availability for Texas,* Texas Water Development Board (2008), available at www.twdb.state.tx.us/gwrd/pdfdocs/03-1_mace.pdf
32 Compare Tex. Water Code, Ch. 36 with Neb. Rev. Stat. Secs. 701-753.
33 For more resources on Texas GCDs, see www.texaswatermatters.org/groundwater.htm and www.edf.org/documents/9326_2009_TX_Groundwater_Report.pdf .
34 Aiken 2006, supra n. 3 at 978.
35 For a history of the URNRD actions, see Stephenson, Kirk, *Groundwater Management in Nebraska: Governing the Commons through Local Resource Districts,* Natural Resources Journal, 36:761 (1996).
36 "Harshest possible penalties handed down for URNRD meter violations," *Imperial Republican,* July 6, 2010 (describing URNRD's revocation of irrigation rights of owners who were found to have bypassed meters). Some of the well owners have appealed these penalties. "Bond, Kramer seek hearings on meter violations, penalties,*" Imperial Republican*, August 16, 2010.
37 Opinion issued August 27, 2010, Case No. S-09-727. Opinion available at http://court.nol.org/opinions/2010/august/aug27/s09-727.pdf.
38 Central and Spear T Ranch challenged the proposed regulation at the administrative level and then appealed pursuant to the state APA. The GWMPA provides that "Any person aggrieved by any order of the district…may appeal the order" under the APA. Neb. Rev. Stat. Sec. 750.
39 Opinion at 543.
40 *Id.* at 545.
41 Nebraska Constitution, Articles XV-5 and XV-6.

42 Neb. Rev. Stat. Sec. 46-231, 233.
43 Sandra B. Zellmer, *The Public Interest Test for Water Appropriations* (2006), available at http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1003&context=watercenterpubs.
44 *Id.*
45 See www.judges.org/dividingthewaters/adjudications.html for a summary of adjudication proceedings in various states.
46 Neb. Rev. Stat. Sec. 46-229.
47 For a more complete explanation of the priority date, type of use preference and other issues in this conflict, see J. David Aiken, "Priority, Preferences and Irrigator-Power Disputes on the Niobrara" in *Cornhusker Economics,* October 10, 2007, available at http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1336&context=agecon_cornhusker.
48 Personal communication, Don Blankenau, September 14, 2010.
49 *Keating et al v. Nebraska Public Power District et al,* Memorandum of Opinion, May 12, 2010, Case No. 7:07CV5011 (available at www.omaha.com/assets/pdf/OW5023513.PDF#read-the-judge- s-ruling) .
50 Stephen C. Smith, *"Enforcement of the Nebraska/Wyoming Compact for the Niobrara River Basin,"* The Nebraska Lawyer, July/August 2010.
51 *Spear T Ranch, Inc. v. Knaub, 269 Neb. 177, 691 N.W. 2d 116* (2005). The facts and rulings in *Spear T Ranch* have been extensively analyzed by various commentators and that analysis is not repeated here. See, for example, Aiken 2006, supra n. 3; Donald Blankenau, et al, *Spear T Ranch v. Knaub: The Reincarnation of Riparianism in Nebraska Law,* Creighton Law Review, 38: 1203 (2005) (hereinafter Blankenau 2005); and LeRoy W. Sievers, *Nebraska Water Law Facing Dramatic Changes in Our State: The Spear T Ranch Case*, Nebraska Lawyer, 14 (June 2005).
52 In 2009, the Nebraska legislature passed LB 483, which sets out a number of requirements for DNR with respect to basins that were either changed from fully appropriated to not fully appropriated or have only a preliminary determination of being fully appropriated. Implementation of this legislation is in the early stages and it is not discussed here.
53 See, e.g., Robert Glennon, *Water Follies: Ground Water Pumping and the Fate of America's Fresh Waters*, Island Press (2002).
54 In a broad critique of the *Spear T Ranch* holding, Blankenthau 2005, supra n. 52 at 1208, states that none of the Plaintiffs' appeal briefs mentioned the Restatement; it was only raised in a brief from Defendants. The court explored, but rejected, application of the Doctrine of Prior Appropriation to groundwater. Aiken 2006, n. 3, supra. at 982-83.
55 *Spear T Ranch, 269 Neb. at 193, 691 N.W.2d at 131-32.*
56 The *Spear T Ranch* plaintiffs did not pursue the case on remand and, to date, no court has applied the rule set out in the Supreme Court's opinion.
57 Aiken 2006, supra n. 3, at 989-90, arguing for the broader interpretation.
58 Blankenau, supra n. 54, at 1219-20.
59 LB 962 also addressed transfers of surface water and groundwater rights and cancellation of surface water rights. The 2006 Nebraska legislature passed LB 1226 to refine and augment various aspects of LB 962, including a grant program to assist NRDs in implementation of integrated management plans.
60 See 457 Neb. Admin. Code, Chapter 24, Sec. 001.01A and the "65/85 rule" discussed above. DNR regulations also provide that: "The geographic area within which the Department preliminarily considers surface water and groundwater to be hydrologically connected for the purpose prescribed in Section 46-713(3) is the area within which pumping of a well for 50 years will deplete the river or a base flow tributary thereof by at least 10 percent of the amount pumped in that time." 457 Neb. Admin Code, Ch 24, Sec. 001.02. Section 46-713(3) addresses "fully appropriated" river basins, subbasins, or reaches.
61 Neb. Rev. Stat. Sec. 46-714 and 46-714(a)(2) respectively .
62 See www.dnr.state.ne.us/IWM/docs/IWM_ApprovedPlans.html.
63 Neb. Rev. Stat. Sec. 46-713(4)(a) provides: "A river basin, subbasin, or reach shall be deemed overappropriated if, on July 16, 2004, the river basin, subbasin, or reach is subject to an interstate cooperative agreement among three or more states and if, prior to such date, the department has declared a moratorium on the issuance of new surface water appropriations in such river basin, subbasin, or reach and has requested each natural resources district with jurisdiction in the affected area in such river basin, subbasin, or reach either (i) to close or to continue in effect a previously adopted closure of all or part of such river basin, subbasin, or reach to the issuance of additional water well permits in accordance with subdivision (1)(k) of section 46-656.25 as such section existed prior to July 16, 2004, or (ii) to temporarily suspend or to continue in effect a temporary suspension, previously adopted pursuant to section 46-656.28 as such section existed prior to July 16, 2004, on the drilling of new water wells in all or part of such river basin, subbasin, or reach." See also, Katherine Vogel, *"Declaring a River Basin Over-Appropriated: The Need for Reevaluation of the Republican River Basin,"* The Nebraska Lawyer, July/Aug 2010 (arguing that the Republican River *should* be subject to evaluation of whether or not it is over-appropriated).
64 Neb. Rev. Stat. Sec. 46-715(2)(a) provides that the IMP must have *"[c]lear goals and objectives with a purpose of sustaining a balance between water uses and water supplies so that the economic viability, social and environmental health, safety, and welfare of the river basin, subbasin, or reach can be achieved and maintained for both the near term and the long term."*
65 Neb. Rev. Stat. Sec. 46-716 (1).
66 These measures would be governed by Neb. Rev. Stat. 46-740.
67 Neb. Rev. Stat. Sec. 46-739.
68 See www.cpnrd.org/Final_Fall_2010_CPNRD_Fact_Sheet.pdf.
69 James Schneider, "*Nebraska's Integrated Management Planning Process*," 4/23/10, presented to the Nebraska Water Resources Advisory Board; available at www.dnr.state.ne.us/IWM/Presentations/NE_IWM_PlanningProcess_0410.pdf.
70 88 Neb. Rev. Stat. 46-2,108(2).
71 Neb. Rev. Stat. 46-2,109
72 Sandra Zellmer, *"Instream Flow Legislation"* (November 2006), available at watercenter.unl.edu/WRRI/WRRIWaterResearchPapers.asp.
73 Neb. Rev. Stat. 46-2,115(1).
74 Neb. Rev. Stat. 46-2,115(2), (4).
75 Neb. Rev. Stat. 46-2,112.
76 Neb. Rev. Stat. 46-2,116.01.
77 Zellmer, supra n. 93.
78 Leo Eisel and J. David Aiken, *Platte River Basin Study*, Report to the Western Water Policy Review Advisory Committee, p. 23 (1997), available at http://digitalcommons.unl.edu/ageconfacpub/25. This report also contains a discussion of various instream flow applications in the Platte and subsequent 1997 amendments to the instream flow laws. *Id*. pp. 24-27.
79 Neb. Rev. Stat. Secs. 46-291 to 294 set out detailed provisions for transfers and leasing.

Tribes & Culverts

PROTECTING TRIBAL FISHING RIGHTS

FIXING CULVERTS THAT BLOCK FISH PASSAGE

FINAL RULING ON WASHINGTON STATE TREATY RESPONSIBILITIES EXPECTED SOON

by Matthew Love and Chris Zentz, VanNess Feldman (Seattle, WA)

INTRODUCTION

The right to fish is a fundamental right of the Northwest Indian Tribes. Protection of this right has been a controversial topic that has resulted in over 100 years of litigation. Over the past 100 years, federal courts have been repeatedly called upon to interpret the nature and scope of the Tribes' treaty fishing rights. Since 1970, in *United States v. Washington*, the US District Court in Western Washington has retained jurisdiction to resolve disputes involving these treaty fishing rights between the Western Washington Treaty Tribes and the State of Washington.

Jurisdiction Retained

A significant issue that remained unresolved during the initial *United States v. Washington* litigation was whether the right of taking fish incorporates the right to have treaty fish protected from environmental degradation. In 2001, the Tribes, with the support of the United States, initiated the Culverts Subproceeding with the objective of obtaining a definitive ruling on the issue.

Duty of State

In 2007, the US District Court for the Western District of Washington issued a summary judgment order declaring that the Western Washington Tribes' treaty right of taking fish imposes a duty upon the State of Washington to refrain from building or maintaining any culverts that block anadromous fish migration. *United States v. Washington* (W.D. Wash. Aug. 22, 2007 — see Brief, *TWR* #43).

Specifically, US District Court Judge Martinez declared that:

> [t]he right of taking fish, secured to the Tribes in the Stevens Treaties, imposes a duty upon the State to refrain from building or operating culverts under State-maintained roads that hinder fish passage and thereby diminish the number of fish that would otherwise be available for Tribal harvest. *Id.*

The court emphasized that its decision is not a broad "environmental servitude," but is a "narrow directive to refrain from impeding fish runs in one specific manner [i.e., culverts]." *Id.*

Remedy Trial

The court then set a trial date to establish a remedy. Further delays ensued as the Tribes and the State agreed to postpone the trial, in order to allow time for settlement discussions. But, after extended discussions, the parties could not agree on a remedy and, as a result, a trial was held October 13, 2009, with closing arguments heard in June of 2010. See Case No. 2:01-sp-00001-RSM, Doc. 459 (W.D. Wash., 2009). Judge Martinez has now taken the case under advisement and a final order on the appropriate remedy is expected in the near future.

Environmental Degradation

Now, forty years after the inception of the *United States v. Washington* litigation and ten years after the Tribes initiated the Culverts Subproceeding, the district court is on the verge of issuing a remedy that will offer additional guidance on whether the right of taking fish incorporates the right to have treaty fish protected from environmental degradation. Although this ruling is likely to be appealed, Judge Martinez's upcoming ruling may have significant implications on natural resource development activities that potentially impact fisheries resources.

BACKGROUND

As noted, the Western Washington Treaty Tribes, along with the United States, initiated this matter as a subproceeding in the longstanding *United States v. Washington* litigation in 2001. This litigation, which has been ongoing since 1970, involves determining the scope of the Tribes' treaty fishing rights. The relevant treaties (commonly referred to as the Stevens Treaties) were negotiated by the federal government in the 1860's.

In general, the original lawsuit involved three key issues:

1) whether the treaties' fishing clause entitles the Tribes to a specific allocation of fish;
2) if such an allocation is required, whether hatchery-bred fish are included in the allocation; and
3) whether the right of taking fish incorporates the right to have treaty fish protected from environmental degradation.

These issues were bifurcated into Phase I — dealing with fish harvest allocation, — and Phase II which addressed hatcheries and environmental protections.

The Tribes, in Phase I of the litigation, successfully established that the treaties provided them with a right to take up to 50 percent of the "harvestable" fish. *United States v. Washington*, 384 F. Supp. 312 (W.D. Wash. 1974).

Tribes & Culverts

"Environmental Servitude" Rejected

In Phase II of the *United States v. Washington* litigation, the court considered the reserved hatchery and environmental component issues. In 1980, the district court considered the environmental component and held that "implicitly incorporated in the treaties' fishing clause is the right to have the fishery habitat protected from man-made despoliation." *United States v. Washington*, 506 F. Supp. 187, 203 (W.D. Wash. 1980). On review, the Ninth Circuit rejected the "environmental servitude" created by the district court, but recognized that the State and Tribes must take reasonable steps to preserve and enhance fishery resources. *United States v. Washington*, 694 F.2d 1374, 1389 (9th Cir. 1982). Subsequently, the Ninth Circuit, rehearing the issue en banc, vacated the district court's order as being "imprecise in definition and uncertain in dimension." *United States v. Washington*, 759 F.2d 1353, 1357 (9th Cir. 1985). While rejecting the imposition of a broad "environmental servitude," the court left open the possibility that a specific duty may exist depending upon the facts of a particular case for its definition and articulation. *Id.*

Tribal Request

Sixteen years later, in the Culverts Subproceeding, the Tribes requested a declaratory judgment establishing: 1) that the Stevens Treaties impose a duty on the State to refrain from diminishing the number of fish passing through, to or from the Tribes' usual and accustomed fishing grounds by construction and/or maintenance of culverts; and 2) that the State had violated, and continues to violate, the duty owed to the Tribes under the Stevens Treaties. In addition, the Tribes requested injunctions which would prevent the State from constructing or maintaining any culverts which may impact salmon, and would require the State to identify within 18 months all culverts which impact salmon and repair or replace the identified culverts within five years. The district court has limited the scope of the subproceeding to only include culverts blocking fish passage under State-owned roads.

In response to the Tribes' request, the State acknowledged that many of its older culverts hinder fish passage. Over the past decade, the State has made substantial efforts to repair or replace these culverts. The State has estimated that it would cost hundreds of millions of dollars to remedy the remaining fish-blocking culverts.

JUDGE MARTINEZ'S 2007 SUMMARY JUDGMENT ORDER

Issues Limited

In the 2007 order, Judge Martinez narrowly defined the issue as whether the Tribes' treaty-based right of taking fish imposed on the State a duty to refrain from diminishing fish runs through the construction/maintenance of culverts that block fish passage. In doing so, the court considered whether the Ninth Circuit's prior rejection of a broad, treaty-based "environmental servitude" precluded the Tribes' current request for relief. The court concluded that the Tribes had presented sufficient facts to meet the requirements for issuance of a declaratory judgment.

Treaty Language

In assessing the State's duty under the Stevens Treaties, the court first determined that a treaty must be construed in the sense in which it would be understood by the Tribes. The court focused on the Stevens Treaties' language referencing the "right of taking fish." The court concluded that this language would not have been understood by the Tribes as merely reserving an opportunity to try and catch fish. Instead, the court held that the government's intent and the Tribes' understanding was that the Tribes would be able to meet their own subsistence needs forever with fish.

Court's Rationale

To be meaningful, the court reasoned that the Tribes' promise to cede their land in exchange for the right to take fish carried the implied promise that the government would not take actions that would significantly degrade the resource. As such, the court concluded that the Stevens Treaties impose a duty upon the State to refrain from building or maintaining culverts in such a way as to block the passage of fish upstream or down, to or from, the Tribes' usual and accustomed fishing places.

The court specifically noted that:

> [t]his is not a broad 'environmental servitude' or the imposition of an affirmative duty to take all possible steps to protect fish runs . . . but rather a narrow directive to refrain from impeding fish runs in one specific manner. *United States v. Washington* (W.D. Wash. Aug. 22, 2007).

The court further concluded that the State of Washington currently owns and operates culverts that violate its duty under the Stevens Treaties.

2010 TRIAL TO DETERMINE THE REMEDY

Contrasting Remedies

In the Remedy Phase, the State asked the court to defer to its authority on fixing fish-blocking culverts due to budgetary concerns. *State of Washington's Trial Brief*, Doc. 609 (W.D. Wash., 2009). In contrast, the Tribes sought a comprehensive injunction that would require culverts located on land owned by the Washington State Department of Fish and Wildlife and the Washington State Department of Natural Resources to be fixed by 2016. *Tribes' Trial Brief*, Doc. 609 (W.D. Wash., 2009). In addition, those culverts located on Washington State Department of Transportation land would have to be fixed within 20 years of the final judgment. *Id.*

Tribes & Culverts

State's Arguments

Tribes' Positions

Future Impact

In support of its proposed remedies, the State offered a number of arguments. For example, the State argued that the Tribes' proposed remedy would not necessarily result in any increased fish harvest for the Tribes, and instead, any benefit would be speculative at best. *State of Washington's Post-Trial Brief*, Doc. 663 (W.D. Wash., 2009). In addition, the State questioned whether the Tribes should be entitled to injunctions that will cause institutional reform, because the State believed that using an injunction for these purposes is inappropriate. *Id.* The State also argued that it should retain discretion over the pace and priority of fixing fish-blocking culverts because allowing judicial intervention would disrupt the entire State budget and impose a requirement that the State use tribally-approved methods to replace each and every culvert.

In contrast, the Tribes alleged that the State's current program is broken and that whatever modification could be offered by the State is "too little, too late." *Tribes' Post-Trial Brief,* Doc. 664 (W.D. Wash., 2009). The Tribes also argued that correcting fish-barrier culverts is both an effective and essential method to restoring treaty fisheries. *Id.* In addition, a large portion of the Tribes' post-trial brief focused on rebutting the State's argument that the Tribes failed to meet the necessary elements of an injunction. *Id.* Finally, the Tribes also argued that the injunction they were seeking was carefully tailored to meet the remedy they were seeking and therefore, was neither overbroad nor an improper use of this judicial remedy. *Id.*

As a result of these fundamental disagreements, whatever remedy Judge Martinez fashions is likely to be short-lived. Rather, it is likely to be appealed based on the widely diverging positions and interests of the parties.

The parties made their closing arguments in June of 2010. Judge Martinez has now taken the case under advisement and a final order on the remedy is expected in the near future.

IMPLICATIONS

As noted, because of its significance to both the Tribes and the State, Judge Martinez's final ruling will likely be appealed. If the ultimate remedy adopted by the court is the relief requested by the Tribes, this ruling will have significant impacts on the programs and depleted budgets of the Washington State Department of Transportation and other State agencies, as the agencies reprioritize funding to address the deficient culverts.

In 2007, Judge Martinez specifically stated that the ruling was limited to the facts before it. Notwithstanding, once the Culverts Subproceeding is finally resolved, Judge Martinez's upcoming decision may have significant implications on a broad range of natural resource development activities that potentially impact fisheries resources. If the Tribes succeed in the Culverts Subproceeding, it is likely that the Tribes with a treaty fishing right will attempt to rely upon and expand this ruling to address other environmental and natural resource issues.

For Additional Information:
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Culvert Decision available at: http://static.scribd.com/docs/jn98scwyp5l81.swf

Matthew Love's practice focuses on federal and state natural resource and environmental law, particularly on matters pertaining to the Clean Water Act, Endangered Species Act, Federal Power Act, Magnuson-Stevens Act, and Indian law. Prior to joining Van Ness Feldman, Matt served as Assistant Attorney General for Washington State and as a trial attorney for the US Department of Justice. Matt represents utilities, renewable energy developers (including hydroelectric, tidal, and wind projects), seafood companies, and government entities. He recently provided the City of Tacoma with relicensing, litigation, and compliance counsel for the 131 MW Cushman Project, resulting in an historic settlement of one of the longest lasting relicensing cases at FERC as well as the settlement of a federal court lawsuit involving a damage claim by the Skokomish Indian Tribe.

WATER BRIEFS

ERRATA

ENVIRONMENTAL FLOWS

In the last issue of The Water Report (#80) we published a Water Brief ("Environmental Flows") regarding the release of a new report by the World Wildlife Fund and The Nature Conservancy entitled "*The Implementation Challenge: Taking Stock of Government Policies to Protect and Restore Environmental Flows*." Our brief included an incorrect web link. The correct link to obtain a copy of that report is: http://conserveonline.org/workspaces/eloha/documents/wwf-tnc-e-flow-policies-report.

COMPACT RULING CO/KS/NE

REPUBLICAN RIVER COMPACT ARBITRATOR'S RULING

On October 7, Arbitrator Martha O. Pagel issued decisions in the nonbinding arbitrations over Nebraska's Crediting Issue and Colorado's Compliance Pipeline, as part of the on-going Republican River Compact arbitration. First, Pagel's ruling found that Kansas did not act unreasonably in refusing to approve Colorado's Compact Compliance Pipeline (CCP) Proposal. Colorado officials proposed the compliance pipeline to offset the effects of groundwater depletion on streamflows. The Arbitrator decided that, with certain clarifications and revisions as recommended in her ruling, the CCP Proposal "represents an appropriate and necessary augmentation plan that should be approved by the RRCA." The majority of the Arbitrator's decision focused on additional details that the Arbitrator felt should have been included to allow Kansas to approve the CCP Proposal. Kansas official noted that they are encouraged that Colorado is exploring ways to meet their legal obligations under the Compact and settlement, and that although Colorado's plan sounds promising to date the states have been unable to agree on details of the plan.

Pagel also issued a decision over Nebraska's Crediting Issue. Nebraska is seeking changes in the compact accounting to provide water credits if monetary payments are made for noncompliance with compact terms. Kansas objected that the proposal for monetary payment was contrary to the compact, would encourage future compact violations, and deprive Kansas water users of the water due to them under the compact approved by the US Supreme Court. The arbitrator agreed with Kansas that the proposal is contrary to the compact because substituting money paid for a past violation, "would result in a windfall to Nebraska, allowing accountability for potential future violations to be erased with a single payment for a past violation."

The Republican River begins on the eastern plains of Colorado, flowing into Nebraska and Kansas, where it then flows into the Kansas River. The waters are divided among the three states by the 1942 Republican River Compact. In 1998, Kansas filed a lawsuit against Nebraska and named Colorado as a party to the lawsuit. The States settled that lawsuit in 2002. One part of the 2002 settlement required the States to submit future disputes to a mandatory dispute resolution process, including non-binding arbitration. The current dispute arose from the lack of approval by Kansas and Nebraska to Colorado's CCP Proposal on two previous attempts in 2009 before the Republican River Compact Administration (RRCA). See Lavene & Powers, *TWR* #68.

The RRCA is comprised of a representative from each of the three states including Colorado State Engineer Dick Wolfe as Colorado's Commissioner. Wolfe expressed optimism that approval for the Colorado Compliance Pipeline will eventually be received. Colorado continues to negotiate with Kansas to seek approval of its CCP Proposal.

On November 1, Kansas, Colorado, and Nebraska all responded to the arbitrator's decisions by accepting or rejecting all or parts of the decisions. **For info:** Marta Haynes, Office of the State Engineer, marta.haynes@state.co.us, or 303/ 866-3581; Lisa Taylor, Kansas Dept. of Agriculture, 785/ 296-2653, lisa.taylor@kda.ks.gov; Arbitrator's Decisions and other information available at: www.ksda.gov/interstate_water_issues/content/142

WATER SETTLEMENT AZ

NAVAJO NATION

The 21st Navajo Nation Council (Council) on November 4 approved the Northeastern Arizona Indian Water Rights Settlement (Settlement) on a vote of 51-24. The Council vote is the first step towards securing the Navajo Nation's water rights to the Lower Basin of the Colorado River and Little Colorado River systems.

As part of the Settlement, the Navajo Nation secures 31,000 acre feet per year (AF/yr.) of water from the mainstem of the Lower Basin of the Colorado, un-appropriated water flows from the Little Colorado River, and a nearly unlimited supply of groundwater from the Coconino and Navajo aquifers, which are located under the Navajo Nation. The Settlement proposes to construct three water pipeline projects that will provide water to regions of the Navajo Nation with very little or no water supply: the Western Navajo Pipeline will convey 11,000 AF/yr. of Colorado River water for the communities of LeChee, Copper Mine, Bodaway-Gap, Cameron and Tuba City and 4,000 AF/yr. for the Hopi Tribe; the Leupp-Dilkon Project will supply 4,800 AF/yr from the Coconino Aquifer to Leupp, Bird Springs, Tolani Lake, Teesto, Dilkon, Indian Wells, Lower Greasewood and White Cone; and the Ganado Project will provide 5,600 AF/yr. from the Coconino Aquifer to Ganado, Kinlichee, Jeddito, Cornfields, Steamboat, Klagetoh and Wide Ruins. The Settlement also provides for the delivery of 6,411 AF/yr. to Window Rock and surrounding communities through the Navajo-Gallup Water Supply Project.

Some Council delegates, including Hope MacDonald Lone Tree, repeatedly voiced the same concerns previously presented by grass roots and non-governmental entities. "I read the document and have had numerous concerns about certain language and terms of the agreement. It is wrong to connect the need for waterlines with any irreversible waiver of our water rights," MacDonald Lone Tree said. "There is no funding for these proposed pipelines. Yet we just agreed to give away our

water to all the coyotes who have been stealing it from our people and Nation for years. As far as I'm concerned all the waters that flow off and within the Four Sacred Mountains is ours. We should never shortchange our future generations by leaving them no tools for survival."

The Settlement now goes to President Joe Shirley Jr.'s desk for review. Thereafter, if President Shirley consents, the Settlement will need to be approved by many other parties including the Hopi Tribe, Central Arizona Water Conservation District, Salt River Project, City of Holbrook, and Flying M. Ranch, Inc, among others. Once executed by all parties, the Settlement will proceed to Congress for its approval, which will include authorization to fund the water delivery projects that are a key component of the settlement. "This settlement has what we call a poison pill," Navajo water rights attorney Stanley Pollack said. "If Congress does not spend money for the project, then there is no deal, and Navajo has not waived anything."
For info: Alastair L. Bitsoi, Navajo Nation, 928/ 871-6384, abitsoi@navajo.org or www.navajonationcouncil.org

FRACKING CHEMICALS US EPA IMPACT STUDY

The US Environmental Protection Agency (EPA) announced on November 9 that eight out of the nine hydraulic fracturing companies that received voluntary information requests in September have agreed to submit timely and complete information to help the agency conduct its study on hydraulic fracturing. However, the ninth company — Halliburton — has failed to provide EPA the information necessary to move forward with this important study. As a result, and as part of EPA's effort to move forward as quickly as possible, EPA issued a subpoena to the company requiring submission of the requested information that has yet to be provided.

EPA's congressionally mandated hydraulic fracturing study will look at the potential adverse impact of the practice on drinking water and public health. The agency is under a tight deadline to provide initial results by the end of 2012 and the thoroughness of the study depends on timely access to detailed information about the methods used for fracturing. EPA announced in March that it would conduct this study and solicit input through a series of public meetings in major oil and gas production regions. Thousands of Americans shared their views at the public meetings on the study and expressed full support for this effort.

On September 9, EPA reached out to nine leading national and regional hydraulic fracturing service providers — BJ Services, Complete Production Services, Halliburton, Key Energy Services, Patterson-UTI, RPC, Inc., Schlumberger, Superior Well Services, and Weatherford — seeking information on the chemical composition of fluids used in the hydraulic fracturing process, data on the impacts of the chemicals on human health and the environment, standard operating procedures at their hydraulic fracturing sites and the locations of sites where fracturing has been conducted. Except for Halliburton, the companies have either fully complied with the September 9 request or made unconditional commitments to provide all the information on an expeditious schedule.
For info: www.epa.gov/hydraulicfracturing

HYDROPOWER POTENTIAL US RECLAMATION FACILITIES REPORT

The US Bureau of Reclamation (Reclamation) has issued a Federal Register Notice announcing the availability of the Hydropower Resource Assessment at Existing Reclamation Facilities Draft Report for public review and comment. This draft report is an assessment of the economic and technical potential for hydropower development at existing Reclamation owned non-powered dams and structures. The draft report provides an inventory of hydropower potential using broad energy and economic criteria. It does not make any recommendation for development of the sites included in the report.

Reclamation recently signed a Memorandum of Understanding (MOU) with the Department of Energy and US Army Corps of Engineers to increase renewable energy generation by focusing on development of sustainable, low impact, and small hydropower projects. To help meet the goal of the MOU, Reclamation produced the updated list of facilities and sites best suited for projects to increase sustainable hydropower generation.

Comments may be submitted by mail or email to: Michael Pulskamp, Bureau of Reclamation, Denver Federal Center, PO Box 25007, Denver, CO 80225 or by email to: mpulskamp@usbr.gov. Comments must be received by December 3, 2010.
For info: Peter Soeth, Reclamation, 303/ 445-3615

EXEMPT WELLS RULING NM BOUNDS DECISION REVERSED

The Court of Appeals of the State of New Mexico (Court) on October 29 reversed the district court's decision, which had found that New Mexico's Domestic Well Statute (DWS) was unconstitutional. *Bounds and the San Lorenzo Community Ditch Ass'n v. State of NM, ex rel. John D'Antonio*, Case NO. 28,860 (Oct. 29, 2010). "Although a basin is considered fully appropriated with no unappropriated water available, we do not see how the Legislature is forbidden under a facial constitutional attack from nevertheless enacting an exception to its existing regulatory regime permitting additional appropriation for domestic purposes as long as senior water rights are not in fact impaired or subject to impending impairment because of water shortages requiring priority administration to protect those rights." Slip Op. at 33-34.

The Court was addressing the issue of whether the DWS (NMSA 1978, § 72-12-1.1 (2003) was facially unconstitutional. As noted by the Court, "[T]he DWS is controversial because it requires the permit to be issued upon application without notice, and any prior evaluation by the State Engineer of the effect, if any, of the anticipated domestic water use on senior water rights in a fully appropriated basin." *Id*. at 2. The Bounds own water rights with a priority date of 1869. Bounds "challenged the constitutionality of the DWS on

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the ground that it permits continued withdrawals of groundwater and takings of surface water to the detriment of his vested property rights…Bounds complained about the issuance of prior and future domestic well permits despite existing drought conditions and previous serious water shortages, about the inability of the State Engineer to deny domestic well permits, and about unregulated withdrawals from permitted domestic wells." *Id.* at 3. See also Water Briefs, TWR #54.

The Court concluded that the Legislature had the authority to create an exception for domestic well water users without being forbidden to do so by the Prior Appropriation Doctrine or New Mexico's Constitution — even when a basin is fully appropriated and there is no water available. "In sum, we conclude that the priority doctrine is not a system of administration. It does not dictate any particular manner of administration of appropriation and use of water or how senior water rights are to be protected from junior users in time of water shortages. That the Legislature determines that domestic well permits are to be issued upon application without prior evaluation of water availability or impairment is not, in and of itself, a per se violation of the priority doctrine or of the Legislature's constitutional duty to assure that senior water rights are protected under the priority doctrine." *Id.* at 34-35.

Although the Court upheld the DWS statute, it also urged that Legislative action be taken on the issue: "Amici for and against affirming the district court's judgment present insightful practical and policy arguments for their positions. We appreciate receiving those arguments. The issues Amici have raised should be addressed by the Legislature rather than through a facial attack on the statute's constitutionality." Slip Op. at 34. There is no word yet on whether an appeal will be taken to the New Mexico Supreme Court.

For info: Decision is available by contacting *TWR*

MUNICIPAL WATER LAW WA SUPREME COURT UPHOLDS LAW

In a unanimous decision on October 28, the Washington state Supreme Court (Court) upheld the constitutionality of Washington's controversial Municipal Water Law (MWL). Several Indian tribes, environmental groups, and citizens sued Washington state in 2006 contending that several sections of the MWL were unconstitutional. In *Lummi Indian Nation v. State, et al*., No. 81809-6 (10/28/10), the Supreme Court found that the MWL does not violate the separation of powers clause of the US or state constitutions, or the right to due process.

The Court upheld the 2003 MWL definition of "municipal water suppliers," thereby including private developers with 15 or more residences — and allowed municipal providers to keep rights to as much water as their systems can handle ("pumps and pipes"), even if they haven't historically used that water. Prior to the MWL, "municipal water suppliers" were not defined.

It should be noted that the legal issues before the Court were "facial constitutional challenges to the statutes" and not an "as applied" challenge. An "as applied" challenge occurs where a plaintiff contends that a statute's application — in the context of the plaintiff's actions or proposed actions — is unconstitutional. The Court noted that "a facial challenge must be rejected if there are any circumstances where the statute can constitutionally be applied." (citation omitted). This decision may not be the end of the controversy since the Court also pointed out that "many of the arguments before us might be better raised in an 'as applied' challenge." See Slip Op. at 11.

Under state water law, the Washington Department of Ecology (Ecology) normally issues a certificate to use the water when water is appropriated and put to a beneficial use. Before 1998, however, municipalities, public utility districts, and other water system providers were treated differently when Ecology issued water right certificates. Ecology issued water right permits and certificates to such providers based on needs such as accommodating future population growth — applicants were granted water rights if they had the "pumps and pipes" capacity to put the water to use.

In 1998, the Court ruled that new private water rights did not vest until water was put to beneficial use, and not merely when the "pumps and pipes" capacity to use the water was built. The Court cautioned, though, that its decision at that time did not address municipal water rights, which are often treated differently than other water rights. *Dep't. of Ecology v. Theodoratus*, 135 Wn.2d 582, 586, 957 P.2d 1241 (1998).

In response to *Theodoratus*, the MWL was enacted in 2003 by Washington's Legislature to provide clarity on the nature of the pre-1998 water certificates and flexibility to municipal water suppliers in exercising their water rights. The legislation included provisions that explicitly defined certain non-governmental water suppliers as municipal and made the definition retroactive. The bill declared that "water right certificate[s] issued prior to [September 9, 2003] for municipal water supply purposes as defined in RCW 90.03.015" based on system capacity were rights in good standing.

Several Indian tribes, environmental groups and individuals contended that the municipal water suppliers were allowed to keep rights to more water than their systems could handle, even if they did not use the water. Another important issue was that the definition of "municipal water suppliers" in the MWL included developers along with cities and towns, since the only requirement under the MWL was that the applicant supply connections to more that 15 residences to qualify for the special treatment. As noted in *Lummi*, supra at 20: "Municipal water suppliers are not subject to the risk of relinquishment as most private water right holders, and are subject to a different set of conditions before changing the place of use."

For info: Copy of the Supreme Court available at: www.ecy.wa.gov/programs/wr/rights/muni_wtr.html

WATER BRIEFS

AGING INFRASTRUCTURE US

CLEAN WATER & DRINKING WATER EPA POLICY ISSUED

On October 4, EPA issued its Clean Water and Drinking Water Infrastructure Sustainability Policy (Policy) as part of its efforts to promote sustainable infrastructure within the water sector. According to EPA, sustainably managing our water infrastructure is one of the biggest challenges facing the water sector and is essential to protecting human health and the environment, and realizing the goals of clean and safe water. Communities across the country are facing challenges with their water infrastructure — often comprised of aging systems in need of significant upgrade and repair.

The Policy emphasizes the need to build on existing efforts to promote sustainable water infrastructure, working with states and water systems to employ robust, comprehensive planning processes to deliver projects that are cost effective over their life cycle, resource efficient, and consistent with community sustainability goals. The policy encourages communities to develop sustainable systems that employ effective utility management practices to build and maintain the level of technical, financial, and managerial capacity necessary to ensure long-term sustainability.

Working with its federal, state, and local partners, EPA will develop guidance, provide technical assistance, and target federal state revolving fund capitalization funds and other relevant federal financial assistance to increase the sustainability of our water infrastructure. The policy can be downloaded at the website listed below.
For info: James Horne, EPA, 202/564-0571, horne.james@epa.gov, or http://water.epa.gov/aboutow/upload/Sustainability-Policy.pdf

WATER REUSE CA

CALIFORNIA LEGISLATION

In early October, Governor Schwarzenegger signed Senate Bill 918, authored by State Senator Fran Pavley and co-sponsored by the Planning & Conservation League and the WateReuse Association. The new law directs the State Department of Public Health to develop criteria for safely using recycled water to supplement groundwater basins, reservoirs and the state's water supplies.

The legislation is intended to provide a viable solution to improve California's water supply. It was estimated by John Beuttler, Conservation Director of the California Sport Fishing Alliance, that four million acre-feet of water can now be effectively reused annually.
For info: SB 918 available at: http://leginfo.ca.gov/bilinfo.html; CSPA, http://calsport.org

WATER PURCHASE WA

MUNI & INSTREAM USE

Pend Oreille County's Public Utility District No. 1 (PUD) and the Washington State Department of Ecology (Ecology) signed a Memorandum of Agreement on October 22 to help solve critical water shortages in northeast Washington. Under the agreement, the PUD will release 14,000 acre-feet of water from Sullivan Lake each summer, when the water is needed most. In the past, water releases have occurred only during winter.

Ecology's Office of Columbia River (OCR) will allocate two-thirds of that water — about 9,400 acre-feet — to new water rights for northeast Washington communities, including Pend Oreille, Ferry, Lincoln, Stevens, Okanogan and Douglas counties. This water could facilitate future residential development in the area worth $1.4 billion, increasing the property tax base by providing water for 23,500 homes. The remainder will be used to increase stream flows to protect fish and wildlife habitat and recreational uses.

In return for the water, PUD will receive a one-time payment of $14 million from the Columbia River Basin Water Development Account. The Washington Legislature established the account in 2006 to help pay for water storage and conservation infrastructure projects. The money will be used to help pay for work projects that will improve water quality in the lake, restore habitat and stream flows, enhance local recreation opportunities, and lower water temperatures to healthier levels.

Ecology became interested in the water storage potential at Sullivan Lake when it learned that PUD planned to surrender its license for the Sullivan Creek Hydroelectric Project. That led to discussions about how to manage Sullivan Lake in the future.

To match local water supply with local demands, Ecology is supporting legislation in the upcoming legislative session that would limit the water rights issued from this project to the northeastern part of the state. Under current law, water rights issued as a result of this project would be awarded to whoever is first in line anywhere downstream. Ecology's Office of Columbia River has other projects under development that are better suited to meet the southern demand for water. Ecology's proposed bill would limit the issuance of water rights using the Sullivan Lake water to applicants in six counties: Pend Oreille, Ferry, Lincoln, Stevens, Douglas, and Okanogan.
For info: Ecology's Office of Columbia River: www.ecy.wa.gov/programs/wr/cwp/crwmp.html

WASTEWATER & ENERGY US

EPA CONSERVATION INFORMATION

EPA has released a new technical document to assist municipal utility owners and operators in finding information on cost-effective energy management and energy conservation measures and technologies to reduce total energy usage at their wastewater treatment facilities. The document —"*Evaluation of Energy Conservation Measures for Wastewater Treatment Facilities*"— presents technical and cost information about energy management and energy conservation measures and technologies.

Technical and cost data were developed from literature sources and provided by manufacturers and operating facilities. The document provides preliminary information on innovative and emerging energy conservation measures and technologies that have the potential for substantial energy savings. In addition, the document includes nine in-depth facility studies that further examine application and cost information for various full-

WATER BRIEFS

scale, operational energy conservation measures and technologies.
For info: To view a copy of the document, visit: http://water.epa.gov/scitech/wastetech/publications.cfm

NUTRIENT ASSESSMENT US

STREAMS & GROUNDWATER
USGS STUDY RELEASED

The National Water Quality Assessment (NAWQA) program of the US Geologic Survey (USGS) recently released its "National Assessment on Nutrients in Streams and Groundwater" (Assessment).

Assessment findings describe nutrient occurrence, key sources of nutrients, potential effects on humans and aquatic life, and changes in concentrations since the early 1990s. Results show that excessive nutrient enrichment is a widespread cause of ecological degradation in streams and that nitrate contamination of groundwater used for drinking water, particularly in shallow domestic wells in agricultural areas, is a continuing human-health concern. Despite major Federal, State, and local efforts to control point and non-point sources and transport of nutrients, concentrations of nutrients have remained the same or increased in many streams and aquifers across the Nation since the early 1990s.

Findings touch on many environmental issues, including those related to: (1) developing nutrient criteria for surface water bodies; (2) reducing nutrient loadings to receiving waters; (3) setting realistic expectations for water-quality improvements following nutrient reduction strategies; and (4) managing elevated nutrients in drinking water from surface-water intakes and wells.

The results of the Assessment are described in two USGS publications: a USGS Fact Sheet (2010-3078) highlights selected national findings and their implications, and serves as a companion product to the complete analysis reported in the USGS Circular (1350) titled "*The Quality of Our Nation's Waters—Nutrients in the Nation's Streams and Groundwater, 1992–2004.*"

For info: Both publications mentioned above, the Assessment, and supporting documents can be downloaded from: http://water.usgs.gov/nawqa/nutrients/pubs/circ1350/

BULL TROUT HABITAT NW

REVISED DESIGNATION

In mid-October, the US Fish and Wildlife Service (USFWS) revised the 2005 critical habitat designation for bull trout, a threatened species found throughout much of the Pacific Northwest and protected under the federal Endangered Species Act (ESA). Approximately 18,975 miles of streams and 488,252 acres of lakes and reservoirs in Idaho, Oregon, Washington, Montana and Nevada are being designated as critical habitat for the wide-ranging fish. In Washington, 754 miles of marine shoreline are also being designated.

Under the ESA, "critical habitat" refers to geographic areas that contain features essential for the conservation of a listed species. Critical habitat designations provide extra regulatory protection that may require special management considerations; the habitats are then prioritized for recovery actions. The designation of critical habitat does not affect land ownership or establish a refuge, wilderness, reserve, preserve or other conservation area. It does not allow government or public access to non-federal lands. A critical habitat designation does not impose restrictions on non-federal lands unless federal funds, permits or activities are involved. However, designating critical habitat on federal or non-federal lands informs landowners and the public of the specific areas that are important to the recovery of the species.

Bull trout are primarily threatened by habitat degradation and fragmentation, blockage of migratory corridors, poor water quality, the effects of climate change and past fisheries management practices, including the introduction of non-native species such as brown, lake and brook trout.

When compared to the proposed rule issued in January of this year, the designation shows a net reduction of approximately 2,719 miles or 12.5 percent of the streams, 45,174 acres or 8.5 percent of lakes and 231 miles or 23.5 percent of marine shoreline habitat. USFWS officials say these changes reflect new biological information received during the comment period resulting in the addition of some habitats and the removal of others, and exclusion of specific areas under section 4(b)(2) of the ESA based on ongoing conservation measures, activities, agreements and other factors.

The final rule identifies 32 critical habitat units on 3,500 water body segments across the five states. These areas are clustered into six recovery units where recovery efforts will be focused. By state, the designation covers approximately: ID: 8,772 stream miles and 170,218 acres of lakes or reservoirs; OR: 2,836 stream miles and 30,256 acres of lakes or reservoirs; WA: 3,793 stream miles, 66,308 acres of lakes or reservoirs and 754 miles of marine shoreline; MT: 3,056 stream miles and 221,471 acres of lakes or reservoirs; and NV: 72 stream miles.

A final economic analysis identifies the potential incremental cost of the critical habitat designation at approximately $5 million to $7.6 million a year over the next 20 years.

In September 2005, the USFWS published a rule designating 3,828 miles of streams and 143,218 acres of lakes in Oregon, Washington, Idaho and Montana and 985 miles of shoreline in Washington as critical habitat for bull trout. That rule was challenged in the US District Court for the District of Oregon. In March 2009, USFWS requested a voluntary remand of the rule from the court to address irregularities in the rule-making process and outcome, as identified in a 2008 Investigative Report by the Department of the Interior Inspector General. The court granted the request and directed the agency to complete a proposed revision by Dec. 31, 2009, with a final designation to be delivered to the Federal Register by Sept. 30, 2010.

The final critical habitat rule was published in the Federal Register on October 18, 2010. The new designation takes effect on November 17, 2010.
For info: www.fws.gov/pacific/bulltrout/FinalCH2010.html#FinalCH

WATER BRIEFS

WETLANDS CONSERVATION CA

STATE WETLANDS REPORT

On October 18, the California Natural Resources Agency released the second State of the State's Wetlands Report. The Report summarizes the progress made by State agencies, public and private partnerships, and the federal government to protect, restore, and monitor California's diverse wetlands from 1999 through 2009. During this time, Californians invested billions of dollars to protect and restore wetlands. These investments led to substantial increases in protected acreage, primarily in San Francisco Bay, California's south coast, the Central Valley, and in the Sierras. The Report notes that the need for these actions is underscored by the fact that from the 1780's to the 1980's California lost approximately 91 percent of its wetlands.

The Report makes a number of recommendations on how the state and its partners can continue to make gains in wetlands and to provide state wetland managers with tools to better assess wetland quality and quantity.

RECOMMENDATIONS ADDRESS:

- wetlands data collection and management,
- agency coordination and public information,
- wetland partnerships and their importance, and
- the potential for wetland restoration projects to sequester carbon

Many of these recommendations require little or no additional state funding for implementation.

The Report can be downloaded from the California Wetlands Portal: www.californiawetlands.net.

For info: Brian Baird, California Natural Resources Agency, 916/ 657-0198 or brian@resources.ca.gov

FISH RESTORATION CA

SACRAMENTO-SAN JOAQUIN DELTA

The California Departments of Water Resources (CDWR) and Fish and Game (CDFG) will develop a "Fish Restoration Program" in the Sacramento-San Joaquin Delta and Suisun Marsh. The program goal will be to mitigate State Water Project (SWP) impacts on sensitive fish species in the Delta.

CDWR Director Mark Cowin and CDFG Director John McCamman signed the agreement on Oct. 18. The agreement is designed to enhance program coordination for improved Delta habitat and favorable conditions to benefit key native fish species, including the Delta smelt. An implementation schedule will be developed by CDWR and CDFG during the next 12 months. The program will create or restore fish habitat and include other activities with the intent to satisfy requirements in: the 2008 US Fish and Wildlife Service (USFWS) Biological Opinion for Delta Smelt; the 2009 National Marine Fisheries Service (NMFS) Biological Opinion for Salmonids; and CDFG's Longfin Smelt Incidental Take Permit for SWP operations.

Expected to cost an estimated $188 million over 10 years, funding will come from SWP Contractors, a group of 29 public water agencies with long-term contracts for purchase of SWP water.

PLAN COMPONENTS MAY INCLUDE:

- Creation or restoration of 8,000 acres of intertidal and associated subtidal habitat to benefit many fish species of concern
- Improvement of habitat and ecosystem support conditions for delta smelt
- Satisfying many of the restoration obligations of Biological Opinions for salmon
- Restoration of 800 acres of habitat for longfin smelt
- Satisfying restoration obligations of Biological Opinions for salmon including funding for Phase Two of the Battle Creek Restoration Project.

For info: Ted Thomas, CDWR Information, 916/ 653-9712; Carl Wilcox, CDFG Water Branch Chief, 916/ 445-1231; Kyle Orr, CDFG Communications, 916/ 322-8958

CWA ENFORCEMENT CO

GRAVEL MINING IMPACTS WETLANDS

EPA has issued a compliance order to Elam Construction and 4B Land & Livestock, LLC (owned by Scott and Sheila Brennise) for impacts to wetlands at a gravel mining site adjacent to the Yampa River near Craig, Colorado. Elam Construction's and 4B Land and Livestock's actions were conducted without a required federal Clean Water Act (CWA) permit from the US Army Corps of Engineers (Corps).

Mike Gaydosh, EPA's enforcement director in Denver, stated, "Those taking actions that impact surface waters and wetlands must secure appropriate permits to protect water resources and the functions they provide." EPA is requiring Elam Construction and 4B Land and Livestock to complete mitigation projects to compensate for unauthorized mining activities that affected wetlands along the Yampa River.

In October 2009, the Corps conducted an inspection at the gravel mining site and observed that multiple piles of excavated shale material, as well as a portion of a berm created to keep flood flows out of the gravel pit, had been placed within an area that contained delineated wetlands. The Corps determined the area of impacted wetlands as 0.78 acre.

A mining plan submitted to the Corps on behalf of the parties indicated the intent to mine gravel in the wetlands without the placement of any fill, thereby avoiding the need for a CWA permit. Subsequent communications from the Corps clearly stated that wetlands existed at the site and that the discharge of dredged or fill material during mining was likely. Elam Construction has had significant experience with the CWA and the Corps permitting program since 1980, including three prior permits and at least one known prior violation.

EPA's order requires Elam Construction and 4B Land & Livestock to develop and implement a mitigation plan that compensates for impacts to wetlands. While specific projects have not been determined, EPA may consider proposals to restore, create, enhance or preserve wetlands. Prior to undertaking the work, the respondents must submit the mitigation plan to EPA for approval.

The impacted wetlands adjacent to the Yampa River provided various functions and values including: aquatic and wildlife habitat; flood-flow attenuation; and aesthetics.

For info: Monica Heimdal, EPA, 303/ 312-6359

CALENDAR

November 15 CA
San Joaquin River Restoration Program Public Workshop, Sacramento. Cal/EPA Headqtrs. Bldg.,1001 "I" Street. Sponsored by State Water Board. For info: Katherine Mrowka, SWB, 916/ 341-5363, kmrowka@waterboards.ca.gov or www.waterboards.ca.gov

November 15-16 DC
Climate Change & Impact Assessment: 2010 IAIA Special Symposium, Washington. World Bank. For info: www.iaia.org/iaia-climate-symposium-dc/

November 15-17 Australia
Water Reuse & Desalination Conference, Syndey. Dockside Conf. Ctr. For info: www.watereuse.org

November 15-17 OR
2010 Oregon Watershed Enhancement Board (OWEB) Conference, Pendleton. Pendleton Convention Ctr. For info: www.healthywatersheds.org/conference

November 17 OR
Columbia River Toxics Reduction Action Plan Luncheon, Portland. Governor Hotel, 614 SW 11th Ave. For info: Sue Moir, NEBC, 503/ 227-6361, sue@nebc.org or www.nebc.org

November 17 WA
Water Rights: Investing in 21st Century Water Management Conference, Seattle. Seattle University. Presented by AWRA Washington Section. For info: http://earth.golder.com/waawra/ASP/2008Conference.asp

November 17 AZ
Findings from the Arizona Water Meter Brownbag, Tucson. Water Resources Research Ctr.. For info: Jane Cripps, 520/ 621-2526 or jcripps@cals.arizona.edu

November 17-19 NM
Developments in Clean Water Law Seminar, Santa Fe. Inn at Loretto. For info: National Assoc. of Clean Water Agencies, 202/ 833-2672 or www.nacwa.org/

November 18-19 ID
27th Annual Water Law & Resource Issues Seminar, Boise. Doubletree Riverside Hotel. Sponsored by Idaho Water Users Assn. For info: IWUA, 208/ 344-6690 or www.iwua.org

November 18-19 WA
Growth Management Act Seminar, Seattle. For info: Law Seminars Int'l, 800/ 854-8009, email: registrar@lawseminars.com, or website: www.lawseminars.com

November 18-19 MT
Hydropower in Montana Seminar, Missoula. Wingate by Wyndam. For info: The Seminar Group, 800/ 574-4852 or info@theseminargroup.net, or www.theseminargroup.net

November 18-19 CA
Energy & Water Seminar, San Francisco. For info: Law Seminars Int'l, 800/ 854-8009, email: registrar@lawseminars.com, or website: www.lawseminars.com

November 19 CA
Sustainable Planning, Environmental Site Design & Development Course, Sacramento. Sutter Square Galleria, 2901 K Street. For info: UC Davis Extension, 800/ 752-0881 or www.extension.ucdavis.edu/landuse

November 28-Dec. 1 CA
National Water Resources Assn Annual Conference, San Diego. Hotel del Coronado. For info: NWRA, 703/ 524-1544, email: nwra@nwra.org, website: www.nwra.org

November 30 OR
Water Conservation Workshop, Salem. USDA Salem Service Ctr. RSVP Requested. For info: Marion Soil & Water Conservation Dist., www.marionswcd.net/

November 30-Dec. 2 FL
Interstate Council on Water Policy's Annual Meeting, Tampa. Intercontinental Hotel. For info: Peter Evans, 703/ 243-7383, phe@riverswork.com or www.icwp.org/cms/

November 30-Dec. 3 CA
Assn of California Water Agencies Fall Conference & Exhibition, Indian Wells. Renaissance Esmeralda & Hyatt Grand Champions. For info: ACWA, 916/ 441-4545 or website: www.acwa.com

November 30-Dec. 3 OR
Oregon Water Resources Congress Annual Conference & Water Seminar, Hood River. Hood River Inn. For info: OWRC, 503/ 363-0121 or www.owrc.org

December 1 AZ
Perception, Misconceptions & Community Connections: What Does Effective Water Education Look Like Brownbag, Tucson. Water Resources Research Ctr.. For info: Jane Cripps, 520/ 621-2526 or jcripps@cals.arizona.edu

December 1 CA
Habitat Conservation Plan Implementation Course, Sacramento. Sutter Square Galleria, 2901 K Street. For info: UC Davis Extension, 800/ 752-0881 or www.extension.ucdavis.edu/landuse

December 1-2 CA
Modeling Human Health Risks: Practical Approaches to Estimating Risk & Developing Site Specific Cleanup Levels Conference, Oakland. Oakland Professional Development & Conference Center. For info: NWETC, 425/ 270-3274 or www.nwetc.org

December 2 WA
Solar Electric Installation: Getting on the Grid Seminar, Seattle. For info: The Seminar Group, 800/ 574-4852, email: info@theseminargroup.net, or website: www.theseminargroup.net

December 3 WA
Solar Power: Projects & Permitting Seminar, Seattle. For info: The Seminar Group, 800/ 574-4852, email: info@theseminargroup.net, or website: www.theseminargroup.net

December 3 CA
Sustainable Planning, Environmental Site Design & Development Course, Sacramento. Sutter Square Galleria, 2901 K Street. For info: UC Davis Extension, 800/ 752-0881 or www.extension.ucdavis.edu/landuse

December 5-7 TX
32nd Annual International Irrigation Show, San Antonio. For info: Irrigation Assn website: www.irrigation.org

December 5-8 AZ
5th National Decennial Irrigation Conference, Phoenix. Sponsored by American Society of Ag & Biological Engineers. For info: ASABE website: www.asabe.org/meetings/index.htm

December 6 OR
2010 Legislative Symposium: Meeting Oregon's Water Needs, Salem. Convention Ctr. Sponsored by Oregon Water Utilities Council. For info: Niki Iverson: nikii@ci.hillsboro.or.us

December 6-7 PA
Development Issues in the Major Shale Plays Institute, Pittsburgh. Westin Hotel. For info: Mark Holland, RMMLF, 303/ 321-8100 x106, mholland@rmmlf.org or www.rmmlf.org

December 6-7 OR
Northwest Environmental Conf. & Trade Show, Portland. Red Lion Hotel at Jantzen Beach. Presented by Associated Oregon Industries, Oregon DEQ, Northwest Environmental Business Council & Washington Ecology. For info: Sue Moir, NEBC, 503/ 227-6361, sue@nebc.org or www.nebc.org

December 6-8 France
International Conference on Transboundary Aquifers: Challenges & New Directions, Paris. Unesco HQ. For info: www.isarm.net/publications/325

December 6-9 AZ
ACES 2010: A Community of Ecosystem Services Conference, Phoenix. Gila River Indian Community. For info: www.conference.ifas.ufl.edu/aces/

December 7 CA
Instream Flow Assessment Workshop, Davis. UC Davis Guehler Alumni & Visitor Ctr. For info: http://johnmuir.ucdavis.edu/events

December 7 OR
Climate Solutions' 2nd Annual Oregon Dinner, Portland. Hilton Portland. For info: Teresa Myers, 360/ 352-1763 x30, teresa@ClimmateSolutions.org or http://climatesolutions.org/events

December 7-8 NV
Western Governors' Association Winter Meeting, Las Vegas. For info: WGA, www.westgov.org/

December 7-9 OR
Small & Community Wind Conference & Exhibition, Portland. Oregon Convention Ctr. Sponsored by American Wind Energy Assn. For info: www.smallandcommunitywindexpo.org/

December 7-10 NV
NGWA Ground Water Expo & Annual Meeting, Las Vegas. Las Vegas Conv. Ctr. For info: Cliff Treyens, NGWA, 800/ 551-7379, email: ctreyens@ngwa.org or website: www.ngwa.org

December 8 CA
Low Impact Design Approach to Stormwater Management Course, Davis. Da Vinci Bldg., 1632 Da Vinci Ct. For info: UC Davis Extension, 800/ 752-0881 or www.extension.ucdavis.edu/landuse

December 8 MA
Stormwater Regulation in New England Conference, Boston. For info: Law Seminars Int'l, 800/ 854-8009, email: registrar@lawseminars.com, or website: www.lawseminars.com

December 9-10 OR
Oregon Land Use Law Seminar, Portland. Benson Hotel. For info: The Seminar Group, 800/ 574-4852, email: info@theseminargroup.net, or website: www.theseminargroup.net

December 9-10 CO
Water Marketing Seminar, Beaver Creek. Ritz-Carlton. For info: CLE International, 800/ 873-7130 or website: www.cle.com

The Water Report
Water Rights, Water Quality & Water Solutions in the West
260 N. Polk Street • Eugene, OR 97402

CALENDAR

(continued from previous page)

December 14-16 OR
Northwest Power & Conservation Council Meeting, Portland. For info: www.nwcouncil.org/

December 15-17 NV
Colorado River Water Users Ass'n Conference, Las Vegas. Caesar's Palace. For info: www.crwua.org

December 16 CA
Sustainable Planning, Environmental Site Design & Development Course, Sacramento. Sutter Square Galleria, 2901 K Street. For info: UC Davis Extension, 800/ 752-0881 or www.extension.ucdavis.edu/landuse

January 9-13 AZ
2nd Int'l Congress on Sustainability Science & Engineering: Where Science & Engineered Technologies Meet the Needs of Society, Tucson. J.W. Marriott Starr Pass Resort. For info: http://icosse11.org/index.php?ID=1

January 10-11 DC
2nd Annual Choose Clean Water Conference: Chesapeake Bay Restoration, Washington. Park Hyatt Hotel. For info: www.choosecleanwater.org/cms/conference

January 12 WA
State Environmental Policy Act Seminar, Seattle. For info: Law Seminars Int'l, 800/ 854-8009, email: registrar@lawseminars.com, or website: www.lawseminars.com

January 12 HI
Financing, Developing & Permitting Renewable Energy Projects in Hawaii Seminar, Honolulu. Hilton Waikiki Prince Kuhio. For info: The Seminar Group, 800/ 574-4852, email: info@theseminargroup.net, or website: www.theseminargroup.net

January 13-14 HI
Hawai'i Land Use Law Seminar, Honolulu. For info: The Seminar Group, 800/ 574-4852, email: info@theseminargroup.net, or website: www.theseminargroup.net

January 20-21 FL
Natural Resource Damages in the Gulf, Miami. For info: Law Seminars Int'l, 800/ 854-8009, email: registrar@lawseminars.com, or website: www.lawseminars.com

January 20-21 CA
Green Building Seminar, Santa Monica. For info: The Seminar Group, 800/ 574-4852, email: info@theseminargroup.net, or website: www.theseminargroup.net

January 21 AK
Permitting Strategies in Alaska Seminar, Anchorage. For info: The Seminar Group, 800/ 574-4852, email: info@theseminargroup.net, or website: www.theseminargroup.net

January 23-27 WA
Second Conference on Weather, Climate & the New Energy Economy, Seattle. Sponsored by American Meteorological Society. For info: www.ametsoc.org/meet/annual/

January 24-26 TX
2011 Underground Injection Control Conference, Austin. Radisson Hotel. Sponsored by Ground Water Protection Council. For info: www.gwpc.org/meetings/uic/uic.htm

January 25-26 CA
Managed Aquifer Recharge Symposium, Irvine. Atrium Hotel at Orange Co. Airport. For info: www.nwri-usa.org/RechargeSymposium.htm

January 26 OR
Biomass as a Renewable Energy Source Seminar, Portland. For info: The Seminar Group, 800/ 574-4852, email: info@theseminargroup.net, or website: www.theseminargroup.net

January 27 MI
2011 Agriculture's Conference on the Environment, Lansing. Lansing Center. For info: www.maeap.org/maeap/events/ace

January 27-28 WA
Endangered Species Act Conference, Seattle. Grand Hyatt Seattle. For info: The Seminar Group, 800/ 574-4852, email: info@theseminargroup.net, or website: www.theseminargroup.net

January 27-28 DC
Environmental Impacts on Energy Development Conference, Washington. For info: Law Seminars Int'l, 800/ 854-8009, email: registrar@lawseminars.com, or website: www.lawseminars.com

February 1-3 WA
10th Annual Stream Restoration Design Symposium, Stevenson. Skamania Lodge. For info: www.rrnw.org/pageview.aspx?id=32242

February 1-4 FL
National Assoc. of Clean Water Agencies Winter Conference, Ft. Lauderdale. Hyatt Regency Pier 66. For info: National Assoc. of Clean Water Agencies, 202/ 833-2672 or www.nacwa.org