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HYDRAULIC FRACTURING & WATER

CONSIDERING THE WATER RESOURCES IMPACTS OF HYDRAULIC FRACTURING

by Adam Orford, Marten Law, PLLC (Portland, Oregon)

INTRODUCTION

Hydraulic fracturing (commonly called "fracking") is perhaps the single most controversial environmental issue of the day. The process involves breaking open otherwise impermeable oil and gas bearing geologic formations using a pressurized mixture of water, "proppant" (generally sand or ceramic beads), and chemicals. The mixture is injected down a wellbore, the proppant becomes lodged in the fractures, holding them open, and after a period of flowback recovery, gas and oil can be recovered. Recent technical breakthroughs in horizontal drilling, combined with improvements in traditional hydraulic fracturing techniques, have opened up vast areas of previously "unconventional" deep shale formations to economic development, resulting in a massive boom in oil and gas production across the country — and prompting major controversy.

Much of the argument thus far has focused on the risk of impacts to drinking water resources resulting from potential releases of chemical-laden hydraulic fracturing fluid through improper storage, spills, or well blowouts. Less attention has been paid to another important aspect of the process: hydraulic fracturing by definition requires water and in practice uses water in significant amounts. As the process becomes more mainstream and development expands into new regions, water resources, not water quality, is likely to become one of the key battlegrounds in the hydraulic fracturing debate.

This article seeks to put the controversy into context by surveying the ongoing efforts to assess the potential impacts of water withdrawals specifically associated with hydraulic fracturing, and then examining the growing and varied body of state-level responses to the issue. It ends with a survey of some of the considerations that a developer seeking to initiate a water-intensive drilling program would want to undertake. The message is clear: project proponents should be aware of potential objections based on water resources concerns, and should incorporate water resources issues into their development planning.

WATER USE & HYDRAULIC FRACTURING

PUTTING THE "HYDRAULIC" IN HYDRAULIC FRACTURING

It is common knowledge that hydraulic fracturing requires "a lot" of water. But many sources are less than precise regarding not only how much water is really required, but also what that means in the larger context of water use, and the implications of any increase in industrial use on local water resources as a whole. To understand the issues, it is useful to begin by examining exactly how much water the process requires and what that means.

Hydraulic Fracturing

Diversion Amounts

Purposes of Use

Changing Uses

Frac Use

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:
$299 per year
Multiple subscription rates available.

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

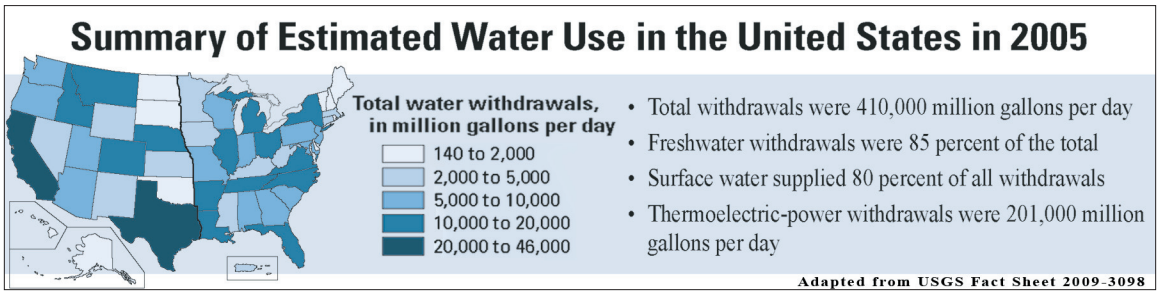
US Annual Water Use: 150 trillion gallons per year

The United States Geological Survey (USGS) maintains detailed estimates on the amount of water used in the United States every year (http://water.usgs.gov/watuse/). The most recent nationwide data is from 2005, with the 2010 data expected in 2014.

The numbers are impressive. In 2005, US surface and groundwater diversions and withdrawals totaled 410 billion gallons per day, or 150 trillion gallons per year. This number is so large that usual methods of comparison — say, 225 million Olympic-sized swimming pools — still do not give a good sense of its real magnitude. To put it in perspective, 150 trillion gallons is enough water to cover every square inch of the total land area of the United States (including Alaska) in 2.5 inches of water; and if a pipeline were built from the Earth to the Moon, it would need to be 142 feet wide to contain it all.

Eighty-five percent of this water is fresh, diverted or withdrawn from lakes, streams, rivers, and fresh groundwater sources. The rest is saline, from marine and briny groundwater sources. Eighty percent is surface water, with the remainder taken from the ground. Fully half of the water put to use in the United States each year is applied to cooling at thermoelectric power plants — large-volume withdrawals are cycled through cooling systems and returned to the source waterbody. Irrigation accounts for nearly another third. The public water supply — the water systems that provide most people with the water they depend on every day to drink, bathe, wash, and water their lawns — currently accounts for about twelve percent of the total, while industrial process use accounts for only four percent of total withdrawals. Aquaculture, mining, domestic withdrawals, and livestock watering make up the difference.

These figures change over time — thermoelectric withdrawals are decreasing, for example, while public water supply use is declining in some places and increasing elsewhere, depending on population growth and efficiency factors — but in a broad sense the numbers begin to paint a picture by which it is possible to discern the genesis of many types of water conflicts. With respect to hydraulic fracturing, the conflict arises where industrial use increases, to the potential detriment of irrigation and public water supply users. The question is: how big is the potential problem?



Fitting in Hydraulic Fracturing: 3 million gallons per frac

Industrial water use — water withdrawn from sources other than the public supplies and put to industrial use — accounts for only four percent of total US withdrawals, and of that only a small fraction is water associated with hydraulic fracturing. Using figures that, while general, have largely remained relevant today, in early 2011 the US Environmental Protection Agency (EPA) estimated that approximately 35,000 wells will be fractured or refractured each year in the United States. *See* EPA, *Draft Plan to Study the Potential Impacts of Hydraulic Fracturing on Drinking Water Resources* (*Draft Study Plan*), p. 19 (Feb. 2011). Each fracturing job requires on average about three million gallons of water, with variations depending on local geology and other factors. For example, EPA estimated that wells fractured in the Barnett Shale in Texas require about 2.3 million gallons on average, while wells in the Marcellus shale in the mid-Atlantic require 3.8 million gallons on average. Wells elsewhere might require as little as 0.5 million, or as much as 5 million gallons of water to successfully fracture. Thus, it will require something like 105 billion gallons of water per year to conduct hydraulic fracturing operations across the country. This is less than 0.1 percent (one one-thousandth) of total US water withdrawals, or 1.75 percent of industrial water use.

These numbers have been cited as suggesting the low-scale impact potential for increasing water withdrawals for hydraulic fracturing. However, these numbers do not tell the whole story. In fact, withdrawal impacts tend to be localized and concentrated where drilling is occurring. Thus, for example, oil and gas development now accounts for close to two percent of total freshwater demand in the Barnett Shale region. *Draft Study Plan*, p. 19. Drilling booms are occurring in some of the most arid regions of the country, including North Dakota, Colorado, and California. Ultimately, 600 newly fractured wells impose the same water demand as a city of approximately 50,000 people. *Id.* In areas where water is scarce — particularly where the oil and gas industry are new neighbors — opponents of hydraulic fracturing are pointing to the processes' water impacts as one potential reason to delay approval, to conduct further study, or even to ban the practice entirely.

Hydraulic Fracturing

EPA Study

Study Areas

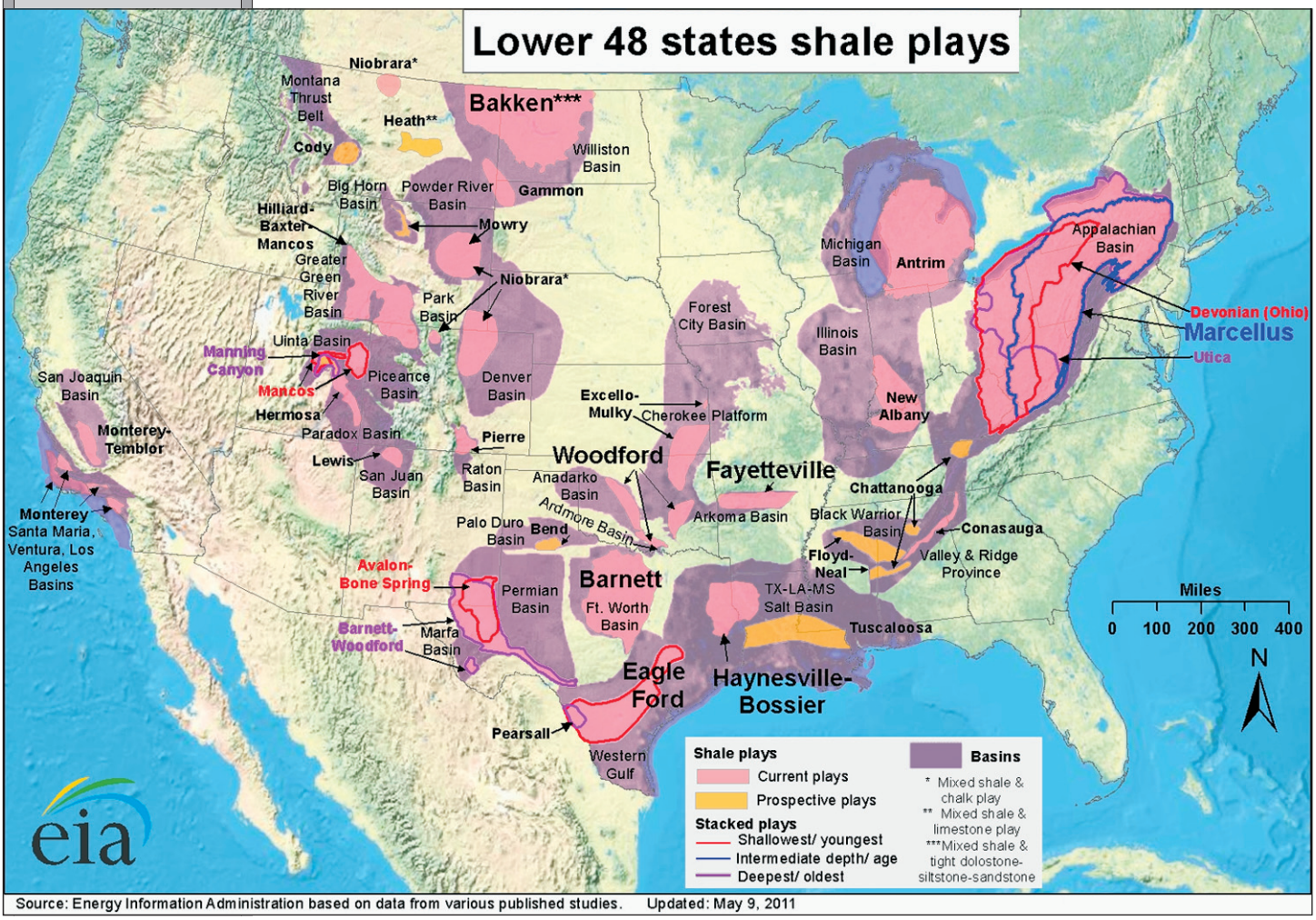
Model for Future Scenarios

EPA's Hydraulic Fracturing Study: "Essentially, all models are wrong, but some are useful."

One hallmark of the nascent hydraulic fracturing water arguments is the poverty of useful data underlying the debate. The impacts of large-scale water withdrawals associated with hydraulic fracturing are potential; but is there any hard data regarding the question one way or another? EPA has set out to answer this question as part of its ongoing, multi-year study into the relationship between hydraulic fracturing and drinking water. *See* http://www2.epa.gov/hydraulicfracturing. EPA's study is actually a collection of about 18 separate studies, and, as relevant here, includes a water acquisition component through which EPA proposes to evaluate the potential impacts of hydraulic fracturing water withdrawals on water resources specifically.

In February 2012, EPA published a document laying out EPA's study plan in detail. *See* EPA, *Modeling the Impact of Hydraulic Fracturing Based on Water Acquisition Scenarios*, available at http://www.epa.gov/hfstudy/qapps.html. The document explains that EPA's plan is to gather and analyze existing data on water use and hydrology at two selected study areas. EPA will examine the potential impact of water withdrawals for hydraulic fracturing using a series of models. The selected study areas are Garfield County, Colorado and the Susquehanna River Basin in the Marcellus Shale Region, chosen as representative of arid western and wet eastern environments, respectively. In both areas, hydraulic fracturing activities are already underway.

After gathering a range of pertinent information regarding water resources from the study areas, EPA proposes to build a model to evaluate the potential impact of hydraulic fracturing operations under three limited future scenarios, which it calls "Business as Usual," "Energy Max," and "Green Technology." These scenarios will differ as to: the intensity of well development in the area; assumptions regarding future water demand and withdrawal limitations; and industry water needs. "Energy Max" assumes intensive and unrestrained development combined with very high population growth — increasing the risks of resource conflicts. "Green Technology" takes the other extreme, assuming more confined and regulated development requiring less water, and lower population growth. The "Business as Usual" scenario splits the difference.



Source: Energy Information Administration based on data from various published studies. Updated: May 9, 2011

Hydraulic Fracturing

Water Availability

Vulnerability Evaluation

Water Use Disclosure

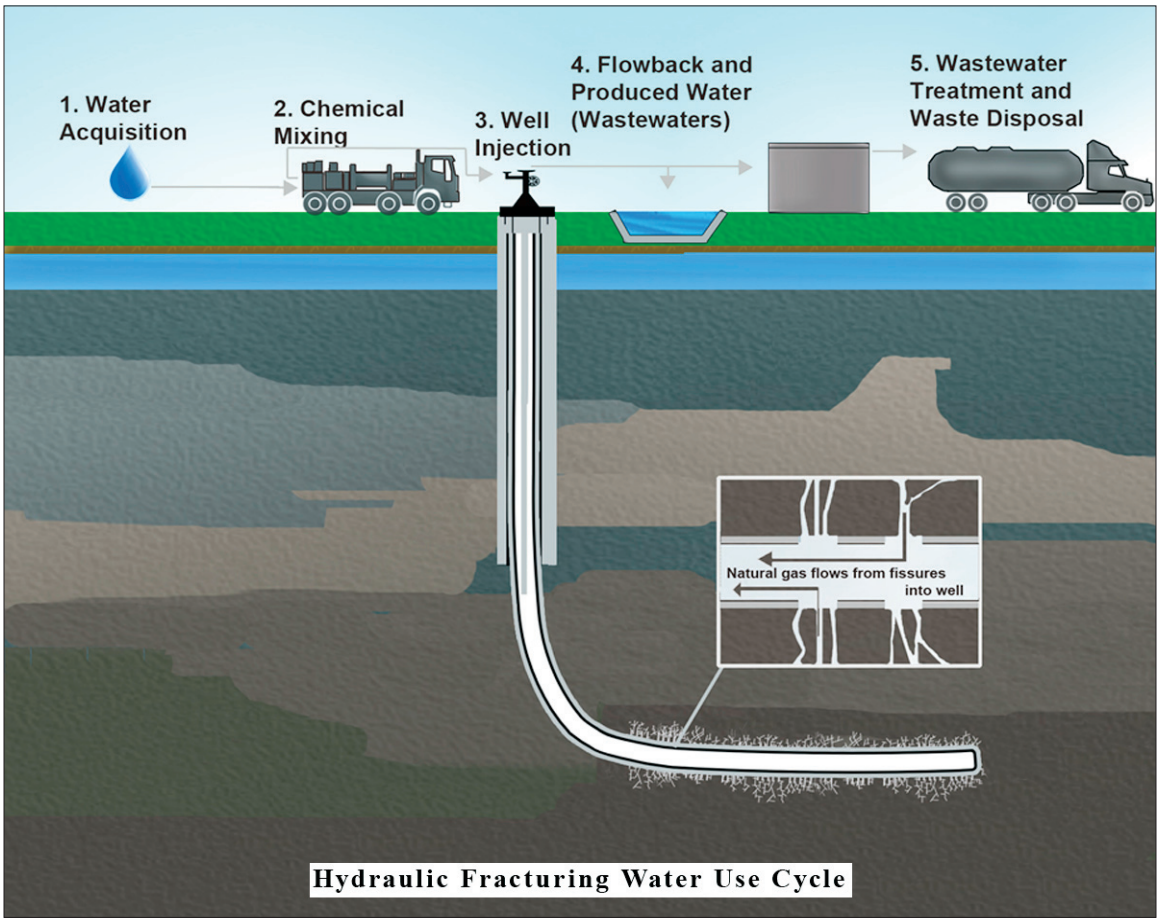
Will this work produce any useful results? Noted statistician George E.P. Box famously wrote that "essentially, all models are wrong, but some are useful." Box & Draper, *Empirical Model-Building and Response Surfaces*, p. 424 (Wiley 1987). No doubt, the assumptions and limitations of EPA's withdrawal modeling effort will render its results "wrong" in any number of ways — what is true in Garfield County, Colorado may not be true in Kern County, California, and the three "scenarios" seem very unlikely to precisely capture the reality in any given place at any given time. It remains to be seen, however, whether the results will nonetheless be "useful." To evaluate this, it is helpful to consider EPA's stated goals. EPA intends to "identify possible impacts on water availability and quantity associated with large volume water withdrawals for hydraulic fracturing" and "determine the cumulative effects of large volume water withdrawals within a watershed and aquifer." However, there is not much mystery as to how and to what extent large quantity water withdrawals may impact an area's water resources and competing uses. Further, it is not clear how well EPA's study in two areas can be usefully applied to the many other areas where hydraulic fracturing will occur.

On the other hand, EPA also intends to "develop metrics that can be used to evaluate the vulnerability of water resources" and "provide an assessment of current water resource management practices related to hydraulic fracturing." This last goal, especially, may have some real effect in the future, as industry, competing users, and regulators consider whether and to what extent to limit the use of water for hydraulic fracturing, or impose technological or management requirements on industry water use. Time will tell whether EPA's conclusions regarding best management practices — due in 2014 — will gradually influence future permit requirements, environmental reviews, and proposals for new regulation.

ACTIONS & REACTIONS

STATE LEGISLATION AND FIGHTS AHEAD

In the meantime, states and local governments are not waiting for EPA to complete its study. Water law is state law, and water withdrawals for hydraulic fracturing are happening now. States, therefore, are approaching the problem at the regulatory and legislative level. There appears to be a general movement toward requiring disclosure of: the source of water used for hydraulic fracturing; the amount withdrawn; the amount used in each fracture; and any amount of flowback recovered after the frac. Beyond that, each state faces its own unique problems, and is developing its own unique solutions.



Hydraulic Fracturing Water Use Cycle

Hydraulic Fracturing

Permit Requirement

Approval Factors

New York: Putting on the Brakes

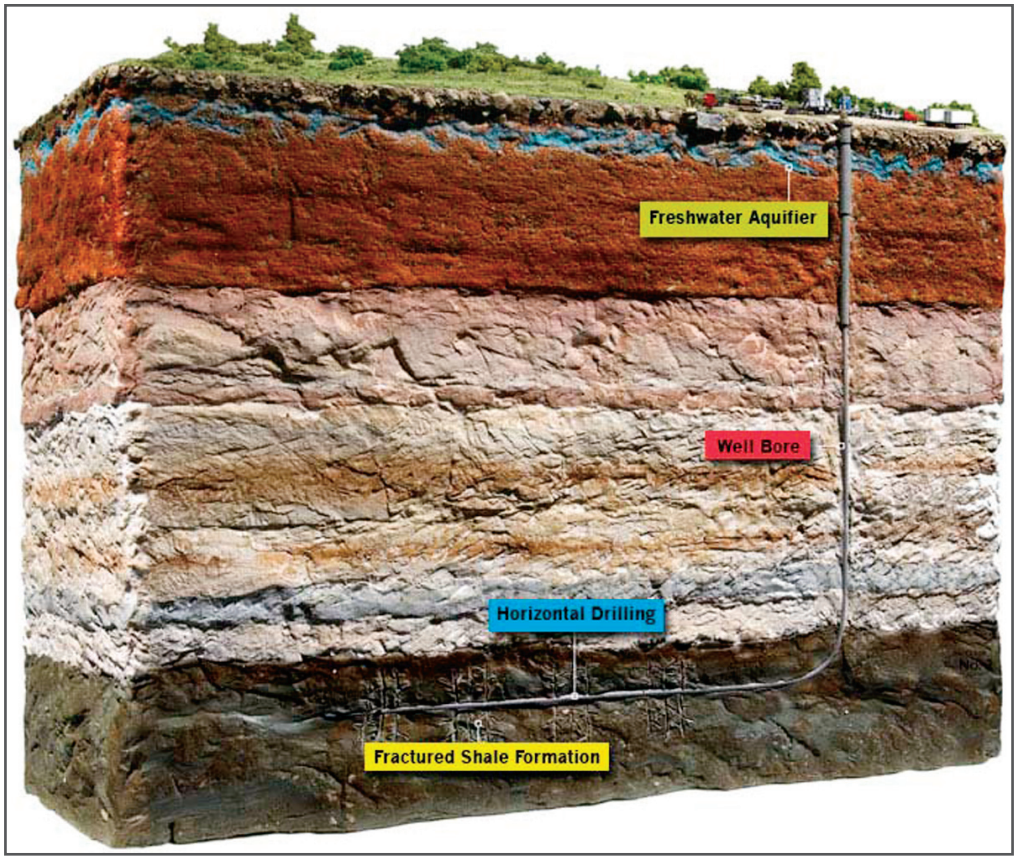
New York has been at the epicenter of the hydraulic fracturing debate. The potential to recover large quantities of natural gas from unconventional deep shale formations using hydraulic fracturing and horizontal drilling was first recognized in New York, where the Marcellus Shale underlies much of the upper part of the state. The New York State Department of Environmental Conservation (NYSDEC) has been tied up for years in an attempt to conduct a programmatic Environmental Impact Statement on the expanded drilling program, and natural gas development using hydraulic fracturing has been in limbo pending the completion of that study.

In preparation for the eventuality of drilling, however, the state legislature has taken a number of other steps, including the enactment of a law related to high volume water withdrawals that could have a significant impact on large-scale hydraulic fracturing operations. New York's state water law follows riparian rights doctrines common on the East Coast, and therefore water withdrawal permits have not been a particularly common part of the regulatory landscape there. However, the new law, as now implemented through NYSDEC regulations (*see* www.dec.ny.gov/regulations/78258.html), requires industrial withdrawals over 100,000 gallons per day to secure an NYSDEC permit, supported by a permit application requiring a detailed engineer's report and water conservation plan. Furthermore, the permit approval is discretionary. [Editor's Note: Under the Prior Appropriation Doctrine in the West, the guiding principle is "first in time, first in right" and senior water users are entitled to all of their water rights to the exclusion of junior users in times of shortage. The "riparian doctrine" utilized in the eastern US, on the other hand, allocates surface water use amongst landowners who are adjacent to a stream or river, with the resource shared proportionally during shortages.]

In considering whether to issue the permit NYSDEC must consider a host of potentially complex and controversial factors, including:

- Whether a better alternative water source exists; whether the water supply proposed is adequate, accounting for future drinking water demand projections
- Whether the water is strictly necessary for the proposed use
- Whether withdrawal will be "implemented in a manner to ensure it will result in no significant individual or cumulative adverse impacts on the quantity or quality of the water source and water dependent natural resources, including aquatic life"
- Whether withdrawal "will be implemented in a manner that incorporates environmentally sound and economically feasible water conservation measures"

Thus, even if New York does eventually permit large-scale shale gas development, getting water for the process may prove extremely difficult.



Hydraulic Fracturing

Surface Water Use

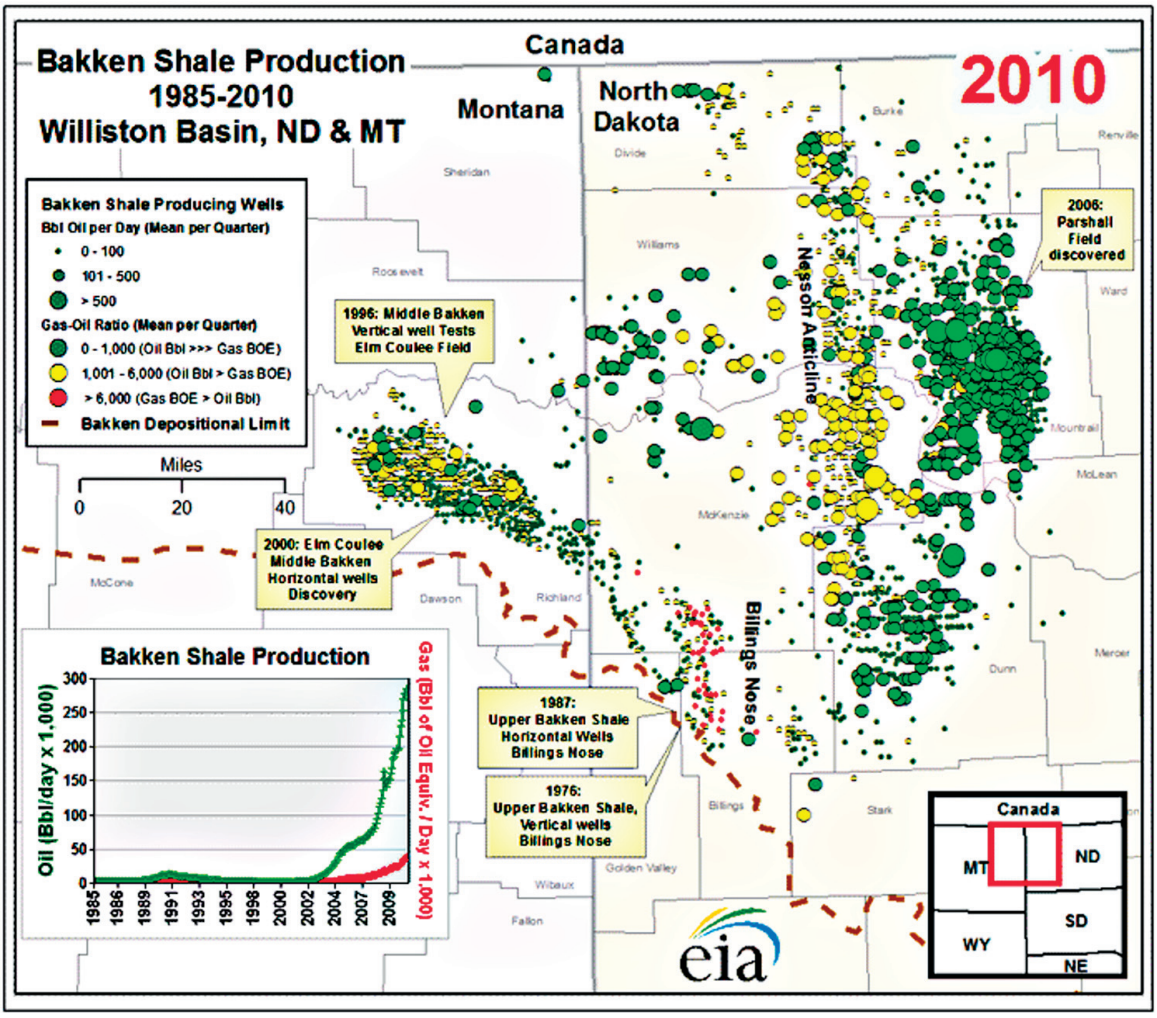
North Dakota: Stepping on the Gas

North Dakota lies on the other end of the spectrum. The state is currently undergoing an industrial revolution, almost entirely due to the development of the Bakken Shale, a tight oil formation underlying much of the state's northwestern area. North Dakota currently enjoys the lowest unemployment in the nation, and is projected to overtake Alaska as the nation's largest oil producer in ten years. All of this is driven by hydraulic fracturing — and all of that requires water.

In order to satiate the growing thirst for water in North Dakota, the state's traditional water supplies have been stretched to their limits. In an arid region, shallow aquifers already taxed by municipal and irrigation use are being pumped down and sold to oil developers. Increasingly, producers have been turning to surface water, specifically from Lake Sakakawea, the largest lake in the state (and third-largest in the country), situated conveniently near the oil fields. The lake is man-made, a federal US Army Corps of Engineers (Corps) impoundment of the Missouri River. Producers, the North Dakota state government, and to a large extent the Corps, all support the use of this water for hydraulic fracturing. The argument has principally been over cost. The Corps is considering a national policy regarding whether and how much to charge for such withdrawals, but in the meantime it is issuing "temporary" withdrawal permits, at no cost. Environmental and other interests allege that industry demand projections greatly understate the amount of water that will be withdrawn from the lake and elsewhere, and thus the environmental impacts that such withdrawals could entail — up to and including the impairment of navigability of the Missouri River in low water years.

Map Source: US Energy Information Administration.

Dot Size represents the well's production volume: either gas measured in **b**arrels of **oi**l **e**quivalent (BOE) or oil measured in barrels.



Hydraulic Fracturing

Colorado Scarcity

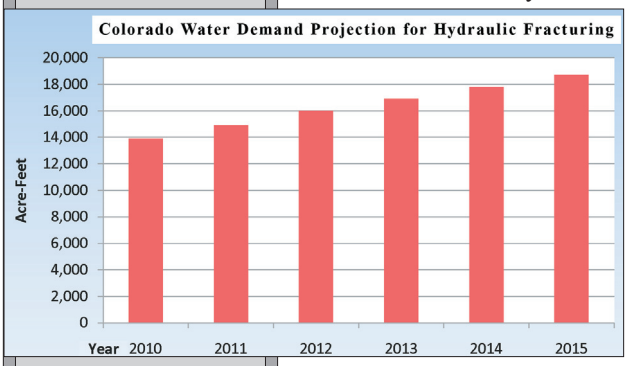
Colorado: Western Water Law at Work

New York and North Dakota demonstrate extreme ends of the potential balance between economic development and resource protection. Other states fall somewhere in between. Colorado, for example, demonstrates the regulatory hurdles that industry faces as it seeks new water in the West. The state also provides an important case study in the rising role of water economics in the hydraulic fracturing debate.

Colorado administers water appropriations under Western Water Law's prior water rights regime, known as the Prior Appropriation Doctrine. Under the doctrine of "first in time, first in right" most of the state's available water resources already have been previously appropriated for uses other than oil and gas development. The state has also recently undergone severe drought. Producers in Colorado are seeking to expand hydraulic fracturing. Consequently, industry has had to adapt to the restrictions — and opportunities — of the prior appropriations system.

Potential Sources (Market)

Regarding the restrictions, a good overview is provided in a joint publication of the Colorado Division of Water Resources, Colorado Water Conservation Board, and the Colorado Oil and Gas Conservation Commission entitled *Water Sources and Demand for the Hydraulic Fracturing of Oil and Gas Wells in Colorado from 2010 through 2015* (available online at http://cogcc.state.co.us/Library/Oil_and_Gas_Water_Sources_Fact_Sheet.pdf). The first part of the publication makes a great deal of the fact that in 2010, hydraulic fracturing "reflected slightly less than one-tenth of one percent of the total water used" in the state (a familiar figure from the discussion above). The second half is devoted to discussing potential sources of water for hydraulic fracturing. Tellingly, the simplest method is discussed first: producers are informed that they may transport water in from another state. Failing that, they are informed that new diversions from surface sources are likely impossible, and that limited opportunities exist for new groundwater withdrawals. More viable suggested solutions are market-based: leasing or purchasing water from rights holders — including irrigators and municipal sources. The state is careful to note that such transactions must comply with place-of-use, type-of-use, and any other relevant restrictions on the original water right, unless the parties seek a change in right through formal channels. Finally, the document briefly discusses the potential for using water produced by an active oil or gas well (produced water), and encourages reuse and recycling.



Money Works

Notwithstanding the complexities, the prior appropriations system has provided the necessary flexibility to allow the Colorado oil and gas industry to get the water it needs. All it takes is enough money. Water rights holders with water to sell are finding that oil producers will pay a heavy premium for the water they need. Thus, for example, in the dry summer of 2012 the citizens of Greeley, Colorado watched as tanker trucks pulled up to local fire hydrants, filled from municipal supplies, and carried the water away to the oil fields. The water was paid for at a premium, providing much needed municipal income, but this experience and many like it have raised fundamental questions regarding the equitable distribution and cost of water. In nearly every case, oil and gas producers are able to outbid all other interests, particularly agricultural concerns, to convert water into energy.

California: The New Frontier

As the above examples demonstrate, states are giving a great amount of thought to the question of water withdrawal impacts of hydraulic fracturing. Up until now, an exception has been California. While oil development has played an important part of California's history — and hydraulic fracturing has been used there for decades — neither the public nor state regulators have previously paid much attention to the issue.

Early Stages

Then, two years ago, the US Energy Information Administration issued a report indicating that California's Monterey and Santos shales, underlying much of Kern County and the Central Valley, might contain four times as much oil as the North Dakota formation. Notwithstanding some real geologic differences and technical hurdles yet to be overcome, this oil may now be economically producible via hydraulic fracturing. Consequently, California has begun to come to terms with the fracking debate. The state is in the very early process of developing new regulations and has not yet seriously addressed water withdrawal issues.

It is too early to tell where California will fall on the spectrum. Like New York, it has strong and sophisticated environmental interests seeking to put development on hold. Like Colorado, it has a strong and sophisticated oil and gas industry. Like North Dakota, it has a massive amount of oil potentially ready to be tapped. And like everywhere, that development will require water. Given these facts, the battles over water for hydraulic fracturing in California may reach a whole new level.

Hydraulic Fracturing

Needs Analysis

Water Source

Preferences

Availability & Impacts

Evolving Regulations

Permitting Expansion

IMPLICATIONS FOR DEVELOPMENT PLANNING

Armed with the above information, those interested in acquiring water for hydraulic fracturing operations should be better prepared not only to develop a strategy for acquiring it, but also to defend against attempts to stop them from getting it. Useful information may be found in the American Petroleum Institute's API Guidance Document HF2, *Water Management Associated with Hydraulic Fracturing* (June 2010), but a broader understanding of water use and requirements suggests that the following types of inquiries should be considered:

Requirements analysis. How much water is the project going to need, and when? Any technical evaluation should account for buildout projections over time, and factor in seasonal considerations such as availability in winter versus summer. Be prepared for pushback: is the proposed use "reasonable" or "beneficial" (including relevant limitations on waste) under local water law? What are the best practices for water efficiency and will the project be following them?

Source identification. Where is the project going to get the water? Can it be transported in from out of state; can irrigation rights be purchased privately; are there nearby sources of treated or recycled water that meet the project's technical requirements? In such cases, what are the use and timing limitations on the existing rights, and do they suit the project's purposes? If planning to divert from a natural water source, are there any relevant legal restrictions, including whether the water source is open for appropriation and whether the water can be transported from the water source to the project site.

Competing uses. Who is the competition? Any new project may face competition for water with others, who may have the support of preferential state water policies behind them. It is important to identify and consider all other users of any potential water source, including those who would keep the water in place for conservation purposes. Regarding "preferences," see Clyde, *TWR* #83.

Potential impacts. As the discussion above demonstrates, water withdrawals may entail physical impacts, and data regarding such impacts may not be developed or readily available. It is wise to survey available information regarding the water resource, and to consider not only the current or average year, but also past and possible future low-water years, to consider whether increased water withdrawals from a source risk impacting competing users, and thereby engendering opposition and, potentially, challenge.

Regulatory requirements. Finally, of course, it is necessary to completely understand all prevailing regulatory requirements — which at this moment may be changing in the project area. What are the project's water permitting needs, if any? What survey, reporting, and monitoring responsibilities might there be?

CONCLUSION

There is no doubt that the boom in hydraulic fracturing is leading to increased industry demand for water resources. While the total impact of this increase might be debated, water use is local, and localized use will raise localized concerns over impacts to water resources. Data collection and studies are underway, including the water withdrawal component of EPA's national study, but it is not clear as yet how useful studies conducted in one area will be at answering questions in other places. In any event, water withdrawals are primarily governed by state law, and project proponents should be aware that states are developing or expanding permitting regimes in response to the now-familiar public concern over hydraulic fracturing.

Hydraulic fracturing developers and operators should build a good technical record to support their water demand projections, work to avoid and mitigate impacts to any water resources and competing users, and, above all, incorporate water considerations early into their planning processes.

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ESA & Water Permits: Texas Ruling

THE ARANSAS PROJECT V. SHAW

DOES TEXAS WATER LAW PROVIDE ENOUGH WATER FOR WHOOPING CRANES?

by Melinda E. Taylor
Director of the Center for Global Energy, International Arbitration and Environmental Law
(University of Texas School of Law, Austin)

INTRODUCTION

Standing up to five feet tall and having wingspans over seven feet, Whooping Cranes are, with the exception of California Condors, the largest birds in North America. The world's only wild population of Whooping Cranes nests in Wood Buffalo National Park in Alberta, Canada, and spends the winter on the Texas coast in and around Aransas National Wildlife Refuge. The Whooping Crane has been on the federal endangered species list since before the federal Endangered Species Act (ESA) was passed by Congress in 1973. It is often touted as an ESA "success story" — the bird's numbers have rebounded from a low of 15 individuals in the 1940s to more than 500 today. Cornell Lab of Ornithology, *All About Birds: Whooping Crane* at: www.allaboutbirds.org/guide/whooping_crane/id. (April 3, 2013). The Whooping Crane has been in the headlines in Texas recently because of a federal court's ruling that the Texas Commission on Environmental Quality (TCEQ), which administers the state's water permitting program, violated the ESA in 2009 by failing to take steps to protect the bird during a period of drought. The decision has potentially wide-ranging implications for water management in Texas and other states in the West. *See* Robb, *TWR* #85.

ESA Violation

On its face, *The Aransas Project v. Shaw,* 43 E.L.R. 20053, No. 2:10-cv-00075 (S.D. Tex., 3/11/2013)(*TAP*), might appear to be another clash of endangered species versus humans, a Texas version of the spotted owl debate of the 1990s, or the latest example of federal impingement on Texas's regulatory authority. Over the last several years, Texas has been involved in several high profile court cases challenging federal regulatory authority, including challenges to the Affordable Care Act and the US Environmental Protection Agency's greenhouse gas rules. Perhaps not surprisingly, the reality is more complicated. The *TAP* case deals with the question of whether a state agency is required to take affirmative steps to avoid "take" of an endangered species when a program it administers is causing harm to the species. In *TAP*, the court's answer to this question was a resounding "yes." In this article, I will summarize the applicable law and the court's opinion, describe the legal issues that will be central in the pending appeal of the decision to the US Court of Appeals for the Fifth Circuit, and sketch the contours of a plan by which the Texas water permitting program could avoid future violations of the ESA.

Avoiding "Take"

ENDANGERED SPECIES ACT

The ESA (16 U.S.C. §§ 1531 to 1544) was enacted to "provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved." ESA § 2(b); 16 U.S.C. § 1531(b). The ESA is elegant in its simplicity. Section 4 establishes a process by which the federal government must determine which plants and animals should be identified as "endangered" or "threatened" for purposes of the act's requirements. 16 U.S.C. § 1533(b). Once a species has been listed, it enjoys certain protections. For example, federal agencies are required to "carry out programs for the conservation of endangered …species." ESA § 7(a)(1); 16 U.S.C. § 1536(a)(1). In addition, federal agencies are required to consult with the US Fish and Wildlife Service (USFWS) to insure that any activity "authorized, funded, or carried out by such agency" is not likely to cause "jeopardy," or extinction, of the species. ESA § 7(a)(2); 16 U.S.C. § 1536(a)(2); (USFWS has jurisdiction over terrestrial species and freshwater fishes. The National Marine Fisheries Service has jurisdiction over marine resources located in the US exclusive economic zone (3-200 miles

Elegant Simplicity


Source: USDA

ESA & Water Permits: Texas Ruling

Take Prohibition

Consultation Required

State Agencies

"Rule of Capture"

"Take" Application to States

Lawsuit Issues

from the coastline)). During the course of consultation, if USFWS determines that the proposed federal action would harm a listed species, it is required to formulate "reasonable and prudent measures" that the federal agency can implement to minimize the harm. ESA § 7((b)(4)(C); 16 U.S.C. § 1536(b)(4)(C). If the proposed action would result in so much harm that it would put the species at risk of extinction, USFWS must provide "reasonable and prudent alternatives" to the proposed action, means by which the agency can avoid jeopardy. ESA § 7(b)(3)(A); 16 U.S.C. § 1536(b)(3)(A).

In addition to requiring federal agencies to conserve endangered species and consult with USFWS to avoid jeopardizing them, the ESA prohibits "any person" from "taking" a listed endangered species. ESA § 9(a)(1)(B); 16 U.S.C. § 1538(a)(1)(B). The take prohibition has been extended by USFWS to almost all listed threatened fish and wildlife species pursuant to regulation. The authority to regulate to conserve threatened species is found at 16 U.S.C. § 1533(d). "Take" is defined very broadly in the act as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." ESA § 3(19); 16 U.S.C. § 1532(19). USFWS regulations further define "harm" as "an act which actually kills or injures wildlife," including "significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering." 50 C.F.R. § 17.3 (2011). That regulatory definition was upheld by the United States Supreme Court in *Babbitt v. Sweet Home Chapter of Communities for a Great Oregon*, 515 U.S. 687 (1995). The requirement to consult with USFWS and prevent jeopardy to listed species is familiar to the water users in the West who obtain their water from federal projects operated by the US Bureau of Reclamation (Reclamation). Some of the federal plans developed by Reclamation and USFWS through the consultation process have been controversial, to say the least. Among the most contentious are the plans that are designed to protect the Rio Grande silvery minnow, the Delta smelt in the Sacramento-San Joaquin Delta, salmon in the Klamath Basin, and four endangered fish in the Colorado River basin. Irrigators, for example, have complained that the needs of endangered species have been given a higher priority than human needs in those processes. Environmentalists counter that, unless the habitat needs of rare aquatic species are taken into account in decisions about project operations, the growing human demands for water will overwhelm the supply necessary to support fish and wildlife, and the species will surely suffer.

State agencies are not subject to the ESA's section 7 consultation requirement, so there have been fewer high profile court clashes between water users and endangered species in states that have few or no federal projects. A notable exception, however, was a case in Texas in the early 1990s in which the ESA was invoked by environmentalists to protect several endangered species whose survival depended on springs that emerged from the Edwards Aquifer. *Sierra Club v. Babbitt,* No. Mo-91-CA-069 (W.D. Tex. 1991). The Sierra Club sued USFWS alleging that the agency had allowed take to occur by not enforcing the ESA against groundwater pumpers in the Edwards region. As a result of the lawsuit, the Texas Legislature passed the Edwards Aquifer Act in 1993 (S.B. 1477; 1993 Tex. General Laws 2355), which established a comprehensive scheme to regulate groundwater pumping from the Edwards Aquifer. The Edwards Aquifer Act was a departure from the state's approach to groundwater, which had previously been governed by the "rule of capture." The rule of capture gives landowners the right to pump an unlimited amount of groundwater from the aquifer under her land. There is no liability for injury caused to other landowners by pumping, other than subsidence, so long as the injury was not intentional. The Act established a cap on permitted groundwater withdrawals that was intended to insure the minimum spring flows necessary to protect endangered species. The cap included in the Edwards Aquifer Act was 450,000 acre feet/year (AF/yr). In 2007, the Legislature raised the cap to 572,000 AF/yr. In 2012, a group of stakeholders in the Edwards region formulated a habitat conservation plan and applied for an incidental take permit to authorize take of endangered species that may result from pumping. *See* http://eahcp.org/. *See also* Frownfelter, *TWR* #1.

Though TCEQ was not required to consult with USFWS, the agency is subject to the ESA's section 9 prohibition on "take" of an endangered species. In the ESA, the term "person" means "an individual, corporation, partnership, trust, association, or any other private entity; or any officer, employee, agent, department, or instrumentality of the Federal Government, *of any State*, municipality, or political subdivision of a State…or any other entity subject to the jurisdiction of the United States." ESA § 3(13); 16 U.S.C. § 1532(13);(emphasis added). The crux of the holding in the *TAP* case is that TCEQ caused a take, and thereby violated section 9 of the ESA, by declining to monitor domestic and livestock users of water (who are not required to obtain a permit from TCEQ) and failing "to exercise emergency powers available to protect the endangered whooping cranes." *TAP* at 122. The court was referring, among other things, to TCEQ's authority under the Texas Water Code to temporarily suspend or adjust water rights during periods of drought. TWC § 11.053(c). The extent to which a state agency, like TCEQ, can be held liable for harm to endangered species that is allegedly the result of its permit program is the central question in *TAP*.

ESA & Water Permits: Texas Ruling

Take Causation

"Vicarious Liability"

Agency Action (Registration)

Management Plan Approval

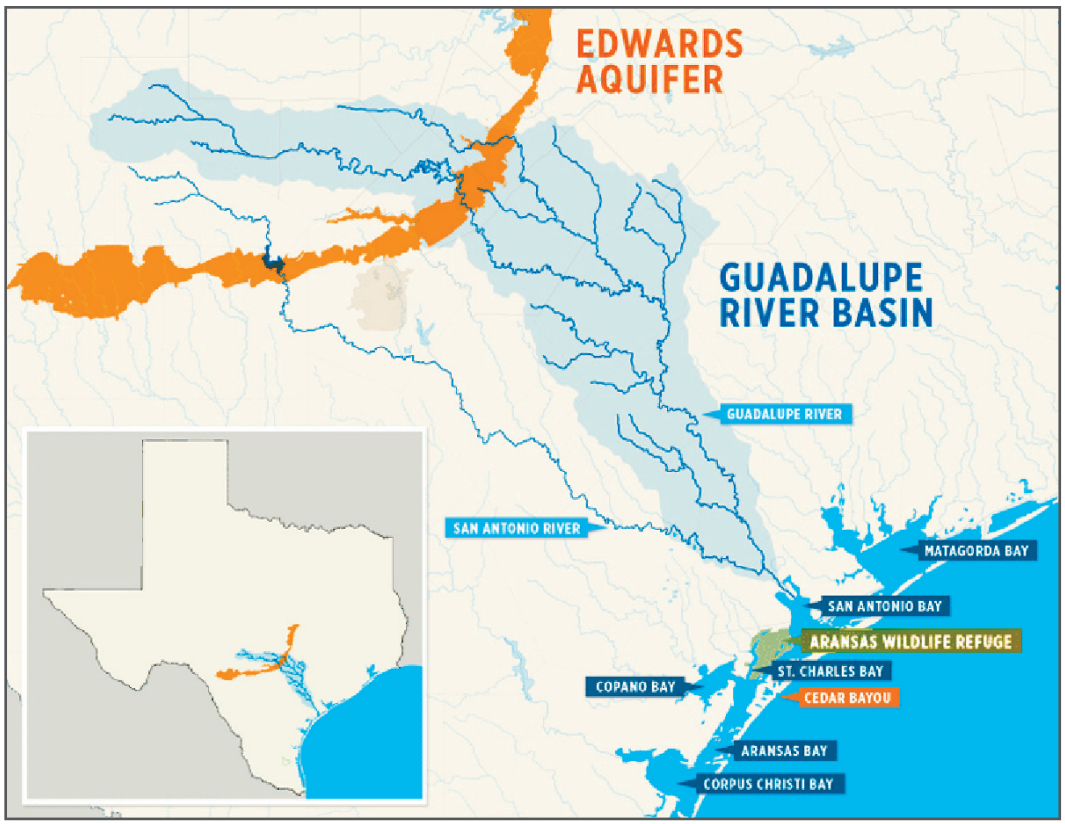
THE *TAP* OPINION

In her opinion, Judge Jack described in detail the evidence presented by the plaintiffs in the case to prove: (1) at least 23 Whooping Cranes died at Aransas National Wildlife Refuge during the 2008-2009 winter; (2) the birds' deaths were caused by "food stress;" (3) the birds' principal sources of food — blue crabs and wolf berries — were less abundant when subjected to high levels of salinity; (4) higher salinity levels in the refuge were associated with higher crane mortality; and (5) higher levels of salinity were caused by low freshwater flows into San Antonio Bay. *TAP* at 110. She held that TCEQ had caused the take of Whooping Cranes by not exercising its legal authority to amend or suspend water permits to maintain freshwater inflows into San Antonio Bay at the level necessary to sustain blue crabs and wolf berries. *Id. at* 111. I will return to the issue of TCEQ's legal authority below.

The Judge relied on a theory of "vicarious liability" to hold TCEQ liable in this case. Vicarious liability under the ESA is the principle by which a regulatory agency can be held liable for take when it merely authorized — as opposed to carried out — the activity that caused harm to a listed species. The idea of vicarious liability has been invoked when harm to an endangered species is the result of diffuse actions by numerous actors against whom it would be difficult, if not impossible, to enforce the ESA. The vicarious liability theory has been criticized by some ESA experts as being unsupported by the text of the statute. *See, e.g.,* J.B. Ruhl, *State and Local Government Vicarious Liability Under the ESA*, Natural Resources and Environment. ABA. Vol. 16, No. 2, Fall 2001.

Courts that have invoked vicarious liability in the ESA context generally cite two cases involving federal agencies to support the theory. *Defenders of Wildlife v. Environmental Protection Agency*, 882 F. 2d 1294 (8th Cir. 1989), was a case in which the United States Court of Appeals for the Eighth Circuit upheld a ruling that EPA's registration of pesticides that contained strychnine for rodent control had caused the take of endangered species on federal land. In the case, EPA had not applied the pesticide itself; numerous ranchers and farmers had used it. Nevertheless, the court held that by making the poison legally available, EPA could be held responsible for the take of black footed ferrets, which died after ingesting rodents contaminated with strychnine.

In *Sierra Club v. Yeutter*, 926 F. 2d 429 (5th Cir. 1991), the US Court of Appeals for the Fifth Circuit held that the US Forest Service's approval of a timber management plan for East Texas forests had resulted in take of the endangered red-cockaded woodpecker. As in the *Defenders* case, the Forest Service did not carry out the timber management practices that harmed the woodpecker; it was private timber companies that actually harvested the timber. The Forest Service was liable nonetheless because it had approved the management plan that was a prerequisite to timber harvesting in the national forest.



ESA & Water Permits: Texas Ruling

Regulatory Authorization

Permitting Program

TCEQ Authority

Federal Intervention Issue

Environmental Flows

Low Flows Caused Take

In the *TAP* opinion, Judge Jack cited *Sierra Club v. Yeutter* and several cases in which state agencies were held liable when their regulatory programs authorized actions by third parties that caused take. In *Strahan v. Coxe*, 127 F.3d 155 (1st Cir. 1997), for example, the Court of Appeals for the First Circuit upheld a lower court's finding that the licensing program of the State of Massachusetts for lobster pots and gill nets had contributed to the take of the endangered right whale. In *Loggerhead Turtles v. Volusia County*, the Eleventh Circuit held Volusia County, Florida, responsible for inadequately regulating artificial lighting, which was causing harm to the endangered turtles on the beaches. 148 F. 3d 1231 (11th Cir. 1998). The turtles were being harmed by lights on the beach that caused confusion to the female turtle after she came onshore to lay her eggs during nesting season. In *Animal Welfare Institute v. Martin*, a federal district court in Maine held the state wildlife agency liable under the ESA for the take of the Canada lynx, a threatened species, because the lynx was being unintentionally trapped by hunters who were after other fur-bearing animals during trapping season. No. 06-128-B-W (D.Me. Oct. 12, 2006). The parties in that case entered into a consent decree under which the state agreed to apply for an incidental take permit from USFWS. In *TAP*, Judge Jack concluded, based on the case law, that TCEQ could be held liable under the ESA because its permitting program had resulted in take of the Whooping Crane.

The defendants raised two principal legal arguments in the case. They argued: (1) that TCEQ lacked the legal authority to regulate water with the goal of protecting endangered species; and (2) that the court should abstain from adjudicating the case pursuant to the "Burford abstention" doctrine.

With respect to TCEQ's legal authority, the court found that TCEQ had extensive authority to manage the state's surface water in "a manner consistent with conservation and in compliance with federal law, and the TCEQ defendants have failed to do so." *TAP* at 32. She found that the Texas Legislature had conferred upon TCEQ plenary authority over surface water by setting up the water permitting structure contained in the Texas Water Code. She noted that the oath taken by TCEQ Commissioners when they take office requires them to comply with federal law. She cited the fact that TCEQ has the authority to modify or amend existing water rights, and delay or deny issuance of new permits, to support the holding that TCEQ had authority to regulate the water withdrawals. She also pointed out that the 2011 Legislature passed an emergency rule that gave TCEQ's executive director the authority to temporarily suspend and adjust water rights during periods of drought. Texas Water Code § 11.053. She noted that TCEQ had failed to exercise that authority during the 2008-09 drought, which "effectively choked the San Antonio Bay/Guadalupe estuary, creating hyper-saline conditions and adversely affecting the health of the [Whooping] cranes." *TAP at* 39.

Judge Jack was not convinced by the defendants' argument that the "Burfurd abstention" was warranted in the case. In *Burford v. Sun Oil Co*., 319 U.S. 315 (1943), the Supreme Court held that federal court abstention was proper in a case that involved an issue of state law that was better resolved through the state's regulatory scheme (abstain in deference to the state). The defendants argued in *TAP* that the State of Texas' regulatory scheme established under Senate Bill 3 in 2007 was the appropriate mechanism to determine environmental flows necessary in Texas rivers and that federal intervention would disrupt the state's S.B. 3 process. The defendants cited *Sierra Club v. City of San Antonio*, 112 F. 3d 789 (5th Cir. 1997), an ESA case in which the plaintiffs had sought an injunction to compel water officials to limit pumping from the Edwards Aquifer after the Edwards Aquifer Act had been enacted by the legislature. The Fifth Circuit ruled that the Edwards Aquifer Act constituted a comprehensive regulatory scheme and therefore the federal courts should stay out of the controversy (abstain), pursuant to *Burford*.

In the *TAP* opinion, Judge Jack distinguished the S.B. 3 flow process from the Edwards Aquifer Authority Act by noting that: (1) the S.B. 3 process set up a mechanism for determining the appropriate flows for the environment, but lacked a legal mechanism to actually protect the flows; (2) under Texas law, the definition of "beneficial use" excludes instream water to benefit bays and estuaries; (3) to the extent that environmental flows are protected in the context of water permits issued post-S.B. 3, they are limited to new (not existing permits); and (4) during times of "emergency," such as drought, environmental flows can be suspended altogether. The court concluded that the "mere existence" of the state environmental flows process did not override the federal court's jurisdiction in the case. *TAP* at 31. The S.B. 3 process was not an "elaborate regulatory scheme …that will address the concerns of the Whooping Cranes," and therefore did not justify the federal court's abstention. *Id.* at 42.

After reviewing the evidence presented by the parties, the court concluded that low flows into San Antonio Bay during the winter drought of 2008-09 had caused take of the Whooping Crane. Because the TCEQ had the regulatory authority to control the flows, the court found TCEQ, its chairman, and executive director liable under section 9 of the ESA. She found that Texas water regulations are preempted by federal law when they authorize diversions that result in take of the Whooping Crane. *Id.* at 122. The court enjoined TCEQ from approving or granting new water permits "affecting the Guadalupe or San Antonio Rivers" until the State "provides reasonable assurances to the Court that such permits will not take Whooping Cranes." *Id.* She directed TCEQ to seek an incidental take permit within 30 days of the order and retained jurisdiction over the action during the formulation of the habitat conservation plan that will accompany the permit. *Id.* So called "incidental take" — take that is incidental to, and not the purpose of,

ESA & Water Permits: Texas Ruling

"HCP"

Judgement Stayed

Appeal Issues

Fifth Circuit Leaning

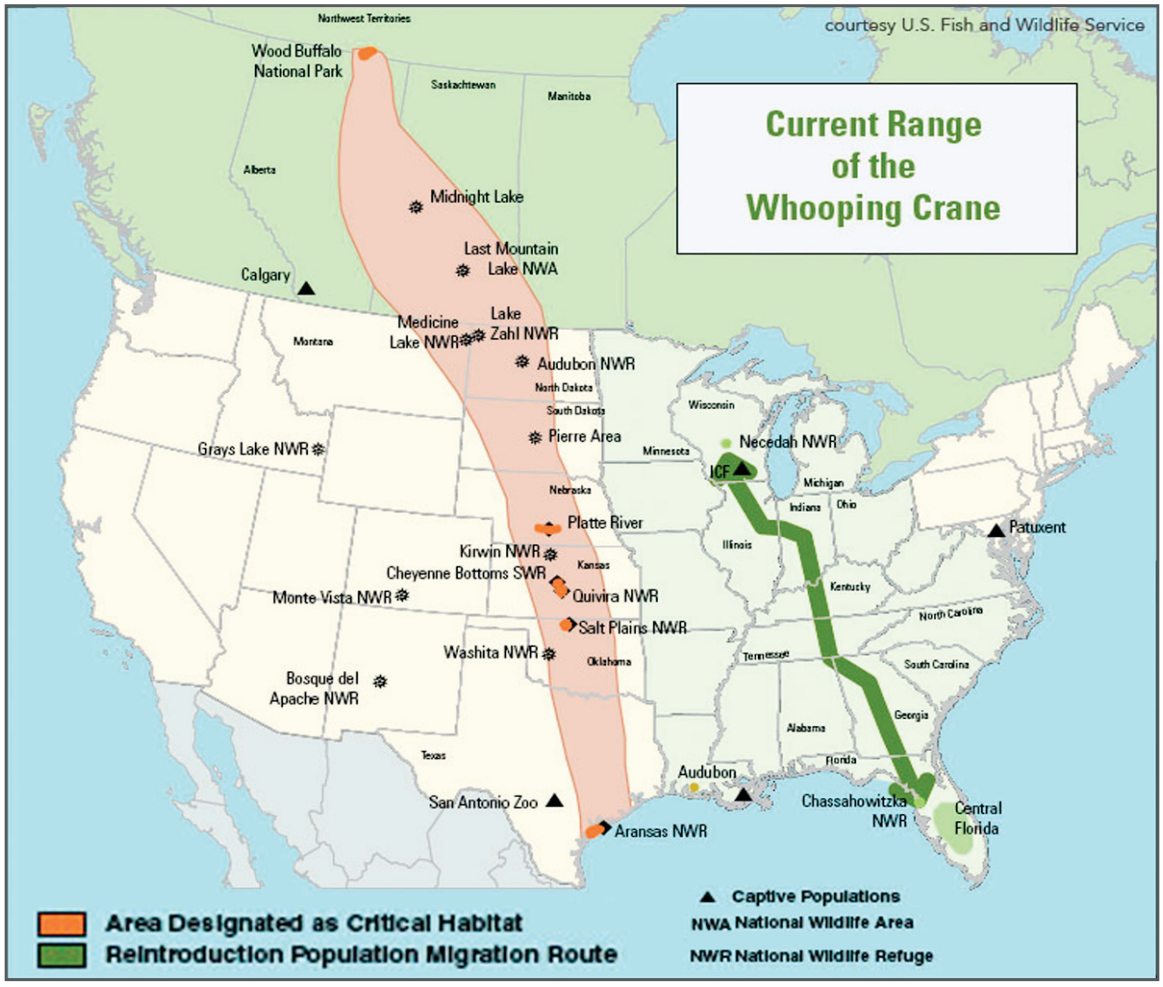
the carrying out of an otherwise lawful activity — may be authorized by USFWS pursuant to § 10(a)(1)(B) of the ESA. 16 U.S.C. § 1539(a)(1)(B). The permit applicant is required to submit a "habitat conservation plan," or "HCP" that specifies the impacts that will result from the taking, steps the applicant will take to minimize and mitigate the impacts "to the maximum extent practicable," alternative actions that the applicant considered, and other measures USFWS deems necessary. 16 U.S.C. § 1538(a)(2)(A). The court noted that other courts have ordered state agency defendants to seek an incidental take permit in similar circumstances. *Tap* at 119, citing *Strahan v. Coxe*, 127 F.3d at 158 and *Animal Prot. Inst. v. Holsten*, 541 F.Supp. 2d 1073, 1081-82 (D.C. Minn. 2008).

PENDING APPEAL IN THE 5TH CIRCUIT

Shortly after the judgment in *Tap* was released, the defendants filed an emergency appeal with the US Court of Appeals for the Fifth Circuit. On March 26, 2013 a three judge panel of the court granted the defendant-appellant's motion to stay the district court's judgment and ordered an expedited schedule for the appeal. Briefs will be filed in June and the oral argument in the case will take place in August 2013.

On appeal, it is likely that TCEQ and the other defendants will focus on the key legal arguments that were the core of their defense in the district court proceeding. TCEQ will contend that it lacks the legal authority to regulate water diversions for the protection of endangered species, because its water permitting regime is based on the doctrine of prior appropriation and the Texas Water Code contains no provision requiring that endangered species be protected. TCEQ will also argue that the state's S.B. 3 environmental flows process is the appropriate vehicle for protecting endangered species and other environmental values and that the existence of the S.B. 3 process should have precluded the federal court's involvement in the case, pursuant to the *Burford* abstention doctrine.

In a short concurrence issued by Judge Higginson with the Fifth Circuit's order granting the appeal, the judge wrote that his concurrence rested on the appellants' (TCEQ and other defendants) showing of likely success on the merits. He cited "the affirmative obligation the permanent injunction imposes to seek an Incidental Take Permit within 30 days," perhaps signaling that he is unconvinced that the district court's injunction was proper. He also cited *Seminole Tribe of Fla. v. Florida*, 517 U.S. 44 (1996), a case in which the US Supreme Court held that the Seminole Tribe could not sue the State of Florida in federal court to compel negotiations about a gambling facility, because the Eleventh Amendment of the Constitution



ESA & Water Permits: Texas Ruling

Eleventh Amendment

protected the state from a suit brought against it by citizens of the tribal nation. The Eleventh Amendment of the Constitution reads: "The Judicial power of the United States shall not be construed to extend to any suit in law or equity, commenced or prosecuted against one of the United States by Citizens of another State, or by Citizens or Subjects of any Foreign State." Courts interpreting the amendment have ruled that, unless Congress has "unequivocally expressed" its intent to abrogate immunity for the states, the provision bars citizen suits against the state in federal court. 517 U.S. 44, 73. In recent years, the federal courts have interpreted the Eleventh Amendment as conferring sovereign immunity on the states in the context of environmental litigation brought by citizen groups. *See, e.g., Bragg v. West Virginia Coal Association*, 248 F.3d 275 (4th Cir. 2001), *cert. denied*, 534 U.S. 1113 (2002), which held that a state could not be sued by a citizen group under the federal Surface Mining Control and Reclamation Act. *See also Rhode Island Department of Environmental Management v. United States,* 304 F.3d 31 (1st Cir. 2002), in which the court held that the State of Rhode Island was immune from a whistle-blower action brought by an employee for violations of the federal Solid Waste Disposal Act. To date, efforts to invoke the Eleventh Amendment as a defense to enforcement actions brought under the ESA have not been successful, but Judge Higginson's concurrence suggests that the argument may be received favorably in the Fifth Circuit.

ESA Collisions

LOOKING AHEAD: PROTECTING ENDANGERED SPECIES IN TEXAS' WATERS

Of course, it is not possible to predict with certainty how the Fifth Circuit will rule in the appeal of the *TAP* decision. Even if the court reverses the district court's decision, however, the tension between Texas' water permitting program and the protection of endangered species will almost certainly continue. Six aquatic invertebrate species in Texas have been proposed for listing as endangered under the ESA. 77 Fed. Reg. 49602 (Aug. 16, 2012). Over a dozen additional aquatic species may be listed by USFWS. With these new listings will certainly come new citizens suits designed to protect the water flows and water quality necessary to support the species. There are two possible approaches that the State of Texas could take to avoid future collisions with the ESA.

Possible Approaches

First, the State could work with USFWS to formulate one or more habitat conservation plans to protect the aquatic species and obtain an incidental take permit to authorize any harm to the species that occurs as a result of TCEQ's water permitting program. HCPs are intended to be flexible tools for non-federal actors, and, so long as the applicant meets the ESA's statutory requirements for HCPs, USFWS is required to issue the incidental take permit. With respect to the Whooping Crane, an HCP would likely include a commitment by TCEQ to ensure that certain minimum flows reach San Antonio Bay during future droughts. The HCP could also include other measures to reduce salinity levels when they get too high.

Second, to avoid the need for an HCP and federal incidental take permit, the Texas Legislature could reexamine the environmental flows process established by S.B. 3. Judge Jacks' opinion provides a comprehensive guide to S.B. 3's shortcomings with respect to protecting endangered species: it lacks an enforcement mechanism, applies only to future (not existing) water permits, and is limited in its geographic reach to 200 miles from the coast. Texas could protect its exclusive authority over its water resources by amending S.B. 3, thereby making the ESA's safety net unnecessary.

Editors' Note: Subsequent to the Fifth Circuit's stay, both TCEQ and the Texas Farm Bureau issued rebuttals to the *TAP* decision. *See* Water Brief, page 17, this ***TWR.***

Texas' Duty

CONCLUSION

The *TAP* case raises issues that are likely to be relevant for many states in the West. The question of the extent of Texas' duty to take affirmative actions to avoid harm to endangered species is of keen interest to state governments across the region that are grappling with the impacts of population growth, drought, and climate change on their water supplies. Finding the appropriate balance to meet the needs of humans and the environment will be one of the nation's toughest challenges in the coming decades.

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Complete Case available at: http://thearansasproject.org/wp-content/uploads/2013/03/TAP-Opinion.pdf

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CULVERT CASE DECIDED IN WASHINGTON

TRIBAL TREATY FISHING RIGHTS VICTORY

by David Moon, Editor

Treaty Fishing Rights

Fish Passage

Treaty Right to Taking Fish

Duty Imposed

Treaty-Based Duty

Barrier Culverts

Decision Scope

Injunctive Relief

Injury

On March 29th, US District Court Judge Ricardo Martinez ordered that the State of Washington must accelerate work to replace and repair approximately 1,000 fish run-blocking culverts within 17 years to help restore treaty-protected salmon runs. *U.S v. Washington*, C70-9213 (March 29, 2013). The decision is designed to ensure that Tribes that retained fishing rights under the 1855 Treaty of Point Elliot actually have fish to catch — as opposed to otherwise meaningless treaty rights.

The present case, which began in 2001, grew out of the landmark 1974 *Boldt* Decision (*U.S. v. Washington*, 384 F. Supp. 312 (W.D.Wash. 1974). Judge Martinez designated the present case as a subproceeding of the *Boldt* Decision "based on language in the 1855 Treaty of Point Elliot in which the Tribes were promised that '[t]he right of taking fish at all usual and accustomed grounds and stations, is further secured to said Indians, in common with all citizens of the Territory.' " *Memorandum and Decision* at 2. In 1855, "Governor Stevens assured the Tribes that even after they ceded huge quantities of land, they would still be able to feed themselves and their families forever." *Id.* at 2. "The Treaties were negotiated and signed by the parties on the understanding and expectation that the salmon runs were inexhaustible and that salmon would remain abundant forever." *Id*. at 32.

Concerning the merits of the Tribes' claims, Judge Martinez previously ruled in favor of the Tribes in 2007, declaring that "the 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. The Court further declares that the State of Washington currently owns and operates culverts that violate this duty." *Order on Cross-Motions for Summary Judgment*. Dkt. #392, p. 12. Judge Martinez then ordered the parties to negotiate a remedy, including a schedule for fixing the culverts that block salmon passage to their habitat. However, the State and the Tribes failed to reach such an agreement. In the absence of a negotiated remedy and citing increasing harm to pertinent fish runs since the 2007 decision, Judge Martinez issued the current decision.

Judge Martinez made clear that this latest decision is specifically based on a treaty-based duty to preserve fish runs. "The State's duty to maintain, repair or replace culverts which block passage of anadromous fish does not arise from a broad environmental servitude against which the Ninth Circuit Court of Appeals cautioned. Instead, it is a narrow and specific treaty-based duty that attaches when the State elects to block rather than bridge a salmon-bearing stream with a roadbed. The roadbed crossing must be fitted with a culvert that allows not only water to flow, but which insures the free passage of salmon of all ages and life stages both upstream and down." *Memorandum and Decision* at 35. In the decision's Findings of Fact, the Judge noted: "[A]s early as 1881, Washington residents recognized the need to preserve fish access to habitat and passed laws to prohibit the construction of human-made barriers." *Id*. at 9. The Judge also set down the known benefits that culvert repair provides for salmon: "Correction of fish-passage barrier culverts is a cost-effective and scientifically sound method of salmon-habitat restoration. It provides immediate benefit in terms of salmon production, as salmon rapidly recolonize the upstream area and returning adults spawn there." *Id*. at 27.

The scope of the decision was narrowly limited to "only those culverts that block fish passage under State-owned roads." *Id*. at 32. Nevertheless, speculation amongst water experts is that the decision could lead to similar orders concerning other activities and types of development that impact salmon passage and habitat.

The Judge was clearly frustrated by Washington's failure to take sufficient action even after his earlier rulings and went into great detail about the culverts that significantly block salmon habitat, the work that had been done, and costs to replace them. In the Conclusions of Law, Judge Martinez noted, "[A]n injunction is necessary to ensure that the State will act expeditiously in correcting the barrier culverts which violate the Treaty promises. The reduced effort by the State over the past three years, resulting in a net increase in the number of barrier culverts in the Case Area, demonstrates that injunctive relief is required at this time to remedy Treaty violations." *Id*. at 35.

The extent of injury that occurred to tribal rights is also noteworthy, as set out by Judge Martinez: "The Tribes have demonstrated, as set forth above in Findings of Fact 6-14, that they have suffered irreparable injury in that their Treaty-based right of taking fish has been impermissibly infringed. The construction

Treaty Fishing Rights

State Compelled

Public Interest

Contriving Jurisdiction

Fish Passage Requirement

and operation of culverts that hinder free passage of fish has reduced the quantity and quality of salmon habitat, prevented access to spawning grounds, reduced salmon production in streams in the Case Area, and diminished the number of salmon available for harvest by Treaty fishermen. The Tribes and their individual members have been harmed economically, socially, educationally, and culturally by the greatly reduced salmon harvests that have resulted from State-created or State-maintained fish passage barriers." *Id*. at 33-34.

The order grants a permanent injunction to compel State action within the next 17 years. The discussion regarding the fisheries-specific focus of this relief, as opposed to monetary damages, is enlightening. "This injury is ongoing, as efforts by the State to correct the barrier culverts have been insufficient. Despite past State action, a great many barrier culverts still exist, large stretches of potential salmon habitat remain empty of fish, and harvests are still diminished. Remedies at law are inadequate as monetary damages will not adequately compensate the Tribes and their individual members for these harms. Salmon harvests are important to Tribal members not only economically but in their traditions, culture, and religion; interests for which there is no adequate monetary relief." *Id*. at 34.

Addressing the huge costs involved in complying with his order, Judge Martinez pointed out that the benefits of fixing fish passage will accrue to the general public as well. "The public interest will not be disserved by an injunction. To the contrary, it is in the public's interest, as well as the Tribes' to accelerate the pace of barrier correction. All fishermen, not just Tribal fishermen, will benefit from the increased production of salmon. Commercial fishermen will benefit economically, but recreational fishermen will benefit as well. The general public will benefit from the enhancement of the resource and the increased economic return from fishing in the State of Washington. The general public will also benefit from the environmental benefits of salmon habit restoration." *Id*. at 35.

The Judge is continuing jurisdiction over the case in order to assure that the "Defendant comply with the terms of this injunction." *Permanent Injunction* at 5. The injunction order includes a provision that within six months the State "shall prepare a current list…of all culverts under state-owned roads within the Case Area…that are salmon barriers." *Id*. at 2. Any new culvert constructed by the State on salmon waters within the Case Area must also be done in compliance with the standards set out in the Injunction. *Id*. at 3.

The primary provision of the order addresses the requirement on the Washington State Department of Transportation (WSDOT) to provide fish passage: "Within 17 years of the date of this injunction, WSDOT shall provide fish passage in accordance with the standards set out in this injunction at each barrier culvert on the List owned or managed by WSDOT if the barrier culvert has 200 lineal meters or more of salmon habitat upstream to the first natural passage barrier." *Id*. The injunction also sets forth standards for the barriers, including the requirement that the "Defendants shall design and build fish passage at each barrier culvert on the List in order to pass all species of salmon at all life stages at all flows where the fish would naturally seek passage." *Id.* at 4.

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Decision available at: http://pugetsoundblogs.com/waterways/files/2013/04/Decision.pdf.

Injunction available at: http://pugetsoundblogs.com/waterways/files/2013/04/Injunction.pdf

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WATER BRIEFS

TEXAS ESA DECISION ON WHOOPING CRANE PROTECTION DRAWS REBUTTALS

TCEQ & TEXAS FARM BUREAU WEIGH IN

The Texas Commission on Environmental Quality (TCEQ) issued the following statement subsequent to the Fifth Circuit Court of Appeals Stay of the *TAP* decision (*see* Taylor, this *TWR*): "The State of Texas is appreciative of the Fifth Circuit's decision to stay the lower court ruling. As we said previously, this case is an attempt to rewrite the Texas Water Code. It is critical that the state retain the ability to regulate state surface water as provided under state law, and not the Endangered Species Act."

Meanwhile, Regan Beck, the Assistant General Counsel for Public Policy for the Texas Farm Bureau, wrote the following editorial concerning the decision:

"We know that Texas water is a precious resource. We've watched our pastures dry up and crops wither following the epic drought we've just endured (and continue to see, in many parts of the state). But one U.S. District Court judge wants to restrict our water even more.

U.S. District Court Judge Janis Graham Jack recently sided with an environmental group in its case against the Texas Commission on Environmental Quality (TCEQ), the San Antonio River Authority, the Guadalupe-Blanco River Authority and the Texas Chemical Council. The case accuses the agencies of water management practices that led to the deaths of 23 whooping cranes.

But before it could get too far, a higher federal court stepped in and granted an emergency stay in the case, preventing Judge Jack from shifting control of Texas water to the federal government. Thank goodness for some common sense. If left unchecked, Judge Jack's ruling could potentially allow the federal government to dictate what we can and can't do with our water.

Under the ruling, TCEQ could not approve new water permits. It would require the state agency to jump through hoops to comply with the Endangered Species Act. It also would impose monitoring of water use for domestic and livestock users.

And what about Texas water permit holders? They have vested legal property rights to water for activities like growing crops and fueling business activities. Federal regulation could put a stop to that, too.

Judge Jack believes that federal law preempts state law when regulation takes water away from the whooping cranes. States, not the federal government, regulate their own water. Her ruling — if allowed to stand — could cause a domino effect as other endangered species are listed, allowing all surface water in the state of Texas to come under federal rule.

We'll keep a watchful eye on the appeals process of this case. This ruling is one of the biggest threats to Texas right now. Access to and management of Texas water is our state's responsibility — and our right."

For Additional Information:
Terry Clawson, TCEQ, 512/ 239-0046;
Fifth Circuit Stay available at: www.tceq.texas.gov/assets/public/comm_exec/CA5-emergency-stay.pdf;
Texas Farm Bureau: www.texasfarmbureau.org

TRIBAL WATER SETTLEMENT NM

AAMODT WATER RIGHTS

On March 14, Secretary of the Interior Ken Salazar and Assistant Secretary for Indian Affairs Kevin K. Washburn joined New Mexico Governor Susanna Martinez and leaders from four Pueblo tribes — the Tesuque, Nambe, Pojoaque and San Ildefonso — at the Santa Fe Indian School to execute settlement documents and celebrate the historic *New Mexico vs. Aamodt* water rights settlement. Often described as one of the longest-running cases in the federal court system, the *Aamodt* case concerned water rights related to the Rio Pojoaque Basin north of Santa Fe, New Mexico, which is the homeland of the four tribes. The settlement provides finality to the Pueblos' water rights and certainty for non-Indian water rights in north central New Mexico.

The *Aamodt* settlement provides innovative mechanisms for managing water in the Pojoaque River basin to satisfy the Pueblos' current and future water needs while minimizing disruption to the non-Indian water users. In addition to the four tribes, this process has included the State of New Mexico, Santa Fe County, the City of Santa Fe, and numerous local water users.

Two additional water rights settlements were included in the 2009 Omnibus Public Land Management Act — the Northwestern New Mexico Rural Water Projects provisions settling the water rights claims of the Navajo Nation in the San Juan River system in New Mexico and the Shoshone-Paiute Tribes of Duck Valley Water Rights Settlement quantifying the tribe's water rights in Nevada.

For info: Jessica Kershaw, DOI, 202/ 208-6416

WATER BRIEFS

ERRATA **WY**

In *TWR* #109 we ran a Water Brief on North Platte Regulation and Priority Administration. The header for the article implied that it dealt with regulations in Nebraska. In fact, the article dealt with regulations in Wyoming. We apologize for our mistake and any inconvenience it may have caused.

FRACKING DISCLOSURE **WY**

TRADE SECRETS PROTECTED

On March 21, Natrona County District Judge Catherine Wilking upheld an order by the Wyoming Oil and Gas Conservation Commission (WOGCC) that denied disclosure of the list of ingredients that are used in hydraulic fracturing fluids. Environmental groups had requested that WOGCC disclose the makeup of fracking fluids to the public. The Judge held that WOGCC acted reasonably in withholding the information. *Powder River Resources Council, et al. v. Wyoming Oil and Gas Conservation Commission and Halliburton*, Civil Action No. 94650-C (March 21, 1013).

Wyoming was the first state, in 2010, to require companies to disclose to WOGCC the ingredients that they use for hydraulic fracturing. The oil and gas industry, however, was concerned about disclosing proprietary chemical compounds used in fracking. Consequently, WOGCC included language in the rules that require state regulators not to disclose certain information to the public if a company can prove it is proprietary. WOGCC's rule recognized that the specific formulas used by companies are very closely-guarded trade secrets and, as such, are exempt from Wyoming's open-records law. Commission Chapter 3, Section 45(f). See TWR #79, Water Briefs and the Commission's website regarding "Approved Trade Secrets." (Halliburton example at: http://wogcc.state.wy.us/tradesecrets/TS2010_2%20Halliburton.pdf).

Wyoming Governor Matt Mead issued a statement after the order affirming Wyoming's policy regarding the disclosure of hydraulic fracturing components, stating that he was "pleased that the Supervisor's actions were affirmed. Wyoming led the nation in requiring the disclosure of hydraulic fracturing components, these disclosure requirements were well done, and other states have followed Wyoming's lead in this area. This decision recognizes the importance of a state-based approach to regulating hydraulic fracturing — one that balances this important method for producing energy with environmental protection."

Judge Wilking's decision, though, was not a stamp of approval for non-disclosure since its rationale was based on the court's authority to rule on the issue at hand and "statutory interpretation" of the Wyoming law regarding disclosure of "Approved Trade Secrets." *Slip Op*. at 8. The Judge noted early in the decision that the only issue was, did the Commission Supervisor "act arbitrarily or capriously, or otherwise contrary to law when he found that individual ingredients of hydraulic fracturing formulas constituted trade secrets under the WOGCC public disclosure rule and the Wyoming Public Records Act… ." *Id*. at 2.

Under this ruling, trade secrets ("the substantial danger of competitive injury if the WOGCC were to disclose" - *Id*. at 15) basically trump environmental issues, yet the Judge also punted the issue to the Wyoming legislature. Wilding set out the divergent positions asserted by the parties — "the identity of hydraulic fracturing chemicals is key to understanding the potential environmental and health impacts" versus "the positive economic impact hydraulic fracturing has had on the State of Wyoming and the danger disclosure presents to that industry." The Judge then went on to note, "[B]oth positions have substantial merit, however the court feels these competing concerns are best addressed through legislative action, or further rule promulgation and are not properly within the court's purview." *Id*. at 17.

For info: Commission website: http://wogcc.state.wy.us/, then click on the Cowboy symbol next to "Notices, Memo's & Details", then click on the Cowboy symbol next to "Approved Trade Secrets"

ESA & 1872 MINING ACT **US**

SUCTION DREDGE MINING IMPACTS

On March 18, the US Supreme Court let stand a decision from the En Banc panel of 11 judges of the federal Ninth Circuit Court of Appeals that established that federal agencies must comply with section 7 consultation requirements of the Endangered Species Act (ESA) when activities requiring agency approval may affect a listed species or its critical habitat. *See TWR* #100, Water Briefs for additional detail regarding the 9th Circuit's decision. Recreational mining groups had filed a petition with the Supreme Court asking that they overturn the lower court decision, but the petition was denied.

The 9th Circuit ruling last June stemmed from a lawsuit filed by the Karuk Tribe in Northern California in 2004 alleging that the US Forest Service (USFS) had violated the federal Endangered Species Act (ESA) when the agency approved a slew of mining operations in ESA listed coho salmon habitat in and along the Klamath River in northern California without going through ESA section 7 consultations. USFS had approved various small mining operations using its "Notice of Intent" (NOI) process, which USFS argued exempted it from compliance with federal environmental and wildlife protection laws. The 9th Circuit, however, held "that the Forest Service violated the ESA by not consulting with the appropriate wildlife agencies before approving NOIs to conduct mining activities in coho salmon critical habitat within the Klamath National Forest." *Slip Op*. at 6072. *Karuk Tribe of California v. USFS, et al*., Case No. 05-16801 (June 1, 2012).

The Tribe filed the lawsuit to protect salmon, which are the cornerstone of the Tribe's culture and traditional diet. Beginning in the early 1990s, smaller-scale recreational mining operations, primarily suction dredging operators, began searching the Klamath River system for gold in and along the banks of these rivers and streams. The 9th Circuit detailed the scientific studies that found that suction dredging in critical species habitat "can directly kill and indirectly increase mortality of fish... ." *Id*. at 6105.

WATER BRIEFS

"This decision sets a major precedent across the western states," said Roger Flynn, lead attorney representing the Tribe, and Director of the Western Mining Action Project, a Colorado-based non-profit environmental law firm specializing in mining issues in the West. "The government and miners had argued that the archaic 1872 Mining Law, which is still on the books today, overrides environmental laws such as the Endangered Species Act. The Appeals Court flatly rejected that untenable position and today the Supreme Court refused to overturn that ruling," said Flynn.

For info: Roger Flynn, Western Mining Action Project, 303/ 823-5738; Craig Tucker, Karuk Tribe, 916/ 207-8294 or ctucker@karuk.us; 9th Circuit decision: cdn.ca9.uscourts.gov/datastore/opinions/2012/06/01/05-16801.pdf

BAY DELTA PLAN CA

DRAFTS OF CONSERVATION PLAN

Beginning March 14th, the California Natural Resources Agency began releasing the preliminary draft of the first four chapters of the Bay Delta Conservation Plan (BDCP). This highly-anticipated document is a major milestone in the seven-year BDCP process. The release is occuring in three stages, as follows: Stage 1: March 14 (Chapters 1 - 4); Stage 2: March 27 (Chapters 5-7); and Stage 3: Week of April 22 (Chapters 8 - 12).

For info: www.baydeltaconservationplan.org or www.socalwater.org/delta-disrupted

NEW RESTORATION MT

STREAM & WETLANDS

On April 1, Trout Unlimited and the Montana Department of Environmental Quality (DEQ) announced an innovative new program to help direct mitigation funds to high-quality stream and wetland restoration projects. When individuals, landowners, or businesses cause unavoidable damages to a river, stream or wetland in Montana, they have a new way to offset the loss — buying credits that can be used to repair other nearby streams or wetlands.

The sportsmen's group and state agency have teamed up to create a nonprofit organization called Montana Aquatic Resources Services, or MARS, that will administer an In Lieu Fee (ILF) mitigation program. Because national policy requires "no net loss" of wetlands, developers, industry, and private landowners must offset unavoidable impacts to wetlands caused by their activities. Before MARS was created they had only two options: restore the wetlands or purchase additional wetlands to put into "mitigation banks." MARS provides a new option of purchasing credits in the mitigation program. "Having an alternative, non-profit mitigation option will ensure that restoration dollars go to high-quality projects as near to the impacts as possible," said DEQ Director Tracy Stone-Manning. "MARS is able to work closely with local landowners and technical experts to get the best results."

MARS will also help industry and landowners in other restoration projects. For example, MARS is developing a conservation program for the Yellowstone River that will acquire floodplain conservation easements along the bank from willing landowners who choose to allow the river to function naturally; eroding and accessing the floodplain during high flows. This allows landowners who lose property to erosion to be compensated for their stewardship.

The MARS board consists of a cross-section of respected restoration stakeholders, from TU staff to private restoration consultants to state agency biologists. MARS underwent an arduous qualification process with the US Army Corps of Engineers to be eligible to accept mitigation responsibilities. MARS received approval on January 29, 2013.

For info: Patrick Byorth, TU, 406/ 548-4830 or pbyorth@tu.org; Lynda Saul, DEQ, 406/ 444-6652 or lsaul@mt.gov; MARS website at: http://montanaaquaticresources.org/MARS/Welcome_to_MARS.html

NATIONAL WATER CENSUS US

INTERIOR PROGRESS REPORT

Secretary of the Interior Ken Salazar released a report to Congress on April 3rd on the progress of the National Water Census, which is being developed at the US Geological Survey (USGS) to help the nation address its critical water needs. The report is entitled *Progress Toward Establishing a National Assessment of Water Availability and Use*. "This update to the National Water Census — the first since 1978 — will give the nation critical new information about the availability and use of America's freshwater resources," said Salazar. "Development of the new state-of-the-art National Water Census forms a vital component of the Department of the Interior's overall strategy to help ensure sustainable water resources for the United States. Similar to the need for the US population census to make informed societal decisions, resource managers need the water census to support wise policy and decision-making on water matters."

As competition for water grows — for irrigation of crops, for use by cities and communities, for energy production, and for the environment — the need for the National Water Census and related information and tools to aid water resource managers also grows. The Water Census will assist water and resource managers in understanding and quantifying water supply and demand, and will support more sustainable management of water resources. "It's true in other fields and no less so for water: you can't manage what you don't measure," said Anne Castle, Interior's Assistant Secretary for Water and Science. "The Water Census will quantify water supply and demand consistently across the entire country, fill in gaps in existing data, and make that information available to anyone who needs it — and that represents a huge step forward on the path toward water sustainability."

The report released today describes the "water budget" approach being taken to assess water availability for the nation. Water budgets account for the inputs to, outputs from, and changes in the amount of water in the various

components of the water cycle. They are the hydrologic equivalent of the deposits to, withdrawals from, and changes in the balance in a checking account and provide the hydrologic foundation for analysis of water availability.

USGS is initially focusing production of the Water Census on areas with significant competition for water availability and existing or emerging conflicts over water supply, such as the Delaware, Colorado, and Apalachicola-Chattahoochee-Flint River Basins. Increasing populations, more volatile stream flows, energy development and municipal demands, and the uncertain effects of a changing climate amplify the need for an improved understanding of water use and water availability in these crucial watersheds.

For info: Report at: http://pubs.usgs.gov/circular/1384

"TAKINGS" CLAIM DENIED CA

BENEFICIAL USE ISSUE

The Federal Circuit Court of Appeals (Court) in *Casitas Municipal Water District v. United States,* No. 2012-5033 (Feb. 27, 2013) affirmed the decision of the Court of Federal Claims dismissing Casitas Municipal Water District's (Casitas's) complaint without prejudice. Ruling for the federal government, the Court decided that the plaintiff district's takings claim was not ripe for appeal. "In conclusion, we hold that the Court of Federal Claims properly found that the diversion of water down the fish ladder to date has not impinged on Casitas's compensable property interest — the right to beneficial use. If and when Casitas has sufficient evidence to file a complaint alleging a compensable injury, Casitas's takings claims will have accrued." *Slip. Op*. at 34. The Court also concluded that "a diversion constituting a physical taking — i.e., one impinging on Casitas's right to beneficial use — has not yet occurred and may never occur. A takings claim based on an act that has yet to occur cannot be time-barred." *Id*.

Casitas operates the Ventura River Project (Project). The Project is owned by the US Bureau of Reclamation (Reclamation) and provides water to residential, industrial, and agricultural customers in Ventura County, California. Casitas brought suit in the US Court of Federal Claims in 2005, alleging that by imposing certain operating criteria on the Project (fish ladder), the US had taken its property without just compensation, in violation of the Fifth Amendment to the Constitution. On December 5, 2011, the Court of Federal Claims dismissed Casitas's complaint without prejudice, on the ground that Casitas's takings claim was not ripe because Casitas had failed to demonstrate that the operating criteria at that point had not caused it to deliver less water to its customers than it otherwise would have delivered. *Casitas Mun. Water Dist. v. United States*, 102 Fed. Cl. 443 (2011)(*Casitas V*).

The decision turned largely on the concept of "beneficial use" under California water law and whether or not "beneficial use" includes a right to store water for future use. Casitas argued that its water rights include a "safe yield" component — in order to ensure water deliveries to its users in times of drought, the district must actually divert and store more water than it needs for immediate beneficial use. The Court, however, agreed with the Court of Federal Claims holding *Casitas V* that "the only compensable right under California water law is a right to beneficial use" and that "[t]he holder of an appropriated water right, in other words, receives nothing more than this right to beneficial use and possesses no legal entitlement to water that is diverted but never beneficially used." The Court then went on to note the usufructary nature of water rights: "Under well-established California law, 'the right of property in water is usufructuary, and consists not so much of the fluid itself as the advantage of its use.'" *Id*. at 23.

The Court later directly ruled on the issue of storage of water and beneficial use. "We now turn to the question of whether the storage of water or diversion to storage of water, in and of themselves, constitute beneficial uses. We conclude that they do not. The Court of Federal Claims correctly determined that the state of California does not categorize storage or diversion for storage, in and of themselves, as beneficial uses." *Id*. at 27. Concerning this issue, the Court also referred to the fact that "under California law, the concept of beneficial use provides an "overriding constitutional limitation" on a party's water rights." *Id*. at 29.

Ultimately, the Court's decision kept coming back to the factual finding that "the only diversion relevant to the takings claim would be a diversion that impinges on Casitas's right to beneficial use. No such diversion has yet occurred." *Id*. at 33. For anyone interested in takings claims, a reading of the decision is advised as the Court's opinion goes into significant detail regarding other cases and the assertions of the plaintiffs in this case.

For info: Case available at: www.cafc.uscourts.gov/images/stories/opinions-orders/2012-5033.Opinion.2-22-2013.1.PDF

STREAM SURVEY US

EPA RELEASES SURVEY RESULTS

On March 26, EPA released the results of the first comprehensive survey looking at the health of thousands of stream and river miles across the country, finding that more than half — 55 percent — are in poor condition for aquatic life. The *2008-2009 National Rivers and Stream Assessment* reflects the most recent data available, and is part of EPA's expanded effort to monitor waterways in the US and gather scientific data on the condition of the Nation's water resources.

EPA partners, including states and tribes, collected data from approximately 2,000 sites across the country. EPA, state, and university scientists analyzed the data to determine the extent to which rivers and streams support aquatic life, how major stressors may be affecting them and how conditions are changing over time.

FINDINGS INCLUDE:

- Nitrogen and phosphorus are at excessive levels. Twenty-seven percent of the nation's rivers and

WATER BRIEFS

streams have excessive levels of nitrogen, and 40 percent have high levels of phosphorus. Too much nitrogen and phosphorus in the water — known as nutrient pollution — causes significant increases in algae, which harms water quality, food resources and habitats, and decreases the oxygen that fish and other aquatic life need to survive. Nutrient pollution has impacted many streams, rivers, lakes, bays and coastal waters for the past several decades, resulting in serious environmental and human health issues, and impacting the economy.

- Streams and rivers are at an increased risk due to decreased vegetation cover and increased human disturbance. These conditions can cause streams and rivers to be more vulnerable to flooding, erosion, and pollution. Vegetation along rivers and streams slows the flow of rainwater so it does not erode stream banks, removes pollutants carried by rainwater, and helps maintain water temperatures that support healthy streams for aquatic life. Approximately 24 percent of the rivers and streams monitored were rated poor due to the loss of healthy vegetative cover.
- Increased bacteria levels. High bacteria levels were found in nine percent of stream and river miles making those waters potentially unsafe for swimming and other recreation.
- Increased mercury levels. More than 13,000 miles of rivers have fish with mercury levels that may be unsafe for human consumption. For most people, the health risk from mercury by eating fish and shellfish is not a health concern, but some fish and shellfish contain higher levels of mercury that may harm an unborn baby or young child's developing nervous system.

EPA plans to use this new data to inform decision making about addressing critical needs around the country for rivers, streams, and other waterbodies. This comprehensive survey will also help develop improvements to monitoring these rivers and streams across jurisdictional boundaries and enhance the ability of states and tribes to assess and manage water quality to help protect our water, aquatic life, and human health. Results are available for a dozen geographic and ecological regions of the country.

For info: Stacy Kika, EPA, 202/ 564-4355 or Kika.stacy@epa.gov
Access Report at: www.epa.gov/aquaticsurveys

WASTEWATER SPILLS AZ

ADEQ ENFORCEMENT: FINE AND SEP

On April 5, the Arizona Department of Environmental Quality announced that the Town of Prescott Valley has agreed to a $675,000 settlement for numerous wastewater spills due to contractor failure, including the discharge of 1.6 million gallons of wastewater into the Agua Fria River in January 2010.

In addition to paying a $25,000 penalty, the town must complete a Supplemental Environmental Project (SEP) valued at $150,000 and implement a "Sanitary Sewer Overflow Action Plan" — valued at $500,000 — to resolve at least 10 separate untreated wastewater discharges that occurred between 2010 and 2012.

The SEP includes the installation during the next year of computerized equipment at all 10 of the town's sewage collection pump stations to link with the town's wastewater treatment plant. It is intended to provide early detection and response to potential malfunctions or overflows before substantial environmental impacts occur.

The action plan includes the purchase of a new sewer-cleaning truck that will be used to clean the town's 280 miles of collection system pipelines and manholes during a two-year period and distributing and airing educational materials intended to reduce flushing of items that may cause line blockages. Also, a review of emergency response procedures and surveying, inspecting and sampling of large commercial or industrial customers whose wastewater contains pollutants that may require pre-treatment prior to disposal into the town's sewers will be performed.

A total of more than 2 million gallons of wastewater were discharged in all the events. The largest occurred January 21-22, 2010 at the town's wastewater treatment plant, following a series of equipment and alarm failures that occurred while the plant was unmanned.

A second large discharge occurred from October 13 - 18, 2011, when approximately 320,000 gallons of sewage overflowed from the town's Quailwood pump station, after a failure to reset the alarm, two pumps failed, and an extended time between pump station inspections.

The settlement is subject to court approval.

For info: ADEQ Office of Communications, 602/ 771-2215 or ms15@azdeq.gov."

BORDER WATER SW

EPA INFRASTRUCTURE PROGRAM REPORT

EPA has released its *US-Mexico Border Water Infrastructure Program 2012 Annual Report*. The Report highlights Fiscal Year (FY) 2012 accomplishments and the program's environmental, public health and economic benefits to the US. The Border Program provides access to safe drinking water and adequate sanitation, often for the first time, to underserved communities along the US-Mexico Border. In FY 2012, the program provided 5,185 border homes with safe drinking water and 31,092 homes with adequate wastewater services. Currently the program has 24 projects under construction and supports 26 communities in the planning and development of projects for future construction. EPA's investments boost the regional and national economy through increased productivity, avoided health care and economic losses, direct and indirect job creation, enhanced ecological values, and by attracting trade opportunities and additional private investments.

For info: http://water.epa.gov/infrastructure/wastewater/mexican/index.cfm

WATER BRIEFS

CLEANUP SETTLEMENT CA
GOODRICH SUPERFUND SITE
TCE & PERCHLORATE

The United States has settled with the Goodrich Corporation requiring the company to investigate and clean up contaminated groundwater and soil at the B.F. Goodrich Superfund Site in Rialto, California. Comprehensive cleanup of the site may total as much as $100 million. In addition, EPA will be proposing to rename the site the Locust Avenue Superfund Site.

"After nine years of ongoing litigation, EPA is thrilled to announce the final work settlement for this Superfund Site," said Jared Blumenfeld, EPA's Regional Administrator for the Pacific Southwest. "Now, communities can be assured that groundwater contamination at this site will be addressed."

Goodrich, under an administrative consent order, must, at its own expense, install additional groundwater monitoring wells and complete testing and engineering analyses. Well installation and testing is expected to begin this summer and continue into 2014. Data from this analysis is needed to assist EPA with the development of the cleanup plan which is expected to be available for public comment in 2015.

Once that cleanup plan is selected, Goodrich, under a judicial consent decree, must design, build, and operate, under EPA's oversight, any cleanup facilities selected by the agency in its cleanup plan to address groundwater and soil contamination in central and south Rialto.

Goodrich will pay at least the first $21,500,000 of the cost of this cleanup work. The company is also responsible, with contributions from the Department of Defense and certain settlement proceeds from other responsible parties, for ensuring the completion of the cleanup work which could last for the next 30 years or more, no matter what its cost. Although EPA has not yet determined the full scope of the cleanup plan, remedies for similar groundwater contamination sites in Southern California have cost more than $40 million.

The United States has also entered into an additional settlement with KTI, Incorporated. KTI will pay $2.8 million to EPA to be used for costs related to the site. KTI will also allow EPA and other parties performing work on EPA's behalf to access the site for any cleanup work.

The cities of Rialto and Colton and the county of San Bernardino are also parties to the Goodrich consent decree. The cities sued Goodrich in 2004 and 2005. EPA joined the litigation in 2010 to require cleanup and recover federal money spent at the site.

From about 1957 to 1962, the B.F. Goodrich Corporation conducted research, development, testing, and production of solid-fuel rocket propellant in Rialto, California. Operations at the site by Goodrich and others have contaminated soil and groundwater with trichloroethylene (TCE) and perchlorate, which contributed to the closure of public drinking water supply wells in the area. The Superfund site was added to the EPA's National Priorities List in September 2009.

TCE is an industrial cleaning solvent. Drinking or breathing high levels may cause damage to the nervous system, liver and lungs. Perchlorate is an ingredient in many flares and fireworks, and in rocket propellant, and may disrupt the thyroid's ability to produce hormones needed for normal growth and development.

The Goodrich and KTI consent decrees (*City of Colton v. American Promotional Events, Inc., et al.*) will be lodged with the federal district court by the U.S. Department of Justice and are subject to a comment period and final court approval.

For info: Nahal Mogharabi, EPA, mogharabi.nahal@epa.gov
Decrees available at: www.justice.gov/enrd/Consent_Decrees.html

COMPACT CALL NE
REPUBLICAN RIVER COMPACT OBLIGATIONS

The Bureau of Reclamation is responding to the order from the Nebraska Department of Natural Resources (DNR) by directing the release of more than 13,000 **a**cre-**f**eet (af) of water from four federally managed reservoirs. The Release Order includes releases from Swanson Lake (3,232 af), Enders Reservoir (452 af), Hugh Butler Lake (1,984 af) and Harry Strunk Lake (7,548 af), totaling approximately 13,200 af. The releases started on Tuesday, April 9, morning and will continue at a reasonable rate of flow so that releases are completed by April 30.

In an effort to ensure Nebraska's compliance with the Republican River Compact, Nebraska DNR issued an order on January 1, 2013, putting in effect a Compact Call Year as defined by the current Natural Resource Districts Integrated Management Plans (IMPs). As a result, Nebraska DNR issued Closing Notices on Reclamation's reservoirs in the Republican River Basin prohibiting the storage of surface water flows until further notice. Reclamation has been working with Nebraska DNR to assist them in offsetting the projected shortfall associated with the IMPs.

"Reclamation follows Nebraska state law as it relates to water management," said Reclamation Nebraska-Kansas Area Manager Aaron Thompson. "We are working toward releasing water in the most reasonable manner to meet the order from the Nebraska Director of Natural Resources."

Reclamation has been working with Nebraska since January to help them be in compliance, proposing two options: having the Army Corps of Engineers frontload water from Harlan County Lake (HCL) sediment pool to offset Nebraska's expected 2013 overuse of their Compact allocation, or having Nebraska Bostwick Irrigation District frontload water supply from their 2012 storage water to the Kansas Bostwick Irrigation District, which would offset Nebraska's forecasted shortfall. Both of these proposals have been rejected by the Nebraska Department of Natural Resources, which moved forward requiring releases from Reclamation reservoirs.

Republican River water is allocated to the States of Colorado, Nebraska and Kansas through the Republican River Compact the three states agreed to, and which was approved by Congress in 1943.

For info: Aaron Thompson, Reclamation, 308/ 345-1027

CALENDAR

April 17 OR
The Future of Water Supply & Management in the Pacific NW Seminar, Portland. World Trade Center. For info: The Seminar Group, 800/ 574-4852, email: info@theseminargroup.net, or website: www.theseminargroup.net

April 17-19 CA
Central Valley Tour (Field Trip), San Joaquin Valley. Presented by Water Education Foundation. For info: www.watereducation.org

April 18 NC
Wastewater Treatment & Related Modeling Workshop (Potential Impacts of Hydraulic Fracturing on Drinking Water Resources), Research Triangle Park. EPA-RPT Campus Main Bldg. Auditorium. Presented by EPA. For info: Lisa Matthews, EPA, 202/564-6669, lisa@epa.gov or www.epa.gov/hfstudy/techwork13.html

April 18 OR
WRC Paired Watershed 2013: Key Findings on the Environmental Impact of Contemporary Forest Practices, Corvallis. LaSells Stewart Center. Presented by Oregon Water Resource Center. For info: http://wrcpairedwatershed2013.com/

April 19 MA
Stormwater Management in New England Seminar, Boston. Seaport Boston Hotel World Trade Ctr. For info: Law Seminars Int'l, 800/ 854-8009, email: registrar@lawseminars.com or www.lawseminars.com

April 19 AZ
Tucson Water & IBM's Smarter Cities Water Grant - Brown Bag Seminar, Tucson. WRRC, 350 N. Campbell Ave., 12-1:30pm. Presented by Water Resources Research Center. For info: http://wrrc.arizona.edu/node/10727

April 21 AZ
2013 Water Festival, Tucson. Reid Park DeMeester Outdoor Performance Area. For info: www.WaterFestivalTucson.org

April 21-26 FL
8th Int'l Ass'n of Hydrological Sciences Groundwater Quality Conference, Gainesville. University of Florida. For info: www.conference.ifas.ufl.edu/GQ13/

April 22 CO
Request for Water 2013 - Water Leasing Program Webinar, WEB. Presented by Colorado Water Trust. For info: www.coloradowatertrust.org/campaigns/request-for-water-2013

April 22-23 CA
9th Annual National Environmental Policy Act Conference: All Points of View on NEPA, San Francisco. Hotel Nikko. For info: CLE Int'l, 800/ 873-7130 or www.cle.com

April 23 WA
9th Washington Hydrogeology Symposium, Tacoma. Hotel Murano. For info: http://depts.washington.edu/uwconf/hydrogeo/

April 23 WA
Columbia River Treaty Study Results - Open House, Wenatchee. Community Ctr., Veterans Hall, 504 South Chelan, 4-7pm. Presented by Army Corps of Engineers & Bonneville Power Admin. For info: www.crt2014-2024review.gov

April 23-24 WA
Ecological Significance of High Flows on Alluvial Rivers Workshop, Omak. Koala Street Grill. Hydrology & Biology for Environmental Flow Requirements. For info: Northwest Environmental Training Center, 425/ 270-3274, www.nwetc.org

April 24 AZ
Linking Knowledge & Action for Water Sustainability & Urban Climate Adaptation - Research Update from ASU Decision Center for a Desert City (Brownbag), Tucson. WRRC, 350 N. Campbell Ave., 12-1:30pm. Presented by Water Resources Research Center. For info: Jane Cripps, WRRC, 520/ 621-2526, jcripps@cals.arizona.edu or http://ag.arizona.edu/azwater/

April 24 WA
GoGreen 13 Seattle - 4th Annual Conference, Seattle. The Conference Center. For info: http://seattle.gogreenconference.net/

April 24 WA
Columbia River Treaty Study Results - Open House, Clarkston. Quality Inn, 700 Port Dr., 4-7pm. Presented by Army Corps of Engineers & Bonneville Power Admin. For info: www.crt2014-2024review.gov

April 24-25 CA
Developing & Writing Effective CEQA Documents Course, Sacramento. Sutter Square Galleria, 2901 K Street. For info: UC Davis Extension, http://extension.ucdavis.edu/contact/

April 24-26 Spain
Asset Management for Enhancing Energy Efficiency in Water & Wastewater Systems Conference, Marbella. Sponsored by International Water Ass'n. For info: http://iceam2013.es/asset/index.php

April 25 WA
Columbia River Treaty Study Results - Open House, Coulee Dam. City Hall, 300 Lincoln Ave., 4-7pm. Presented by Army Corps of Engineers & Bonneville Power Admin. For info: www.crt2014-2024review.gov

April 25-26 NM
Law of the Rio Grande Conference (13th Annual), Santa Fe. Hilton Hotel. For info: CLE International, 800/ 873-7130 or www.cle.com/

April 25-26 HI
Endangered Species Act Seminar, Honolulu. YMCA, 1040 Richards Street. For info: The Seminar Group, 800/ 574-4852, email: info@theseminargroup.net, or website: www.theseminargroup.net

April 26 CA
Safe & Secure Water Supplies: Understanding the Bay Delta Conservation Plan (Panel Discussion), Chino. Inland Empire Utilities Agency Bldg. B - Event Ctr., 6075 Kimball Ave. Southern California Water Committee Second Qtrly Meeting. For info: For info: Kym Belzer (RSVP), 818/ 760-2121, kbelzer@fionahuttonassoc.com or www.socalwater.org

April 26 CO
AWRA Colorado Section Annual Symposium: Variability & Vulnerability of Colorado's Water Supply, Mt. Vernon. Mt. Vernon Country Club. For info: http://awracolorado.havoclite.com/

April 26 WEB
Integrated Water Resources Management: Yakima River Basin & Middle Rio Grande (Webinar), WEB. Presented by American Water Resources Ass'n. For info: www.awra.org/webinars/

April 26 AZ
Is Desalination the Solution to Water Security? Promise & Perils of a Technological Fix to the Water Crisis in Baja California & Sur, Mexico - Brown Bag Seminar, Tucson. WRRC, 350 N. Campbell Ave., 12-1:30pm. Presented by Water Resources Research Center. For info: wrrc.arizona.edu/events/brownbag

April 28-May 2 TX
2013 NGWA Summit: National & International Conference on Groundwater, San Antonio. Hyatt Regency. Sponsored by National Ground Water Ass'n. For info: http://groundwatersummit.org/

April 29 OR
Columbia River Treaty Study Results - Open House, Boardman. Port of Morrow, 2 Marine Dr., 4-7pm. Presented by Army Corps of Engineers & Bonneville Power Admin. For info: www.crt2014-2024review.gov

April 29-May 1 CA
Improving Drought Prediction at Seasonal to Inter-Annual Timescales Workshop, San Diego. Doubletree Downton. Sponsored by Western State Water Council, California Dept. of Water Resources & Western Governors' Ass'n. For info: www.westernstateswater.org/upcoming-meetings/

April 29-May 3 AL
Interstate Technology & Regulatory Council 2013 Spring Meeting, Montgomery. Renaissance Montgomery Hotel at the Conference Ctr. For info: http://www.itrcweb.org/Meetings/Upcoming

April 30 CA
2013 Anne J. Schneider Water Law & Policy Lecture, Sacramento. Crocker Museum. Prof. Joseph Sax, Lecturer, 4pm. For info: Free/Limited Seating - RSVP at Water Education Foundation, 916/ 444-6240 or Diana Farmer, dfarmer@watereducation.org or www.watereducation.org/doc.asp?id=2816

April 30 WA
UW Water Symposium, Seattle. University of Washington - Husky Union. Hosted by Center for Urban Waters. For info: www.tacoma.uw.edu/center-urban-waters/2013-university-washington-water-symposium

April 30 CA
Integrated Regional Water Management Workshop, Temecula. City Hall, Conf. Ctr., 41000 Main Street, 10am-4pm. Presented by California Dept. of Water Resources. For info: www.water.ca.gov/irwm/stratplan/workshops.cfm

April 30-May 1 TX
Environmental Trade Fair & Conference, Austin. Convention Ctr. Sponsored by Texas Commission on Environmental Quality. For info: www.tceq.texas.gov

May 1 CA
Integrated Regional Water Management Workshop, Burbank. Buena Vista Branch Library, 300 North Buena Vista Street. Presented by California Dept. of Water Resources. For info: www.water.ca.gov/irwm/stratplan/workshops.cfm

May 2-3 NV
Tribal Water Law Conference, Las Vegas. Bellagio. For info: CLE Int'l, 800/ 873-7130 or www.cle.com

May 2 WA
Columbia River Treaty Study Results - Open House, Seattle. Town Hall, 1119 8th Ave., 3-6pm. Presented by Army Corps of Engineers & Bonneville Power Admin. For info: www.crt2014-2024review.gov

May 3 OR
2013 Oregon Énvironmental Cleanup Conference, Portland. World Trade Center Two. For info: Holly Duncan, Environmental Law Education Center, 503/ 282-5220 or www.elecenter.com

May 3-5 WA
The Paths Ahead for NW Geosciences - 2nd NWGS Symposium, Seattle. University of Washington. Presented by Northwest Geological Society. For info: http://nwgs.org/symposium/symposium.htm

May 6-7 AZ
17th Annual Water Reuse & Desalination Research Conference, Phoenix. Sheraton Downtown. For info: www.watereuse.org/foundation/research-conference-17

May 6-8 DC
Managing Our Nation's Fisheries: Advancing Sustainability Conference, Washington. Mayflower Renaissance. Hosted by the Pacific Fishery Management Council. For info: www.cvent.com/events/managing-our-nation-s-fisheries-3/event-summary-94ddf325198f4501996ccc62aa396aa2.aspx

May 6-9 TN
Energy & Water 2013: Integrated Solutions for Advancing Technology & Management, Nashville. Nashville Convention Ctr. For info: www.wef.org/energy/

May 7 WA
Columbia River Treaty Study Results - Open House, Pasco. Holiday Inn Express, 4525 Convention Pl., 4-7pm. Presented by Army Corps of Engineers & Bonneville Power Admin. For info: www.crt2014-2024review.gov

May 7-10 LA
National Mitigation & Ecosystem Banking Conference, New Orleans. Sheraton New Orleans. For info: www.mitigationbankingconference.com/mitigation_call_presenters.htm

May 8 ID
Columbia River Treaty Study Results - Open House, Boise. Hampton Inn, 495 S. Capitol Blvd., 3-6pm. Presented by Army Corps of Engineers & Bonneville Power Admin. For info: www.crt2014-2024review.gov

May 8 AZ
2013 Seminar on Stormwater Regulations for the Construction Industry, Tucson. Joel D. Valdez Main Library. Presented by Pima Ass'n of Governments. For info: PAG, 520/ 792-1093 or www.PAGstorm.com/Construction

May 9 WEB
Tools of Integrated Water Resources Management: Palouse Basin & St. Johns river Water Management Dist. (Webinar), WEB. Presented by American Water Resources Ass'n. For info: www.awra.org/webinars/

May 9-10 WA
Clean Water & Stormwater Seminar, Seattle. Renaissance Hotel. For info: Law Seminars Int'l, 800/ 854-8009, email: registrar@lawseminars.com or www.lawseminars.com

May 9-10 OK
Oklahoma Water Law Conference, Oklahoma City. The Skirvin Hilton. For info: CLE Int'l, 800/ 873-7130 or www.cle.com

May 10 OR
Tight Lines Auction & BBQ Dinner, Bend. Aspen Hall, Shevlin Park. Presented by Deschutes River Conservancy. For info: www.deschutesriver.org

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CALENDAR

(continued from previous page)

May 13 — **WA**
CERCLA & MTCA Advanced Sediment Conference, Seattle. For info: Holly Duncan, Environmental Law Education Center, 503/ 282-5220 or www.elecenter.com

May 13 — **MT**
Columbia River Treaty Study Results - Open House, Libby. City Hall, 952 E. Spruce St., 4-7pm. Presented by Army Corps of Engineers & Bonneville Power Admin. For info: www.crt2014-2024review.gov

May 13 — **OR**
OSU Student Water Research Symposium (3rd Annual), Corvallis. CH2M Hill Alumni Ctr. Registration deadline May 1. For info: http://groups.oregonstate.edu/hydro/2013-osu-water-research-symposium

May 13-16 — **France**
4th International Multidisciplinary Conference on Hydrology & Ecology, Rennes. Univerisite de Rennes. For info: http://osur.univ-rennes1.fr/HydroEco2013/

May 14 — **ID**
Columbia River Treaty Study Results - Open House, Sandpoint. Community Ctr./Panhandle Bank, 414 Church St., 4-7pm. Presented by Army Corps of Engineers & Bonneville Power Admin. For info: www.crt2014-2024review.gov

May 14-17 — **AZ**
The Environmental Awareness Bootcamp, Scottsdale. Hilton Garden Inn, Scottsdale Old Town. For info: EPA Alliance Training Group, www.epaalliance.com

May 15 — **MT**
Columbia River Treaty Study Results - Open House, Eureka. RiverStone Lodge, 6370 Hwy 93 North, 4-7pm. Presented by Army Corps of Engineers & Bonneville Power Admin. For info: www.crt2014-2024review.gov

May 15 — **CA**
Integrated Regional Water Management Workshop, Red Bluff. Elks Lodge, 355 Gilmore Road. Presented by California Dept. of Water Resources. For info: www.water.ca.gov/irwm/stratplan/workshops.cfm

May 15-17 — **OR**
National Pretreatment & Pollution Prevention Workshop, Portland. DoubleTree by Hilton. Presented by Nat'l Ass'n of Clean Water Agencies. For info: NACWA, 202/ 833-2672 or registration@nacwa.org or www.nacwa.org

May 16 — **WA**
Hatcheries & Fisheries Conference, Seattle. For info: The Seminar Group, 800/ 574-4852, email: info@theseminargroup.net, or website: www.theseminargroup.net

May 16 — **CA**
Integrated Regional Water Management Workshop, Sacramento. Sacramento Regional County Sanitation Dist., Valley Oak Conf. Rm., 10060 Goethe Road. Presented by California Dept. of Water Resources. For info: www.water.ca.gov/irwm/stratplan/workshops.cfm

May 16 — **MT**
Columbia River Treaty Study Results - Open House, Kalispell. Kalispell Red Lion, 20 N. Main St., 4-7pm. Presented by Army Corps of Engineers & Bonneville Power Admin. For info: www.crt2014-2024review.gov

May 16-17 — **CA**
Flood Management Tour (Field Trip), American River. Presented by Water Education Foundation. For info: www.watereducation.org

May 16-17 — **CA**
Water & Agriculture: A Real Asset Investor Summit, Los Angeles. Terranea Resort. Hosted by Westwater Research & American Water Intelligence. For info: www.agwaterinvest.com

May 17-20 — **MO**
River Rally 2013, St. Louis. Sponsored by River Network & Waterkeeper Alliance.

May 19-22 — **OH**
World Environmental & Water Resources Congress 2013, Cincinnati. Duke Energy Convention Ctr. Sponsored by American Society of Civil Engineers. For info: http://content.asce.org/conferences/ewri2013/

May 20-21 — **TX**
Endangered Species Act Conference, Austin. Omni Hotel at Southpark. For info: CLE Int'l, 800/ 873-7130 or www.cle.com

May 21-22 — **Ontario**
Grey to Green: Conference on the Economics of Green Infrastructure, Toronto. Evergreen Brick Works. For info: conference@greenroofs.org or www.GreytoGreenConference.org

May 29-31 — **Netherlands**
Developing Capacity from Rio to Reality: Who's Taking the Lead - 5th Delft Symposium on Water Sector Capacity Development, Delft. For info: www.unesco-ihe.org/CD-Symposium

May 31 — **AK**
ESA - Impacts on Alaska Seminar, Anchorage. Dena'ina Convention Ctr. For info: Law Seminars Int'l, 800/ 854-8009, email: registrar@lawseminars.com or www.lawseminars.com

June 4 — **VA**
Water Acquisition Modeling: Assessing Impacts Through Modeling & Other Means Workshop (Potential Impacts of Hydraulic Fracturing on Drinking Water Resources), Arlington. EPA Conference Ctr. at One Potomac Yards. Presented by EPA. For info: Lisa Matthews, EPA, 202/564-6669, lisa@epa.gov or www.epa.gov/hfstudy/techwork13.html

June 5 — **VA**
Hydraulic Fracturing Case Studies Workshop (Potential Impacts of Hydraulic Fracturing on Drinking Water Resources), Arlington. EPA Conference Ctr. at One Potomac Yards. Presented by EPA. For info: Lisa Matthews, EPA, 202/564-6669, lisa@epa.gov or www.epa.gov/hfstudy/techwork13.html

June 5-7 — **NV**
ABA Water Law Conference, Las Vegas. Red Rock Resort. Sponsored by the American Bar Ass'n. For info: www.americanbar.org/groups/environment_energy_resources.html

June 7 — **OR**
Oregon Toxics Conference, Portland. For info: Holly Duncan, Environmental Law Education Center, 503/ 282-5220 or www.elecenter.com