



The Water Report™

Water Rights, Water Quality & Water Solutions in the West

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CONJUNCTIVE ADMINISTRATION ON THE EASTERN SNAKE RIVER PLAIN

by Phillip J. Rassier, Deputy Attorney General, Boise, Idaho

INTRODUCTION

The hydraulic connection between surface water and ground water which has been shown to exist in many watersheds throughout the American West is prompting reassessment of how best to manage and administer the often competing uses associated with these water sources. Such reassessment often necessarily involves adapting Western water law's "Prior Appropriation Doctrine" to changing circumstances and providing an avenue for new, coordinated, management regimens. This article discusses on-going developments in the State of Idaho aimed at protecting the State's agricultural industry by striking a balance between ground water supply and surface water demand.

BACKGROUND

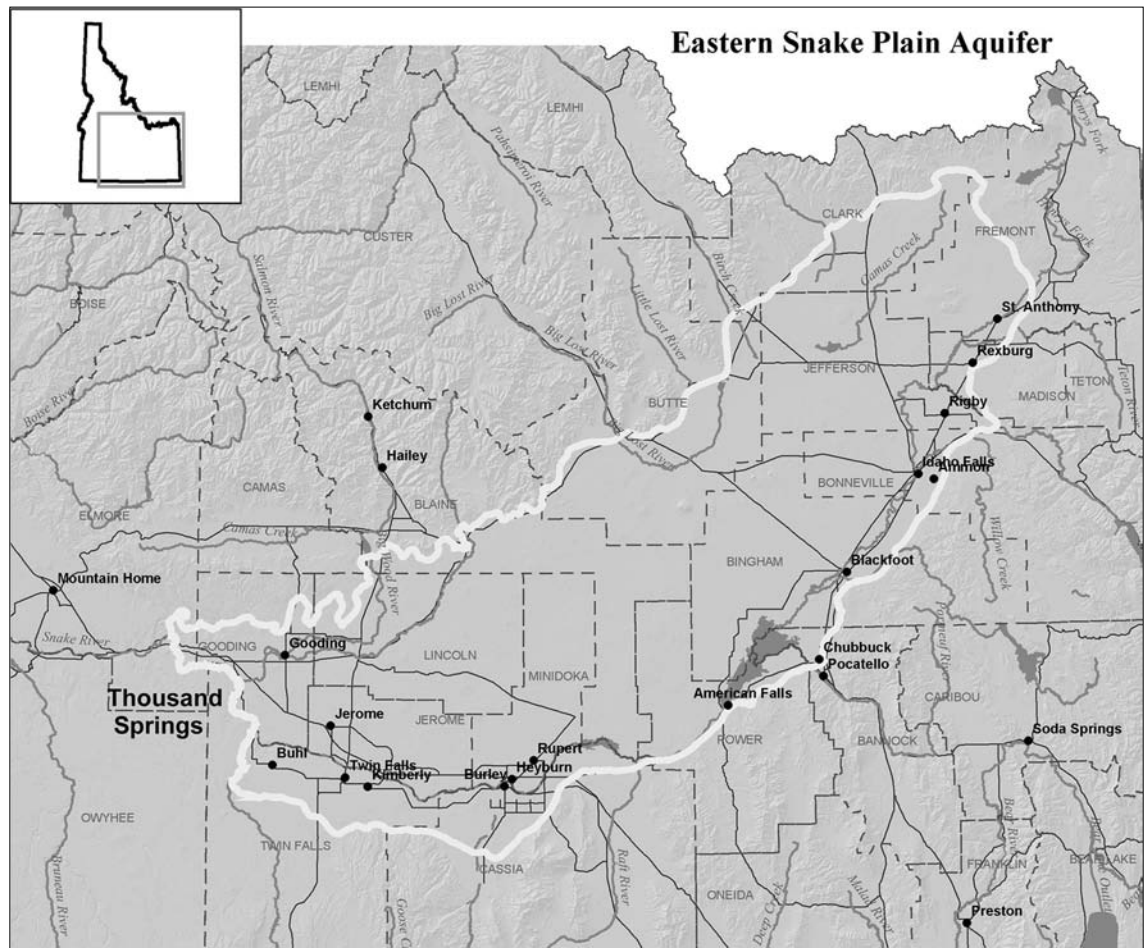
The Thousand Springs area was a landmark noted by Oregon Trail emigrants traveling west from Twin Falls along the south side of the Snake River near Hagerman, Idaho. This dramatic creation of nature resulted from water gushing from the basalt bluff along the Snake River Canyon as it discharged from the approximately 10,000 square mile Eastern Snake River Plain Aquifer (ESPA). The ESPA is roughly 60 miles wide north-to-south and 170 miles long east-to-west (see *Figure 1*). After the turn of the century much of the abundant water flows began to be harnessed by the construction of a long concrete collecting flume built along the upper face of the springs. The water was then channeled to electric turbines located some 165 feet below the collecting works.

The flows not initially appropriated for hydropower or irrigation use by the mid-1960's were mostly appropriated for use in Idaho's then emerging fish propagation industry. A few of the springs remain protected in their natural state as a reminder of the grandeur that once existed. These spring flows fed by the ESPA peaked in the early 1950's, having increased substantially from their natural condition prior to the commencement of surface water irrigation on the Snake River Plain. Although the increase in spring flows resulting from surface water irrigation on the Plain was well known at the time, no recognition of this unique factor is evidenced in the water rights issued by the State in the 1960's and 1970's for the appropriation of these artificially increased spring flows.

The spring flows have now decreased dramatically from their peak of about 6,800 cubic feet per second (cfs) in the early 1950's to about 5,200 cfs in 2002 (see *Figure 2*). This drop is attributed to a combination of factors, the most significant of which is the change in irrigation and water management practices on the Plain. These changes include the widespread switch from flood irrigation to sprinkler irrigation by surface water users on the Plain and discontinuance of the practice of running water through canal systems in the winter for livestock watering purposes. Another lesser but still significant factor is the large-scale development of irrigation from ground water on the Plain starting in about 1945. Recently, an extended five-year drought decreased natural recharge to the aquifer and more importantly reduced the quantity of surface water available for irrigation on the Plain — thus reducing incidental recharge.

Conjunctive Management

Figure 1



"Calls" Crisis

Discharge and Recharge

With the progress made in the Snake River Basin Adjudication (commenced in 1987), the State of Idaho is now in a position to conjunctively administer the rights to the interconnected surface and ground water rights in the basin. This has resulted in delivery "calls" (requests for water right regulation by the State) being made by the holders of senior rights to the use of water from spring sources for fish propagation purposes against the holders of junior ground water rights on the Plain used for irrigation and other purposes. These calls have created a water management crisis which has captured the attention of the legislature, state water administration officials, and the water user community who are engaged in intense efforts to negotiate a resolution to the crisis.

DEVELOPMENT OF THE RESOURCE

The ESPA is a large aquifer estimated to contain between 200 and 300 million acre feet (MAF) of water within its uppermost 500 feet. The ESPA is formally defined as the aquifer underlying the Eastern Snake River Plain as delineated in the report "*Hydrology and Digital Simulation of the Regional Aquifer System, Eastern Snake River Plain, Idaho*," USGS Professional Paper 1408-F, 1992 — which excludes certain areas lying south of the river. The USGS estimates that in 1980 there was approximately 8.2 MAF of discharge from the aquifer through spring discharges and ground water pumping. A relatively modest 13.4 percent, or 1.1 MAF, of the total discharge was attributable to ground water pumping. This water is used to irrigate approximately one million acres of land and for other municipal and commercial purposes. Another approximately 1.2 million acres of land on the Plain are irrigated with surface water. Incidental recharge from this surface water irrigation is responsible for more than half of the 8.1 MAF of annual recharge to the aquifer according to a 1980 estimate.

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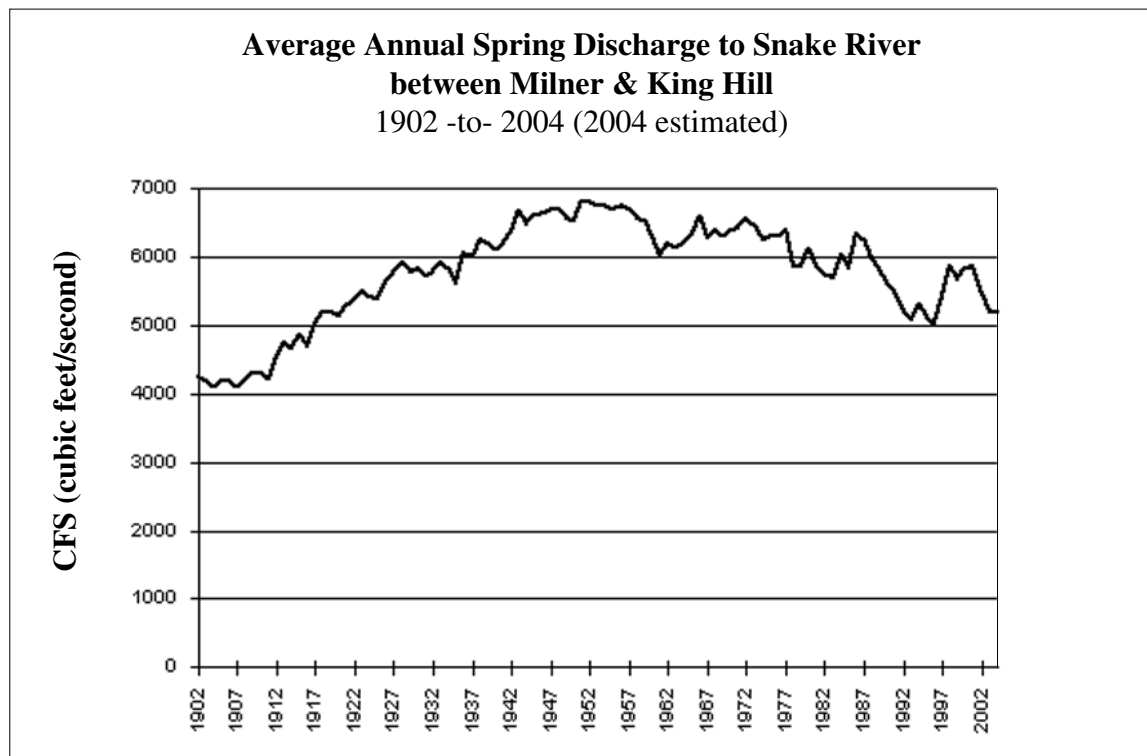
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Conjunctive Management

Figure 2



Appropriation Decisions

Some spring right and surface right holders have criticized the State for allowing too much water to be appropriated from the ESPA. Given the large size of the resource and Idaho's constitutional and statutory mandates that the right to appropriate the unappropriated waters of the State shall never be denied, it is difficult to accept these assertions. The 1951 Idaho Ground Water Act, as amended in 1953, affirmed the extension of the traditional policies of the Prior Appropriation Doctrine to the development of the State's ground water resources. The Act goes on to provide that "while the doctrine of 'first in time is first in right' is recognized, a reasonable exercise of this right shall not block full economic development of underground water resources." Idaho Code § 42-226.

Spring Discharge

Some 50 years following the enactment of the Ground Water Act, spring right holders argue that any diminishment of spring flow discharges from the aquifer caused by junior ground water pumping must be curtailed or otherwise addressed through mitigation. This is a difficult position for ground water users to accept given the strong public policy support over that time period encouraging ground water development for the benefit of the State's economy. One naturally wonders how in the midst of this aggressive ground water development stage, the State neglected to subordinate rights to the natural spring flow discharges that were appropriated for fish propagation purposes starting in the mid-1960's, near the period of the highest spring flows from the aquifer. Clearly, if these spring flow appropriations were viewed as being in a position to call out junior ground water development this action would have been recognized as contrary to the State's policy of allowing for the full economic development of the aquifer.

History of Regulation

The most obvious answer to this enigma is that because ground and surface water rights were not administered together at that time, there simply was no contemplation that spring right holders would look to junior ground water appropriators in the event that spring flows began to diminish. Secondly, there likely was not an anticipation of the dramatic rate of conversions by surface water irrigators on the Plain from flood to sprinkler irrigation that occurred during the 1980's and beyond. Nor would there have been an anticipation of the serious drought sequences that have occurred from the mid-1970's to the present. The conversions to sprinkler irrigation together with the effects of recent droughts have greatly diminished the discharge of water from the springs.

RECENT WATER ADMINISTRATION ACTIONS

Hydraulic Connection

The Director of the Idaho Department of Water Resources (Director) has taken several actions over the past three years which recognize that the water supply for the ESPA is hydraulically connected to the Snake River and tributary surface water sources at various places and to varying degrees. As a consequence of this recognition and based on simulations using a calibrated computer model of the ESPA, the Director determined that ground water withdrawals from certain portions of the ESPA for irrigation and other consumptive purposes cause reductions in spring flows tributary to the Thousand Springs reach of the Snake River.

**Conjunctive
Management****Ground Water
Management
Areas****Replacement
Water****Enforcement****Spring Right
"Call"****Long-Term
Solutions****Ground Water Management Areas**

On August 3, 2001, the Director issued orders designating the Thousand Springs Ground Water Management Area and the American Falls Ground Water Management Area. The Director issued the orders in exercise of his statutory authority to administer rights to the use of ground water, in a manner that recognizes and protects senior priority surface water rights in accordance with the directives of Idaho law. In issuing these orders, the Director also announced his intention to issue additional orders prior to September 1, 2001, directing that holders of certain ground water rights cease withdrawals beginning March 15, 2002, pursuant to Idaho Code § 42-233b.

The Director's actions provided strong impetus for the affected parties to move toward agreement.

On August 31, 2001, representatives of the affected ground and surface water right holders advised the Director that an agreement in principle had been reached. Under the agreement, the holders of junior priority ground water rights agreed to provide replacement surface water for the next two irrigation seasons. Based upon the best available information, the amount of the replacement water was equal to the amount the Director indicated would have resulted from the curtailment of the ground water diversions intended by the Director within the Ground Water Management Areas. Based on this agreement, the Director did not issue a curtailment order in 2001. The Director subsequently approved more detailed two-year stipulated agreements between the affected ground and surface water users for both the Thousand Springs and American Falls areas. The ground water users agreed to provide a total of 68,500 acre feet of replacement water during each of the two years covered by the agreements. The agreements expired on December 31, 2003.

Water Districts Established

Consistent with the stipulated agreements, the Director sought authorization from the Snake River Basin Adjudication (SRBA) District Court for interim administration of water rights by the Director in the administrative basins overlying the ESPA in the Thousand Springs and American Falls areas. On January 8, 2002, the SRBA District Court issued an order authorizing the interim administration by the Director. The Director issued orders on February 19, 2002, creating Water District No. 120 in the American Falls area and Water District No. 130 in the Thousand Springs area to administer rights to the use of ground water. A third order issued by the Director on January 8, 2003, revised the boundaries of Water District No. 130 to include additional lands overlying the ESPA irrigated with ground water. The Director similarly revised the boundaries of Water District No. 120 through an order issued on January 22, 2004.

Water Districts No. 120 and No. 130 were created for the protection of prior surface and ground water rights. The watermasters for the two districts perform their duties under the supervision of the Director. The watermasters are authorized to: curtail illegal diversions; measure and report diversions; and enforce the provisions of any stipulated agreement. They may also curtail out-of-priority diversions that are not covered by a stipulated agreement or a mitigation plan approved by the Director when determined by the Director to be causing injury to senior priority water rights.

On August 29, 2003, the Director issued orders dissolving the Thousand Springs Ground Water Management Area and reducing the area of the American Falls Ground Water Management Area based on a determination that administration of the water rights at issue could now be accomplished through the operation of Water Districts No. 120 and No. 130. An administrative proceeding challenging the entry of these orders is presently stayed.

The 2004 Water Delivery Calls

On March 10, 2004, the Director issued an order responding to a water delivery call by a spring right owner (Rangen, Inc.) against ground water users on the ESPA. The order created the potential for the curtailment of rights held by over 1,300 ground water users on the ESPA. [A copy of the order may be viewed at website: www.idwr.idaho.gov/about/orders.htm] Newspaper accounts stated that the economic loss to the region in the event of a curtailment of 1,300 wells on the ESPA could be as high as \$900 million. In response to the Director's curtailment order, representatives of surface and ground water users and the State of Idaho entered into *The Eastern Snake Plain Aquifer Mitigation, Recovery and Restoration Agreement for 2004*. The 2004 agreement stayed further litigation in the matter until March 15, 2005.

ESPA AQUIFER MITIGATION, RECOVERY AND RESTORATION AGREEMENT FOR 2004

The State of Idaho, spring users in the Thousand Springs Reach of the Snake River and two ground water districts on the Plain entered into an agreement on March 15, 2004. The 2004 agreement stayed the water delivery calls by surface water users for one year giving the parties time to fashion long-term restoration and recovery solutions for the ESPA and the Thousand Springs water supply issues. The 2004 agreement contains aggressive action commitments for the legislative and executive branches of state government, the ground water users, and the spring users. The agreement also identified actions that the

Conjunctive Management

Legislative Action

parties expected the state congressional delegation to pursue in order to assist in resolving the ESPA crisis. [A copy of the agreement may be viewed at website: www.idwr.idaho.gov/Committee/default.htm]

State Commitments

By direction to its Expanded Natural Resource Interim Committee, the Idaho Legislature committed to undertake the following actions (among others):

- Develop short-term and long-term ESPA management goals and objectives.
- Investigate and make recommendations for water supply measures or projects, including large-scale managed recharge projects and the construction or acquisition of additional surface water storage space.
- Investigate the extent of ground water depletions in the ESPA and make recommendations for reducing or curtailing depletions.
- Investigate and make recommendations for augmenting spring flows.
- Study and recommend a method for funding implementation of the ESPA goals and objectives, including a water use fee and use of state bonding authority.
- Make recommendations for legal mechanisms to implement conjunctive administration of surface and ground water rights in a manner that ensures full participation by ground water users in mitigation efforts.
- Meet on a monthly basis, establish and oversee technical and stakeholder committees, maintain meeting records, and create quarterly reports.

Water Leases

The legislature also appropriated approximately \$ 2 million to lease replacement water and finance mitigation measures for ground water users and pay for infrastructure improvements for spring users. The state committed its executive branch to assist through the administration of grant and loan programs and the provision of technical services including the completion of simulated runs of various management scenarios using the newly reformulated and recalibrated ESPA ground water model.

Water User Commitments

In return for approval of the agreement as an effective mitigation plan for 2004, the ground water users agreed to provide a total of \$ 1 million to affected spring users to be distributed by a spring user entity. The ground water users also agreed to continue several ongoing mitigation measures and to undertake new mitigation measures. The spring users agreed to stay all pending delivery calls and not make any new delivery calls against the aquifer for a one-year period through March 15, 2005.

Mitigation Payment

Stay of "Calls"

PROGRESS OF THE EXPANDED NATURAL RESOURCE INTERIM COMMITTEE

Following adjournment of the 2004 legislative session in March, the full membership of the Expanded Natural Resource Interim Committee has been meeting monthly, with numerous subcommittees and work groups meeting on a more frequent basis. In addition to the ESPA, the committee is also addressing water issues in the other major aquifer systems statewide. Much time, therefore, has been devoted to collecting information and hearing presentations by experts and others as to the problems that exist and the actions that might be taken to address them.

"STRAW MAN PROPOSAL"

"Straw Man"

In mid-September 2004, the co-chairs of the Committee distributed a document formally titled "*ESPA Conceptual Settlement Framework*" and informally referred to as the "straw man proposal" (Proposal). The goal of the Proposal is to create a positive change of 600,000 to 900,000 acre feet annually for those relying on the aquifer water supply. This would be accomplished through a combination of efforts that would increase available water supplies, improve water management, and decrease water demand. A principal objective is to stabilize the discharge of water from the aquifer in the mid-Snake Thousand Springs area near Hagerman and also further east in the American Falls area.

Stabilize Discharge

The Proposal is based on dual premises. The first premise is that under the Prior Appropriation Doctrine followed in Idaho, a senior priority water right holder is entitled to a water supply undiminished by junior appropriators, to the extent necessary to satisfy the senior priority right in a reasonable manner during times of need. The second premise is that the measure of the mitigation that the junior priority water users can be required to provide can be no greater than the depletionary effects caused by the exercise of the junior rights. The Proposal recognizes that, in the event of litigation, other common law and statutory principles of the prior appropriation doctrine could be asserted. These could include: the "futile call" doctrine ("call" that won't result in providing water for the senior user won't be enforced); the requirement for a reasonable means of diversion; and the policy favoring full economic development of the resource.

Water Law Principles

**Conjunctive
Management****Acquisitions****Exchanges****Recharge
Program****Demand
Reductions****CREP****Measurement****Water Supply**

THE PROPOSAL'S WATER SUPPLY COMPONENTS INCLUDE THE FOLLOWING:

- The State will seek to acquire 200,000 to 260,000 acre-feet of natural flow or storage water rights above Hells Canyon Dam, in the lower Snake River, from willing sellers. Water rights acquired below Milner, near Twin Falls, would be exchanged with storage water from the upper Snake that would otherwise be made available to the Bureau of Reclamation for flow augmentation purposes in the lower Snake. Acquisition of the water rights would be financed through revenue bonds issued by the Idaho Water Resource Board. Revenue for repayment of the bonds would primarily come from grants, subsidies or fees associated with flow augmentation and assessments from water users benefiting from the mitigation effects of the enhanced water supply.
- Ground Water Districts will seek to obtain a 100,000 acre-feet reduction in ground water depletions over a five- to ten-year period through the conversion of irrigated lands from a ground water source of supply to a surface water source.
- The State will seek to develop a managed recharge program designed to provide an average annual benefit of 200,000 acre-feet of water to the aquifer. The cost of water would be assessed against all water users benefiting from the program.
 - Water Management Projects — The proposal projects 100,000 to 150,000 acre-feet annually to be derived from various water system changes that would modify the manner in which surface water supplies discharged from the aquifer are utilized. One example is using surface water return flows or ground water to irrigate lands now relying upon reduced spring flows as a source of water.
 - Demand Reductions — The proposal projects a reduction in spring flow and aquifer demand of 150,000 to 250,000 acre-feet annually. The aquifer demand reductions are expected to occur through withdrawal of up to 100,000 acres of land from irrigation under the Enhanced Conservation Reserve Program (CREP) over a two-year period. CREP is funded through 80% federal dollars with a 20% state match requirement. The spring flow demand reductions are anticipated to occur through the purchase of water rights or subordination agreements from spring right holders. The acquisitions would be financed through revenue bonds issued by the Idaho Water Resource Board and paid for through assessments on junior priority water right holders.

Monitoring

The Proposal also includes a monitoring program component. The monitoring will consist of an ongoing water measurement and monitoring program for the ESPA to be established by the Idaho Department of Water Resources. The monitoring program would include a commitment to update the ESPA ground water model on a periodic basis, and to complete the agreed upon ESPA modeling scenarios necessary to implement any settlement agreement. The annual cost of the monitoring program based on a 20-year annualized cost is estimated to be \$ 1.275 million.

Conclusion

The straw man proposal put forward by the co-chairs of the Expanded Natural Resource Interim Committee of the Idaho Legislature provides a realistic basis for settling the present controversy over implementing conjunctive administration of ground and surface water rights on the Eastern Snake River Plain. The affected parties have engaged in extensive meetings and negotiation sessions over the summer and into the fall of 2004. Although the parties have made progress it is still too early to know the details of any final resolution. It is conceivable that the parties will not reach an agreement and instead turn to litigation. Litigation, however, holds considerable risk for both sides of the dispute. Failure to reach an agreement could be devastating for some water users and for the overall economy of the state.

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The views expressed in this article are the author's and not necessarily those of the Idaho Office of Attorney General or the Idaho Department of Water Resources.

GROUND WATER RIGHT TRANSFERS IN THE SNAKE RIVER PLAIN, IDAHO

by Gary S. Johnson, Robert L. Harris, Bryce Contor, and Donna M. Cosgrove

INTRODUCTION

In Idaho, as in many other states with strained water supplies, ground water right transfers are the dominant means of securing ground water for new and potentially more economically valuable uses. The transfer process is legally constrained, however, by the possibility that the new pumping location (point of diversion) could create an additional impact on other water rights (senior and junior). That impact may be in the form of declines in aquifer water levels or additional depletion of surface water flows. When multiple surface water bodies are interconnected with an aquifer, any change in pumping location will cause additional depletion of one or more surface water bodies that are closer to the new point of diversion. This article provides an assessment of the approach taken in the Eastern Snake River Plain in Idaho to deal with the impact of transfers of aquifer pumping location (point of diversion) on surface water bodies. There are three segments to the article, written by different authors, presenting different aspects and perspectives concerning: I) Hydrologic Considerations and Current Assessment Processes; II) Legal Considerations Under the Current Process; and III) Possible Alternative Approaches to Mitigation.

I: HYDROLOGIC CONSIDERATIONS AND ASSESSMENT PROCESS

by Gary S. Johnson and Donna M. Cosgrove, University of Idaho

The effects of ground water pumping propagate in all directions through an aquifer system and ultimately impact all interconnected surface water resources to differing degrees. Ultimately, all consumptive ground water pumping results in depletion of an equal volume of interconnected surface water, in all cases where interconnected water bodies exist (including wetlands). The degree of impact depends upon aquifer properties and the distance between the pumping location and the surface water body, but the total volume of depletion of all sources will equal the volume of pumping (over sufficient periods of time). Consequently, transferring the location of pumping changes the degree to which different surface water bodies are impacted. As one surface water body accumulates flow due to a change in location of pumping, another (or others) will be depleted by an equal amount. This will happen in every case where multiple surface water resources are interconnected with a single aquifer system. Multiple surface water resources may refer to a single river with multiple interconnected reaches of that river, multiple lakes, or wetlands.

Where there are multiple surface water bodies that are interconnected with an aquifer and fully appropriated, any change in location of the point of diversion of a ground water right will always adversely impact a surface water right in the new vicinity. A common means of mitigating for the depletion of the surface water in the Snake River Plain in Idaho is to reduce the quantity of water pumped at the new pumping location. This mitigation may be viewed as a transaction cost and may inhibit transfers to higher value uses at other locations and can also have long term implications on resource management. With every transfer of a ground water right, less water is consumptively pumped, resulting in an overall reduction in demand on the aquifer.

In order to promote rapid hydrologic assessments of effects of transferring the location of ground water pumping on surface water resources in the Eastern Snake River Plain, a ground water flow model has been modified to produce the "Ground Water Rights Transfer Tool." This Tool has been identified by the state water management agency, the Idaho Department of Water Resources (IDWR), as the preferred means for evaluation of the effects of changes in ground water pumping location on the Snake River (IDWR Administrator's Memorandum, October 30, 2002). Consultants apply the Tool when proposing transfers and the IDWR uses the same Tool to assess the equity of the consultant's proposal.

The Ground Water Rights Transfer Tool (Transfer Tool) runs the ground water flow model to quantify the hydrologic impacts of ground water pumping on four reaches of the Snake River, both before and after a change in point of diversion. [The Transfer Tool is downloadable from www.idwr.state.id.us/water/rights/default.htm; click on "Eastern Snake Plain Aquifer (ESPA) Ground Water Rights Transfer Spreadsheet."] Acceptance of the same model and spreadsheet interface by water users and regulators minimizes disputes over the hydrologic effects of a transfer. A simple spreadsheet interface on the model makes these assessments easy to perform. Typically, a consultant will decrease the pumping rate at the "after transfer" location until the depletion at all river reaches is less than or equal to the "before transfer" depletion rates. Thus, in addition to creating a standard procedure for the State to evaluate hydrologic

Injury Issues

**GW Connection
to
Surface Water**

**Mitigating for
Depletion**

Transfer Tool

**GW Impact
Quantification**

Transfers**Diversion Rate
Penalty****Incidental
Benefit****Transfers of
26,000 AF****4.3% Mitigation****Legal
Background**

effects of transfers, use of the Transfer Tool has also created a situation where a “diversion rate penalty” is associated with most or all ground water right transfers

Recognizing that future economic growth depends upon the ability to transfer water use to higher value uses, this process has both aided and inhibited that movement of water. Ground water right transfers in the Eastern Snake River Plain were stalled prior to the development of the Transfer Tool because it was difficult or impossible to make valid assessments of impacts to the Snake River. The widespread acceptance and use of the tool has created a common basis for evaluation of hydrologic impacts and accelerated processing of transfers. The recognition that all transfers will be subjected to a diversion rate penalty, however, has inhibited some users, and potential users, from initiating a transfer. On the other hand, the diversion rate penalty means more water will be left in the aquifer — which may aid in relieving other user conflicts in a heavily appropriated system. (A later section of this article describes the net estimated mitigation for transfers.)

Reducing the diversion rate to insure that a transfer has no detrimental hydrologic effect on any river reach insures that other reaches will acquire an incidental benefit, or supplemental flow. At the present time, there is no means for users to acquire credits for incidental benefits to other reaches. These external benefits will likely be enjoyed by other water users and should aid in improving the environmental health of the system. One means of accounting and providing credit for the incidental benefits may be the development of a comprehensive ground water accounting system that is described later in this article.

An estimated 20 transfers have been completed using the Transfer Tool in the Eastern Snake River Plain. Collectively, these transfers moved the point of diversion for about 26,000 acre-feet per year of ground water pumping. All transfers moved the point of diversion less than 50 miles. The collective effects of the transfers, without mitigation, would depend upon whether the majority of pumping sites were moved nearer or farther from a given reach. If the moves are random in direction, then the net effect of a large number of transfers may be negligible, with adverse and positive impacts of different transfers offsetting each other. In the case of the Snake River Plain aquifer, it appears that during the past two years there has been no obvious trend in the direction of movement of the points of diversion. Therefore if unmitigated, there may be an offsetting positive and negative impact of individual transfers.

It is estimated that of the 26,000 acre-feet transferred, about 1,100 acre-feet per year or 4.3 percent was withheld as mitigation in the long term (in the short term the amount may be different as the Transfer Tool can represent changing conditions over time). This was the amount calculated by Transfer Tool methods to be the unmitigated depletion of the most adversely impacted river reach from a transfer of the full right. If these numbers are typical of future events, then we may expect to see only about 5,500 acre-feet per year of mitigation water contributed to the aquifer every decade. It is important to note that this is a very small amount relative to the annual aquifer water budget of over six million acre-feet per year, and consequently will not result in substantial changes in aquifer water levels or spring discharges. Although the effect of transfers may be negligible relative to the total water budget, mitigation is necessary to conform with Idaho law. The offsetting effects of multiple transfers when there is no dominant direction of movement may also imply that perhaps mitigation should not be required. It should be recognized, however, that it is quite possible that in the future there may be a tendency for ground water use to be transferred more to one end of the basin than the other, creating a stronger need for mitigation. Recognizing that mitigation requirements inhibit transfers and limit the movement of water to higher value uses, it is worthwhile to consider alternative approaches that are legal, equitable, and scientifically sound. The ground water accounting system discussed in section III of this article may be one of these alternatives.

II: GROUND WATER RIGHTS TRANSFER TOOL - A LEGAL PERSPECTIVE

by Robert L. Harris, Holden, Kidwell, Hahn & Crapo, PLLC

Management of Idaho’s water is usually controversial. The proposed use of the Ground Water Rights Transfer Tool (Transfer Tool) in the Eastern Snake River Plain by the Idaho Department of Water Resources (IDWR) is certainly no exception. The purpose of this section is to offer some legal background of Idaho’s water law in order to better understand the Transfer Tool’s role in the management of Idaho’s water.

As an initial matter, it is important to understand that a water right is a real property right, but it is not an absolute ownership right. It is a use (or usufructuary) right that has at least seven specific elements (listed below). In other words, the holder of a water right merely possesses the right to divert water from the public source of supply and use it for a beneficial use (such as irrigation), but the water right holder does not own the water molecules themselves because all of Idaho’s water is the property of the state.

Transfers Constitutional Right Regulation Seven Elements Transfer Option Approval Criteria Junior Rights Protection Injury vs. Impact	Idaho Code §42-101 (Michie 2003). However, even though a water right is not an ownership right, it is still a real property right that is subject to the US Constitution's Fifth Amendment that prohibits the taking of property without payment of just compensation. Like many of its sister western states, Idaho allocates its water under the prior appropriation system. Idaho Constitution, Art.XV, §3: "[t]he right to divert and appropriate the water of any natural stream...shall never be denied..." Idaho Code §42-106 (Michie 2003). Thus, Idaho's water rights are governed by the Prior Appropriation Doctrine's adage (perhaps some would say commandment) that "first in time is first in right." Idaho Code §42-106 (Michie 2003). Presently, IDWR is the administrative agency that oversees administration of water rights in Idaho and ensures that the Prior Appropriation Doctrine is followed. Under the Prior Appropriation Doctrine, water rights in any given water system (or administrative district) that are senior in priority in a water system (earlier priority date) are legally entitled to be fully filled before any water under a water right that is junior in priority is entitled to be diverted. Thus, water rights with earlier priority dates are more secure than those with later priority dates. As mentioned above, IDWR ensures that the prior appropriation doctrine is followed. This means that a senior water right holder can obtain IDWR's help in enforcing its priority. A senior does this by making a "call." When a call is made, upstream junior appropriators are required to reduce or cease their diversions of water in order to supply the senior right with water. Note, however, that a call on a junior that does not supply the senior with additional water to satisfy the senior's right is a "futile call" and will not be enforced. As noted above, a water right has at least seven elements that define and limit the use of the water. Those elements are: 1) source (i.e., South Fork of the Snake River); 2) priority date (i.e., June 7, 1940); 3) amount (i.e., 5 cubic feet/second (cfs)); 4) period of use (i.e., April 1st to October 1st); 5) purpose of use (i.e., irrigation); 6) point of diversion (i.e., a legal description); and 7) place of use (also a legal description). As discussed below, these elements are relevant when it comes to water right transfers. Moratorium on New Rights: Transfer Option As a practical matter, it has been very difficult to obtain a new water right in the Eastern Snake River Plain region of Idaho because of a moratorium on new water rights issued by IDWR in the early 1990s. [See, <i>In the Matter of Applications for Permits for the Diversion and Use of Surface and Ground Water Within the Eastern Snake River Plain Area and the Boise River Drainage Area</i>, Amended Moratorium Order, available at website: www.idwr.state.id.us/about/orders/Moratoriums/Moratorium%20ESA%201993.pdf] As a result, water users have turned to water right transfers to meet their water needs. The term "transfer" can be confusing because it may appear to mean that a water right is simply conveyed unchanged to another person. However, in Idaho, the term "transfer" is used to describe the procedure for changing one or more of four of the seven elements mentioned above, namely, point of diversion, place of use, period of use, and nature of use. Idaho Code § 42-222 (Michie 2003). Thus, one may equate the term "transfer" with "element change." Typically, a water right transfer is undertaken when there has been a change in water right ownership because the new owner may wish to change one of the elements of the water right (usually point of diversion or place of use). Once a transfer application is filed with IDWR, the agency is required to examine a number of criteria in order to determine whether or not to approve the transfer. Idaho Code §42-222(1) (Michie 2003). A notice of transfer is also published in the local newspaper of the county where the transfer is proposed because under Idaho law "any person firm, association, or corporation" may object to the proposed transfer by filing a notice of protest with IDWR. Idaho Code §42-203A(4) (Michie 2003). Perhaps the primary reason a person would protest a transfer is that the right to be transferred may have an earlier priority date and potentially interfere with the ability of the holder of the junior priority right to continue to receive water in the historical fashion. Thus, transfer law is interesting due to the fact that while the focus of the prior appropriation doctrine is to protect senior water rights, the transfer procedure and its "no-injury rule" also protects junior rights. Injury Standard The term "injury" is not defined in the Idaho Code or in any court case or administrative rule, but the idea behind the no-injury rule is that a transfer should not, to a certain degree, decrease the amount of water available under junior rights. Note, however, that the transfer statute in the Idaho Code uses the term "injury" and not "impact." Idaho Code §42-222(1) (Michie 2003): "The director of the department of water resources shall examine all the evidence and available information and shall approve the change in whole, or in part, or upon conditions, provided no other water rights are injured thereby, ...". The
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Transfers Substantial Injury Material Injury Conjunctive Management Tool's Purpose Injury Determination Mitigation Form	reality is that a transfer will always have some impact on other rights, but at some point, those impacts can cause injury and it is IDWR's job to determine at what point those impacts cross into injury territory. A number of Idaho cases have made it clear that the injury to the water right must be real and substantial. For example, see <i>Beecher v. Cassia Creek Irr. Co.</i>, 66 Idaho 1, 154 P.2d 507, 509 (1944): "The question here presented is whether other users, particularly respondents, of the waters of Cassia Creek and its tributaries are injured or will be injured by the change, or, as frequently said, substantially injured, not merely a fanciful injury but a real and actual injury." The Idaho Supreme Court in <i>Bower v. Moorman</i>, 27 Idaho 162, 147 P. 496, 502 (1915), opined: "The threatened injury must be material and actual. An injunction cannot be granted to allay the fears and apprehensions the respondents have as to what may occur in the future. It is incumbent upon respondents to show that the acts against which they ask protection are not only threatened, but will in all probability be committed to their permanent injury. Such injury must be material and actual and not fanciful, theoretical or merely possible." As mentioned above, management of Idaho's water pursuant to law is complicated in practice. But all of the above background is important because it puts IDWR's use of the Transfer Tool in context—the no-injury rule and the conjunctive management (discussed below) of surface water and ground water are the reasons for the development of the Transfer Tool. For many years, Idaho treated surface water and ground water as different sources of water. This meant that a surface water user could not make a "call" on a junior ground water right because ground water was considered to be a separate source. As a general proposition, most surface water rights (including rights to spring water along the Snake River Canyon) in the Eastern Snake River Plain are senior to ground water rights simply because ground water development began later than the development of surface water rights. Idaho has attempted to abandon the differing treatment of these sources and presently attempts to manage both ground water and surface water together as a single source under the prior appropriation doctrine. This co-management of both water sources in Idaho is called "conjunctive management" and is perhaps the most complex and controversial management policy of IDWR [See Idaho Administrative Procedures Act 37.03.11 (Rules for Conjunctive Management of Surface and Ground Water Sources)]. It seems to be well accepted that the Eastern Snake Plain Aquifer and the Snake River are hydrologically connected, but the difficulty is that those connections are complex and often hard to understand because of geologic and other features of the aquifer. The Transfer Tool's purpose is to predict the effects of one or more particular ground water diversions on various reaches of the Snake River in order to protect surface and spring water users from injury. Note that simply changing the point of diversion of a water right may not change the total impact on the river if the amount of the water right stays the same, but a change in location of such point does redistribute the impacts associated with a water right. A rough analogy is a situation where a person disconnects his water line from a main water line and then attaches it again at another location further up the main water line. The amount taken at both locations is the same, but now those with attached water lines between the new water line and the old water line will have a reduced amount of available water. Thus, the impacts associated with the change of the water line location are redistributed to other reaches of the main water line. The same is true in the Eastern Snake River Plain Aquifer—the impacts associated with diversion and use pursuant to a water right may be redistributed after a transfer of point of diversion or place of use to other reaches of the Snake River and these impacts can amount to an injury. In addition, the nature of the aquifer itself complicates the issue because the effects are almost always delayed to some extent and those effects may propagate at different rates in the aquifer. Simply put, the Transfer Tool's role is to predict the nature and extent of probable impacts to the system. Notice, however, that the Transfer Tool predicts effects or impacts only. It is still up to IDWR to determine whether or not those effects amount to an injury. Presently, it appears that IDWR is equating those predicted impacts within the system to injury. IDWR uses the Transfer Tool to predict quantitative impacts on river flows and impacts within the Eastern Snake River Plain Aquifer. Based on those predictions, IDWR then imposes requirements on those who wish to transfer water rights to mitigate for the predicted effects of the proposed transfer. The mitigation could take several different forms. For example, it could be a reduction in the amount of the water right at the new location, or perhaps a requirement to dry up a certain number of acres, or even acquisition and retirement of other water rights. Differing Viewpoint and Questions There are certainly different views regarding IDWR's use of the Transfer Tool. Generally speaking, those who have surface and spring rights are likely to be supportive of the Transfer Tool's use, while ground water users may not be as enthusiastic. From a surface user's perspective, in the past, not much
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Transfers**Accurate
Prediction?**

was done to manage the reality that ground water and surface water in the Eastern Snake River Plain are interconnected. The Transfer Tool gives IDWR a new tool to use in the management of the entire water resource. From a ground water user's perspective, it may be questioned whether the Transfer Tool can accurately predict impacts on surface flows when many of the aspects of the Transfer Tool are based on hydrological assumptions. In other words, a ground water user is likely to question whether we know enough about the aquifer to ensure that the Transfer Tool has sufficient reliable data to make accurate predictions — particularly in the micro-management effort for which IDWR is utilizing it.

Regardless of water use affiliation, it seems that most believe the Transfer Tool is an important tool that should be further developed so it can accurately answer our questions of how water behaves in the Eastern Snake River Plain Aquifer. However, IDWR's use of the model for mitigation purposes has many ground water users concerned and it raises some interesting legal questions and policy considerations. First, given all of the assumptions made in hydrology in general and in the Transfer Tool itself, is it really the proper tool for determining mitigation, particularly for relatively miniscule amounts for mitigation? Given the fact that the Transfer Tool makes predictions that are so small that they are not capable of being physically confirmed with available measuring technology, should we feel confident in using such predictions for determining a mitigation requirement? Remember that a water right is a real property right. If the mitigation requirement imposed consists of losing a portion of the water right to be transferred, perhaps such a mitigation requirement rises to the level of a "taking."

**Management
Zones**

Secondly, should the entire aquifer be managed as a complete system, or does it make more sense to divide the aquifer into management zones along well-defined geologic barriers that have low transmissivities? In other words, should IDWR be worrying about the effects that a ground water pumper in Ashton has on flows in the Twin Falls reach of the Snake River hundreds of miles away? Should such a small impact predicted by the model be considered an injury? Does it make sense to require mitigation for such a small amount of impact given the complex nature of the aquifer and the assumptions made in the Transfer Tool?

**Mitigation
Impacts**

Thirdly, why is mitigation focused solely on the adverse effects of a transfer? If a water right is transferred, then water right holders in the area from which it is transferred surely benefit from the transfer—should IDWR also account for positive impacts? Lastly, does use the Transfer Tool discourage transfers and thus discourage economic growth in the Eastern Snake River Plain?

Despite these unanswered policy and legal questions, there is no question that the Transfer Tool has impacted water resource management in Idaho. IDWR has a very difficult job in managing Idaho's water resources, especially when considering the ever-increasing demand for water, a resource often in short supply. It is not an enviable position, but IDWR's role is crucial in the management of Idaho's water under Idaho law and the Transfer Tool has made an important contribution to IDWR's efforts.

III. AN ALTERNATIVE APPROACH TO MITIGATION

by Bryce Contor, Idaho Water Resources Research Institute

**Transaction
Cost**

No mechanism currently exists for a transfer applicant to enjoy economic benefit from increased flows created in some river reaches by: a) transferring the point of diversion farther from the reach; and b) reducing the flow rate of the transferred water to create a "no depletion" condition on any reach. The loss of this benefit is an additional transaction cost that can be a deal breaker for projects where water cost is significant. Inhibiting the transfer process may be limiting the economic benefit of appropriated water.

**Groundwater
Bank**

Potentially, a ground water accounting system would allow applicants to deposit and market accruals to river reaches that result from transfer mitigation. This provides economic return for the applicant. In economic terms, the full benefit of the transfer is "internalized" to the decision maker, promoting decisions most beneficial for society as a whole. Depositing excess mitigation also provides a positive balance within the ground water accounting system to accommodate future needs.

Benefits

A ground water accounting or banking system is an integration of hydrologic tools and bookkeeping tools that allows a banking authority or administrative agency to assign ownership to benefits that accrue to the aquifer, and to account for the migration of these benefits through the aquifer and through time (the hydrologic value of deposits is diminished over time as effects naturally propagate from the aquifer to the river). Such a system could facilitate transfers, including temporary transactions for ecological needs. It could also facilitate other aquifer-enhancing activities such as managed recharge and retirement of water rights on marginal lands.

Supplied with a balance of deposited mitigation, a ground water accounting system could expedite transfers by allowing applicants to temporarily lease aquifer credits to satisfy mitigation requirements.

Transfers

Leased Mitigation

Marginal Lands

Matching Needs

The spatial and temporal location of the benefits would already have been quantified when the credits were deposited, so lengthy mitigation analysis would not be necessary. This could potentially reduce transfer processing times from months to weeks. Even when the cost of water is not an issue, the current time delays can be deal breakers. An accounting system would allow projects to move forward with leased mitigation, while permanent mitigation was identified. When permanent mitigation was identified, any excess mitigation at other reaches would be deposited to provide for future transfers by the same or other applicants.

A third mechanism for ground water banking to aid water-right transfers is facilitating retirement of marginal irrigated lands. Some investors purchase farms with high pumping lifts, specifically intending to sell water rights to transfer applicants. A large obstacle to this process is the matching of transfer quantities. The purchased water right almost never exactly matches the sales opportunity, and lack of a central clearing house makes identifying a second transfer applicant (who might just need exactly the “left over” piece) difficult. A banking system would provide a convenient mechanism to combine, divide, and recombine purchased water rights to match prospective water needs. It would also provide access and market information (pillars of any robust market) to a broad spectrum of buyers and sellers.

Although a ground water accounting system can provide these benefits, there are hydrologic, legal, and accounting challenges to overcome. At the present time, the Idaho Water Resources Research Institute and the US Bureau of Reclamation are evaluating these aspects. [For more information please contact Bryce Contor, email: bcontor@if.uidaho.edu]

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IDWR WEBSITE: Additional detailed information regarding Idaho’s transfer policies can be obtained by going to IDWR’s website at www.idwr.state.id.us/water/rights/default.htm and clicking on “Eastern Snake Plain Aquifer (ESPA) Transfer Policies.” This link takes one to a detailed memorandum by IDWR on interim policies and procedures applicable to applications to transfer ground water on the Eastern Snake River Plain.

WATER MARKETING AND TRANSFERS IN TEXAS

by Ronald A. Kaiser, Professor, Texas A&M University

Voluntary Reallocation

Texas, like many western states, has reached a crossroads in the management of its water resources. A rapidly increasing urban population combined with limited or previously allocated surface and ground-water supplies have made the traditional approach of building more reservoirs to satisfy this demand impractical. Water experts and citizens alike suggest that Texas needs to use a variety of means to provide water for this new demand. The state has been transitioning from a practice of building more reservoirs to demand management through water transfers, conservation, reuse and improved management of existing surface and groundwater resources, as a way to increase water availability. This emphasis on water supply management through reallocation is being implemented through changes in law and practice that focus on voluntary water marketing and transfers. Conflicts associated with this new water reality are to be expected as the state transitions from a rural ranching and agricultural heritage and economy to an urban, suburban and service oriented economy.

Some water marketing and transfers will continue under the current regulatory regime—no major overhaul is needed—but the barriers identified in this article require change to facilitate a broader redistribution of water through marketing. This article provides a brief overview of Texas water resources and Texas water laws and regulatory burdens that affect these transfers.

THE TEXAS WATER PICTURE

Texas uses about 16.5 million acre-feet of water annually. Groundwater provides about 60 percent of this water, with rivers and reservoirs the rest. Most of the state's groundwater is used for irrigation while most of the surface water is used by municipalities and by industries. The 2002 State Water Plan, prepared by the Texas Water Development Board, indicates that agricultural irrigation, municipal and manufacturing activities account for 95 percent of all water used in Texas.

Groundwater Resources

Nine major aquifers supply about 97 percent of the groundwater used in the state. Texas aquifers are like droughts; no two are exactly alike. Some aquifers are very rechargeable and can store large volumes of water, while others have little recharge and limited storage. Still others have little recharge but store a large volume of water.

The Ogallala, for example, is a huge aquifer underlying most of the Texas Panhandle that holds water deposited during the ice age. This aquifer supplies two thirds of all the groundwater and more than one third of all the water used in Texas. Water from the southern portion of the aquifer is used to irrigate most of the cotton grown in the state. Due to limited rainfall and to the geology overlying the Ogallala, the Texas portion of the aquifer receives very little natural recharge. In contrast, the Edwards Aquifer, located in an around San Antonio, is a highly rechargeable aquifer subject to rapid drawdowns but it can be quickly replenished by rainfall. [See Frownfelter, TWR #1]

Mining of some aquifers (i.e., where water withdrawal exceeds recharge) is a problem that has long-term economic, environmental and social implications for regions served by the aquifers. This practice is most evident in the Ogallala and Gulf Coast aquifers and those around El Paso in far West Texas. The state has delegated to local groundwater conservation districts the responsibility to prevent mining in the other major aquifers. Groundwater conservation districts are struggling to meet this challenge.

Table1. Water Extraction and Recharge Rates from Nine Major Aquifers in Texas*

AQUIFERS	1996 Estimated Pumping (Million Acre Feet)	1996 Estimated Recharge (Million Acre Feet)
Ogallala	6.22	0.30
Edwards (Balcones)	0.47	0.44
Edwards-Trinity	0.25	0.78
Carrizo-Wilcox	0.49	0.64
Trinity	0.19	0.10
Gulf Coast	1.15	1.23
Bolsons	0.39	0.43
TOTAL	9.16	3.92

* Source: Mary Sanger and Cyrus Reed. 2000. *Texas Environmental Almanac 2nd Edition* (Texas Center for Policy Studies, Austin: University of Texas Press).

Aquifer Characteristics

"Mining"

Texas

Irrigation
Decline

Factors

Reservoirs

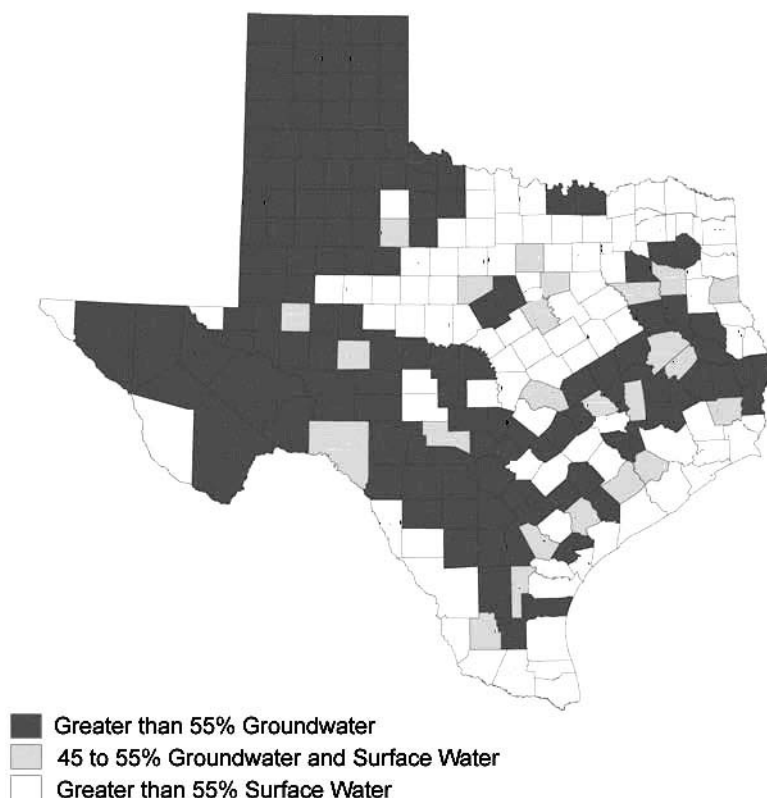
Uses of Groundwater

Statewide, irrigated agriculture is the largest single consumer of groundwater. About 80 percent of Texas' groundwater is used to irrigate nearly seven million acres of land — mostly in the Texas Panhandle, the Lower Rio Grande Valley and around San Antonio. Six crops comprise about three quarters of the irrigated acreage in Texas. Cotton growing is the king of irrigation in Texas, utilizing about one third of Texas' irrigation water. Other irrigated crops include wheat, corn, sorghum, rice and vegetables.

Irrigation water use is on the decline in Texas. From an all time high of 13 million acre-feet of water used in 1974, irrigation water use has declined to about 9.6 million acre-feet in 2000—a decline of about 20 percent. According to the 2002 State Water Plan prepared by the Texas Water Development Board, irrigation water demand will continue to decline between 10-15 percent over the next 50 years. Most of the decline in agricultural use can be attributed to the declining aquifer availability due to excessive pumping by irrigators, increased pumping costs, improved irrigation efficiencies, shifts in market demand for agricultural commodities, voluntary transfers of water from irrigation to municipal use, and the decline in cheap water for agriculture.

Groundwater use is ubiquitous in Texas. Most of the arid western part of the state and a significant part of east Texas rely on groundwater for municipal and manufacturing uses (see *Figure 1*). A number of large and small Texas cities also rely on groundwater including Amarillo, College Station, El Paso, Lubbock, Houston, and San Antonio. About 20 percent of all groundwater is used for municipal and manufacturing purposes.

Figure 1. Surface and Groundwater Use by County in 1999*



* **Source:** Texas Water Development Board, *Water for Texas—2002*, (TWDB, Austin, Texas) p. 39.

Surface Water Resources

Rain doesn't fall in a uniform fashion across Texas. East Texas rivers and watersheds receive the greatest amount of rainfall, averaging between 35 and 50 inches per year. Not surprisingly, many of Texas' major reservoirs are located on these rivers. Central Texas rivers, including the Brazos, Colorado, Guadalupe and Lavaca/Navidad, traverse a drier part of the state and rainfall in these watershed averages between 15-35 inches per year. Rivers of the Texas Panhandle, of Deep South and Far West Texas flow through some of the driest parts of the state with rainfall averages on parts of these rivers averaging between 4-15 inches per year. Reduced rainfall and higher evaporation rates in portions of Texas west of a line from San Antonio to Wichita Falls make reservoir development less certain and reliable.

Texas

Surface Water
UsesSwitch to
Surface Water

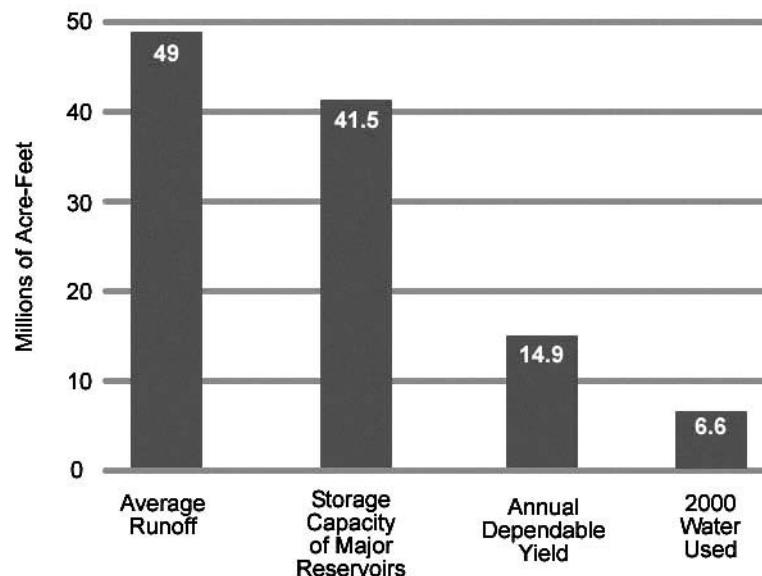
Growing Uses

Water Purchases

Texas has an estimated 6,700 ponds, tanks and reservoirs that capture and hold rainfall runoff. However, most of the water is stored in just 211 major reservoirs located in the central or eastern portions of the state. These major reservoirs contain approximately 14.9 million acre-feet of firm, dependable, even-in-drought yield — but they have a capacity to store up to 41.5 million acre-feet of water under wet conditions. Interestingly, about half (49 percent) of this dependable yield is held in reservoirs in just three rivers—the Trinity, Neches and Sabine. Although the dependable yield of Texas' reservoirs is 14.9 million acre-feet/year, the State only used about 6.6 million acre-feet in 2000 (see *Figure 2*). Infrastructure and pipeline limitations prevent the full use of reservoir storage in Texas.

Most of Texas' surface water—about 65 percent—is used by cities and industry. The remaining 35 percent is used for irrigation, steam-electric power generation, mining, and livestock production. The north central part of Texas, the Gulf Coast areas and the Lower Rio Grande Valley rely primarily on surface water resources (see *Figure 2*). Except for San Antonio, a number of larger cities are converting to surface water or mixing groundwater with surface water. For example, Houston and many communities in Harris and Ft. Bend counties are gradually switching from ground to surface water to minimize subsidence problems.

Figure 2. Surface Water Storage, Supply and Use in 2000*



* **Source:** Texas Water Development Board, *Water for Texas—2002*, (TWDB, Austin, Texas).

According to the 1997 and 2002 State Water Plans, municipal and manufacturing are the fastest growing use categories and will be for the next 25 years. The 2002 Texas Water Plan predicts that municipal demand will increase to about 7.6 million acre-feet annually, an increase of 67 percent over current use. By 2030, municipal water use is expected to exceed agricultural water use. Manufacturing water demand is projected to increase by some 47 percent from 1.8 million acre-feet in 2000 to 2.66 million acre-feet in 2050.

OPPORTUNITIES FOR WATER MARKETING

As much of the surface water of the state is fully appropriated and will barely be sufficient to meet water demands during recurring drought periods, Texas must seek other means to develop water supplies. As an alternative to building more reservoirs, a number of cities are seeking to purchase water from other users. Voluntary transfers and water marketing will play an important economic, political and social role in redistributing scarce water to meet changing demands.

Drivers for Water Marketing: Population Growth and Limited Supplies

While many rural communities and small cities are growing, census data indicates that most of Texas' population growth has occurred, and will continue to occur, in the major urban centers of the state. The urban areas and growth corridors with the greatest projected water demand are in the greater Austin, Dallas, El Paso, Houston and San Antonio metropolitan areas. Significant increases in municipal water demand will also occur in the Lower Rio Grande Valley.

Texas**Historic
Options**

Historically, water has been obtained through: 1) appropriating surface water rights in rivers where no previous claim to water has been made; 2) constructing reservoirs to capture and store water; 3) groundwater transfers; and 4) surface water transfers. The first two options have limited feasibility today. Most of the rivers in Texas are fully appropriated and there is little water available to fill new reservoirs. The economic, environmental and political difficulty encountered in building reservoirs limits this option. Plus, most favorable reservoir sites have already been developed and those that remain have numerous development constraints. Both the 1997 and 2002 State Water Plans recognized the viability of surface and groundwater transfers and conveyances as a way to meet projected water demands.

Ag to Muni

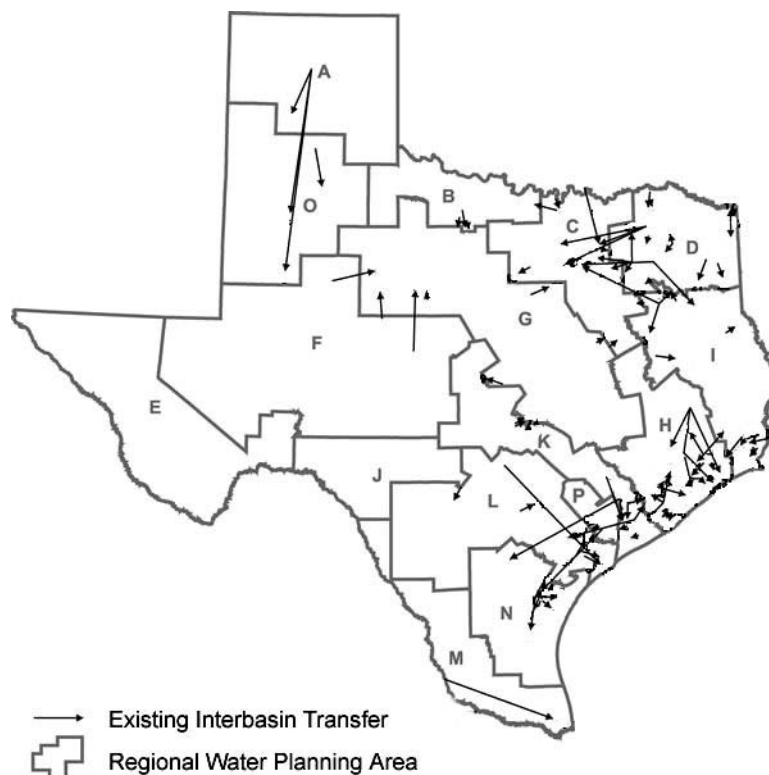
Cities are looking to rural areas and to agriculture to meet the water needs of this growing population. Some of this water will be supplied by reallocating water from existing agricultural uses to municipal and industrial uses through water marketing. Water transfer and marketing exists throughout the state. This practice is not limited to Houston, Dallas or San Antonio. It is occurring in the Texas Panhandle, Far West Texas, the Lower Rio Grande Valley and the Hill Country. Amarillo, Lubbock and nine other Panhandle cities have drilled water wells in rural areas and are piping this water to their city customers. There are proposals to pump groundwater from ranches and farms in West Texas to El Paso, and the General Land Office is also considering leasing groundwater under state lands.

GW Leasing?**History of Texas Water Transfers**

Texas has a long history of transferring and marketing both surface and groundwater. Quite simply, Texas could not have grown and developed without transferring water from areas of surplus to areas of scarcity. Most transfers take place within a watershed. However, a number of transfers occur between river basins (see *Figure 3*). About 100 such transfers have taken place over the years in all areas of the state with the exception of Far West Texas.

Water Brokers

The Texas legislature has established water supply institutions and agencies for the purposes of marketing and transferring water. Texas river authorities are a classic example of marketing and transfers institutions. Although they have other water management tasks, river authorities are major water brokers, wholesalers and retailers. Farmers and ranchers, cities, industries and other water supply agencies are included in their customer-base. For example, the Sabine River Authority holds the surface water rights permit to Lake Tawakoni and it sells a portion of this water to the city of Dallas.

Figure 3. Existing Interbasin Transfers in Texas*

*Source: Texas Water Development Board, *Water for Texas—2002*, (TWDB, Austin) p. 56.

Texas

Citizen-Based
PlanningTransfer
Estimates

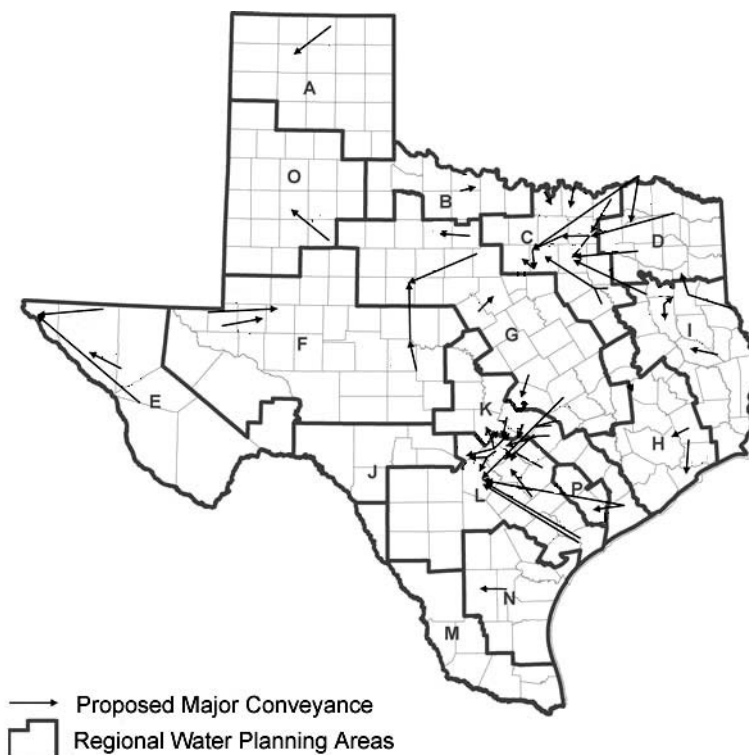
Transfers Proposed by Regional Planning Groups

In 1997, Texas changed its approach to state water planning. Instead of relying on technical water planners to prepare state water plans, the legislature directed the Texas Water Development Board to establish citizen-based regional planning groups to prepare regional plans that would be consolidated into a state plan. The 2002 Texas Water Plan is based on the regional planning group process.

Regional water planning groups have embraced water transfers and marketing as part of their plan to meet local water needs. On a statewide basis, water marketing was given high feasibility rankings by regional water planning officials and they have reflected this priority in their plans. Fourteen of the 16 planning regions proposed a total of 53 transfer projects (see *Figure 4*). Only the Lower Rio Grande Valley did not propose a transfer project.

The 2002 State Water Plan suggests that up to 2.4 million acre-feet of surface and groundwater will be voluntarily reallocated from primarily irrigation and agricultural water uses to municipal and industrial uses. To put this in perspective, this is about one-third of the current total surface water and one quarter of the current groundwater use. These proposals clearly show that water marketing will be a big part of Texas' water future.

Figure 4. Transfers Proposed by Regional Water Planning Groups*



*Source: Texas Water Development Board, Water for Texas—2002, (TWDB, Austin) p. 77

SURFACE WATER LAW AND WATER MARKETING

Surface water belongs to the state of Texas and the right to use this water is granted through a state permit system known as the Prior Appropriation Doctrine (see generally chapter 11 of the Texas Water Code (TWC)). The Texas Commission on Environmental Quality (TCEQ) is the state agency responsible for administering this water law system.

IN TEXAS, SURFACE WATER TRANSFERS TAKE ONE OF THREE BASIC FORMS:

- 1) Sale of the permanent water right. This transaction involves the permanent transfer of the water rights permit issued by the state. An example of this type of transaction involved the 2002 sale by the Garwood Irrigation Company of its state-issued water rights permit to the Lower Colorado River Authority. This water right permit was for 133,000 acre-feet of water per year and it had a 1900 priority date, the most senior water right in the Texas Colorado River Basin. The Lower Colorado River Authority purchased the 1900 permit for an estimated \$75 million.

Transfer Forms

Texas Leases Contracts Fundamentals Transfer Process Transaction Costs "Four Corners"	2) Lease of the water right permit. This is a short- or long-term transfer of a water right from a seller to a purchaser. The underlying permit is not sold and at the end of the lease period the right to the water reverts back to the lessor/seller. This transaction is most apropos for acquiring water on a 5-50 year time period. 3) Wholesale contract for water. In this most common type of transaction, the holder of the water permit contracts to sell water to a purchaser, usually a city for a fixed term of years. Typically, river authorities and water districts, as holders of significant water rights, are major players in wholesale water contracts. Acquiring a Water Permit by Appropriation or Transfer In order to divert, use, store or transfer state water, a permit must be obtained from the TCEQ. A water right holder does not have title to the water but only has a state license to use and enjoy the water. This permit is a vested property right that entitles the appropriator to certain protection against termination, loss, or infringement. Seniority Rule Seniority is the linchpin of the Prior Appropriation Doctrine. The principle of "first in time, first in right" determines the allocation of water in times of shortage. The priority date is established when the complete application is filed with the TCEQ. When there is an adequate supply of water the seniority rule is seldom used, but when shortages occur seniority determines who gets the water. Quantified Amount of Water Under the appropriation system a permit holder is entitled to a measured flow and/or volume of water. This provision, along with the priority rule, provides an incentive for senior appropriators to invest in a diversion that assures them of a fixed water supply. The quantity is not absolutely guaranteed but is limited to the amount of water beneficially used (TWC §11.025.) Transferability As a vested property right, a water permit is transferable to other users or uses. This feature allows for marketing of water rights. All transfers require approval by the TCEQ; however, transfers resulting in minimal changes may be granted without notice or a contested case hearing (TWC §11.122.) Cancellation and Loss of Water Rights "Use it or lose it" is a guiding requirement of Texas surface water law. Even though a water right is considered a vested property right, the Texas Supreme Court has ruled that this right can be lost if water is not used for a 10-year period (codified in TWC §11.173). It is generally accepted that the TCEQ has the authority to institute an action to cancel a water right. However, the action is rife with political repercussions and as a practical matter, TCEQ has not aggressively sought to cancel water rights. BARRIERS TO MARKETING SURFACE WATER Surface water transfers involving a sale, transfer or lease of a water right must be approved by the TCEQ through a permit amendment process (TWC §11.122). Generally, wholesale water contracts only require a "rate setting review" by the TCEQ and not an approval of the basic contract. While there are important legal and practical distinctions between the type and form of the transfer, TCEQ approval is required for transfers involving a change in the: 1) place and purpose of water use; 2) amount of use; 3) point, method and rate of diversion; or 4) location at which surplus water is returned to the stream. The type and level of TCEQ administrative review and approval of proposed water transfers can directly impact water marketing by increasing transfer transaction costs. Contested Case Hearings on Transfers of Unused Water Many Texas water rights holders do not use their full permitted amount of water. In order to encourage marketing of this unused water the Texas legislature enacted a statute known as the "four corners doctrine" (TWC §11.122(b)). This provision allowed the TCEQ to approve a transfer amendment for unused water without holding a contested case hearing, if the transfer would not increase the adverse impacts other water rights holders. The "four corners doctrine" is under challenge by other water rights holders in a case involving the City of Marshall's plan to sell the unused portion of its water to a power plant (<i>City of Marshall, et al v. City of Uncertain</i>, 124 SW3d 690 (2003)). The City used less than one-half of its 16,000 acre-feet permit and was not proposing to increase the amount of water authorized but only to sell its unused water. The TCEQ approved the request without granting the appellees a contested case hearing. The trial and appeals court reversed this decision and remanded the case to the TCEQ to provide a contested case hearing. This case is currently on appeal before the Texas Supreme Court. There is strong support for explicitly authorizing a transfer of the entire amount, or any portion, of a water right without a contested case hearing if the TCEQ finds that the transfer does not cause an unrea-
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Texas No-Injury Proposed Change Interbasin "Junior Rights" Rule Rule of Capture Landowner Rights Sale or Lease	sonable adverse impact on other water rights holders, or on the environment. This action would encourage water rights holders to sell surplus water rather than facing the risk of a cancellation proceeding. No contested case hearing would be granted unless the TCEQ determined that possible adverse impacts could result from the transfers. No-Injury Rule The TWC provides that a water rights application may not be granted if it would impair existing water rights (TWC §11.134(b) (3) (B)). The TCEQ follows the no-injury rule in reviewing and approving transfer amendments to existing permits. Water transfers involving a change in place, purpose, time of use, or point of diversion are allowed under the TWC and TCEQ rules, subject to the condition that the changes not impair existing water uses. Transfers may not be granted if they will cause an injury to other existing water rights. The requirement of "no injury" protects the <i>status quo</i> and is a major barrier to changing water uses based on changing conditions. Supporters of water marketing posit that the "no injury rule" is a major barrier to transfers and suggest that Texas law should be changed from a "no injury" standard to a "no unreasonable injury" standard. Criteria to determine "unreasonable injury" could include standards from the Restatement Second of Torts such as the: 1) purpose of each use; 2) economic and social value of each use; 3) the type and amount of measurable harm that may be caused by the transfer; and 4) the protection of investments and property rights. Interbasin Transfers and the Junior Rights Rule Texas law has long permitted interbasin transfers while at the same time protecting the rights of water holders in the basin of origin. Over the years, nearly 100 inter-basin transfers have been authorized in areas concentrated in the Panhandle, Northeast Texas and along the Gulf Coast (see <i>Figure 3</i>). These transfers allowed for the marketing of water provided there was no significant injury to water rights holders in the basin of origin. It was clearly the public policy of the state to allow for the marketing and transfer of water from an area of the state with surplus water to an area with a shortage and a need. In 1997, the TWC was amended to discourage interbasin transfers with the insertion of the junior rights rule. Codified as TWC § 11.085(s), this rule requires that any proposed transfer of all or a portion of a water right out of the basin loses its seniority and becomes junior to other rights in the basin. The practical effect of this rule is to reduce the reliability of a surface water right during times of drought, which discourages the marketing of water. While some claim that the rule has protected water in rural areas from the "thirst of growing cities" — this is questionable. In order to provide a reliable source of water to meet residential, commercial and manufacturing needs a number of cities are turning to groundwater. Because most of the groundwater resources are in rural areas, the junior right rule has exacerbated rural and urban tensions over water developments, transfers and markets. Clearly, the junior rights rule has served as a significant obstacle to solving the Texas water supply puzzle. GROUNDWATER LAW AND WATER MARKETING Texas treats groundwater differently than surface water. Groundwater is considered the private property of the landowner when it is reduced to possession and control (<i>Houston & T.C. Ry Co. v. East</i>, 81 S.W. 279 (Tex.1904); <i>Sipriano v. Great Spring Waters of America, Inc.</i>, 1 SW2d 75 (Tex. 1999)). Up until that point, the landowner only has a right to drill a well and a right to try and capture the water. From a legal perspective this "rule of capture" is simple and straightforward. Landowners have the legal right to capture and pump unlimited quantities of water beneath their land, without liability to surrounding landowners. In a practical sense, the surface owner does not own the water but only has a right to pump and capture whatever water is available, regardless of the effect on neighboring wells. [See Frownfelter, TWR #1] Three Landowner Rights Under the Capture Rule A landowner has three rights under the capture rule. One is the access right of the landowner to capture groundwater, the second is the ownership right to the water withdrawn and brought to the surface, and the third is the right of sales (<i>Evans v. Ropte</i>, 96 S.W.2d 973 (Tex. 1936)). All three rights are freely alienable and transferable. Landowners may exercise the right of capture, or sell, lease or assign this right to another. Once assigned, any water captured under the right may be sold and transported off the land, or transferred outside the boundaries of the aquifer (<i>City of Corpus Christi v. Pleasanton</i>, 276 S.W.2d 798 (Tex. 1955)). Capture Rule Not A Barrier to Groundwater Marketing Under the capture rule, groundwater can be freely purchased and sold by private parties and public agencies. A permit may be needed only if the pumping is to take place within the boundaries of a local groundwater conservation district. Landowners may sell groundwater for off-site use either by selling the water itself or by executing a lease to allow a lessor to install and operate pumps on the landowner's property.
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Texas Quantity Available No Barrier Protections Innovative Transactions GW Regulation GCD Authority	The legal and hydrological barriers to marketing groundwater do not constrain the seller as much as they do the purchaser. The capture rule does not guarantee that a specific measurable amount of water can be sold. It only provides that the amount of water which can be physically captured by the owner can be sold. Thus, the amount of water that can be marketed is highly variable. A seller of groundwater can only convey to the buyer that amount of water that can be captured. This creates a <i>caveat emptor</i> (i.e., buyer beware) rule since a seller of groundwater cannot provide assurances to the buyer of an exclusive right to a fixed amount of water, nor can a buyer prevent seizure [capture] of the purchased water by an adjacent landowner. The capture rule has not hindered groundwater transfers, as evidenced by the large-scale public and private groundwater transfers proposals that have surfaced around the state. These proposals provide insight in ways to address the lack of a “well-defined and enforceable property right” to a certain and measurable amount of groundwater. While these proposals have engendered interest group (i.e., urban versus rural, agricultural versus urban), regional, and political controversy, they illustrate that the capture rule has not been a major barrier to large-scale groundwater transactions. Given the increases in municipal water demand and changing economic conditions in Texas, it appears that the capture rule is not a barrier to reallocating water to these new needs. Marketing Projects Under the Capture Rule Size matters in overcoming the limitations of the capture rule in groundwater marketing. By consolidating water rights over large tracts of land, purchasers protected themselves from well interference and depletion by other users. Landowners have also developed various business arrangements for the purposes of marketing groundwater. Among the more common forms are landowner partnership, cooperatives and private corporations. All are predicated on amassing a significant quantity of water so as to satisfy the private property rights component necessary for good markets. These relationships, by private agreement, provide for quantifying the amount of water to be produced, monitoring pumping, and transferring the water to the purchaser, thus satisfying the property rights component of marketing. SOME INNOVATIVE TRANSACTIONS INCLUDE: • The City of Amarillo purchased rights to pump from 72,000 acres of land in Roberts County and will build a pipeline to transport the water to the city. • The City of El Paso purchased rights to pump from 76,000 acres of land in Hudspeth, Valentine and Van Horn counties and is negotiating for pumping rights on an additional 25,000 acres. These purchases are to provide a future water supply. • The Canadian River Municipal Water Authority purchased rights to pump from 43,000 acres of land in order to supply water to 11 cities in the Texas Panhandle. • The City of San Antonio has a contract with Alcoa to pump and transfer 55,000 acre-feet of groundwater from Lee and Milam counties. • Mesa Water—a landowner partnership originated by T. Boone Pickens—has amassed 150,000 acres of land in Roberts County and is seeking a purchaser for this groundwater. • Brazos Valley Water Alliance—a landowner cooperative—has accumulated 133,000 acres of land in Brazos, Robertson, Burleson and Milam counties and is seeking a purchaser for their water. • Carrizo-Wilcox Water Alliance (formerly Metropolitan Water Corporation) has acquired rights to pump from about 33,000 acres in Burleson, Lee and Milam counties and is seeking to build a pipeline to furnish water to a customer. • Rio Nuevo, Ltd. seeks to lease groundwater pumping rights on about 350,000 acres of state lands in west Texas. These lands are administered by the General Land Office. • Water Texas—a private firm—is working with landowners in Kinney, Lee and Milam counties to obtain groundwater pumping rights. Local Groundwater Districts Facilitate and Restrict Water Marketing The Texas legislature established local groundwater conservation districts (GCDs) to regulate groundwater and has indicated continued preference for this system. There are 88 GCDs managing about 89 percent of the State’s groundwater. About half of these GCDs were created in the last 10 years. Supporters contend that GCDs are locally controlled and best suited to consider local needs when developing management plans. Critics counter that GCDs do not have the funds to develop meaningful regulations, have not prevented over pumping and mining of groundwater, have not made decisions based on sound science but rather on the politics of the moment, do not want to regulate their neighbors, and do not encourage meaningful water conservation. TWC CHAPTER 36 GRANTS GCDs THE AUTHORITY TO: • preserve, conserve and protect the aquifer • regulate well spacing and production
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Texas

- minimize the reduction of artesian pressure
- permit and register wells
- keep drilling and well records
- buy, sell, transport and distribute water
- conduct surveys and research on aquifers and pumping
- engage in aquifer recharge and recovery
- require a permit for water transfers
- levy taxes and/or pumping fees

Permit

Certain wells are exempt from groundwater district regulations and others may be exempted from regulation under grandfathering provisions. While the Texas Supreme Court has sustained the authority of groundwater conservation districts to regulate groundwater they have not precluded challenges to district rules, nor to landowner claims of “taking” of private property.

Facilitation of Water Transfers

A GCD can facilitate water transfers by establishing, through a permit system, a landowner’s private property right to a quantified amount of water. When a landowner receives a permit to pump a certain amount of water they have the legal right to this water. So in a round-about way, a GCD regulation can facilitate a water market by establishing through the permit, a property right to the water.

Restrictions on Water Transfers

It is axiomatic to water marketing that groundwater rights must be fully transferable to all types of uses, users and locations. Placing restrictions on the transferability of these rights will impede the efficiency and effectiveness of water markets.

Impediments

GCDs impede the groundwater transfers by limiting the amount of water that a landowner can export and by imposing export fees on the water transferred (TWC §36.122). Although a GCD may not absolutely prohibit water exportation, they may limit the amount of water that can be marketed and exported. One way GCDs can impede transfers is by intruding into the affairs of another governmental entity by inquiring as to their need for water (TWC §36.122(f)(1)). GCDs can limit private property rights and water transfers by finding that an importing area does not need the water and use this as a basis for limiting exports.

Exportation Fees

Another GCD limitation that constrains water transfers is the exportation fee that may be imposed for water transported outside district boundaries. Interestingly, water transferred within the boundaries of a GCD is not subject to these fees. These export fees can limit transfers by increasing transactions costs to the point that the transfer is no longer economically feasible.

CONCLUSIONS

The reallocation of surface and groundwater through voluntary transfers and water marketing is one way to meet future Texas water demands. Although transfers are allowed in the current Texas regulatory regime, a number of reforms are needed in order to further encourage and improve voluntary transfers of surface and groundwater in Texas. These reforms would primarily address needed changes in regulatory burdens imposed in surface and groundwater law and are intended to foster water transfers, protect private property rights, and improve groundwater management related to markets. Removal of the barriers to water marketing will encourage private investments in water development and lead to more efficient water redistribution.

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Ronald A. Kaiser is professor of water law and policy at Texas A&M University. He has appointments in the Texas Water Resources Institute, the Institute of Renewable Natural Resources and the Department of Recreation, Park and Tourism Sciences. He also has an appointment in the Department of Marine Science at Texas A&M University at Galveston. Professor Kaiser is currently serving as the chair of the Texas A&M University intercollegiate water faculty and is working on establishing a masters and doctoral degree program in water management and hydrological science at Texas A&M University. He holds a bachelors and masters degree from Michigan State University in resource economics and law degrees from Thomas Cooley Law School and the University of California at Berkeley. His research focuses on water rights, water marketing, environmental flows and groundwater management. A number of his recommendations on water marketing have been incorporated into Texas surface water law.

Website: Professor Kaiser has published a number of journal articles on water marketing in addition to that appearing above. Prior articles can be obtained in a PDF format at <http://texaswater.tamu.edu>

COLORADO McCARRAN AMENDMENT RULING

FEDERAL RESERVED RIGHTS - AMENDMENT OF INSTREAM CLAIMS - FEDERAL LAWSUIT TO PROCEED
by David Moon, Editor

Settlement

Colorado's Supreme Court (State Supreme Court) on November 8 upheld a stay issued by the State of Colorado's (State's) water court that allows environmental groups to proceed with a lawsuit in federal court concerning a negotiated water settlement agreement. The agreement settled a dispute over federal reserved instream water right claims for the Gunnison River in the Black Canyon of Gunnison National Park. This determination of federal rights in the Gunnison River will impact the amount of water available for agriculture, municipalities and industry in the State's fast-growing Front Range region.

Amendment of Claims

In 2001, the National Park Service filed an application to quantify its conditional water rights for the Black Canyon of the Gunnison River (federal "reserved" water rights) as part of a nearly thirty-year long case. State officials objected and eventually federal authorities agreed to lower the amount of water claimed and began negotiating specifics of the agreement with State officials. When the United States (US) significantly decreased the amount of water requested by amending its previously submitted claims, several environmental groups sued the US in federal court, contesting the administrative decision making process that led the US to reduce its claims. The plaintiffs asked the federal court for the District of Colorado to issue an order "securing river flows for the Black Canyon in quantities and with the frequencies necessary to...serve the purposes for which the Black Canyon was reserved."

Instream Claims

In 2001, the US claimed year round base flows of 300 cubic feet per second (cfs) and higher peak and shoulder flows tied to expected natural spring runoff (up to an additional 10,000 cfs). On April 2, 2003, the US and the State entered into an agreement whereby the US relinquished its reserved right to peak and shoulder flows, and claimed a year round base flow of the lesser of 300 cfs instream or natural flow. On July 31, 2003, the US and the State entered into a further Memorandum of Agreement (MOA) wherein the US delegated the appropriation of peak and shoulder flows to the State Water Conservation Board's instream flow program, and agreed to a 2003 priority date for these water rights.

Stay Request

Environmental groups asked the State water court for a stay blocking the negotiations while their federal lawsuit was heard, contending that the federal case presents distinct claims over which the federal court has exclusive jurisdiction and that the need for the stay outweighs any prejudice to the petitioners.

Challenge

The State's water court issued the stay, ordering state and federal authorities to stop negotiating specifics of the agreement until the federal lawsuit is completed. Petitioners to the State Supreme Court — composed of state officials and some private water users — challenged the water court's grant of the stay as an abdication of its jurisdiction and argued that the stay substantially and irreparably harms their ability to litigate the merits of the case. The US also opposed the stay, contending it was inappropriate because the federal litigation would not resolve all issues pending in the water court and because the environmental groups were unable to show a pressing need for the stay.

Holding

By a five-to-two vote, the State Supreme Court opinion authored by Chief Justice Mullarkey refused to overturn the stay, framing the issue as "whether the McCarran Amendment's waiver of sovereign immunity is so broad that it allows state courts to evaluate and adjudicate federal agencies' decision making processes related to the quantification application." The Court held that the State water court's grant of the stay for a relatively brief period of time, pending resolution of a federal court proceeding, was not an abuse of discretion where the federal claims will not affect the water court's ability to quantify the federal reserved water right.

McCarran Amendment

The State Supreme Court noted that the scope of the waiver of sovereign immunity contained in the federal McCarran Amendment, 43 U.S.C. § 666 (2004), is not broad enough to allow state courts to evaluate or adjudicate the federal administrative law issues: "The McCarran Amendment does not assert or imply that a state court would have jurisdiction to review the decision making process of federal entities, such as Interior or the Park Service, for compliance with federal law." The Court also relied on the federal Administrative Procedures Act, citing 5 U.S.C. § 706(1) for the rule that a reviewing court shall "compel agency action unlawfully withheld or unreasonably delayed." Justice Mullarkey's opinion stated that "...the waiver of sovereign immunity is expressly limited to federal court," citing 5 U.S.C. § 702 and *Aminoil USA v. Calif. State Water Res. Control Bd.*, 674 F.2d 1227, 1233 (9th Cir. 1982). The majority concluded that the "federal case will decide whether the United States' amended application complied with applicable federal law, and the state case will quantify the reserved water right."

Dissent

The State Supreme Court's foremost water expert, Justice Gregory Hobbs, authored the dissent. Justice Hobbs noted: "Neither state nor federal courts have exclusive jurisdiction over the issues involved in either action, but the McCarran Amendment highly favors deferral of the federal action to the ongoing state case. In my view, the plaintiffs' federal court litigation results in a piecemeal approach to the

Colorado Decision

State Authority

quantification and administration issues properly before the water court, the very result Congress sought to avoid by adopting the McCarran Amendment.”

Justice Hobbs referred to the “...comprehensive nature of the authority granted by the McCarran Amendment” as delineated by the “Colorado trilogy” of US Supreme Court cases: *Colorado River Water Conservation District v. United States*, 424 U.S. 800 (1976); *United States v. District Court in and for Water Division No. 5*, 401 U.S. 527 (1971); and *United States v. District Court in and for Eagle County*, 401 U.S. 520 (1971). Justice Hobbs then wrote, “Colorado prevailed in its view that the overarching congressional policy, upon proper joinder of the United States, was that all issues of law and procedure in such cases would be determined by the state courts, subject to review by the United States Supreme Court...Through the McCarran Amendment, Congress intended ‘to promote certainty in water allocation by subjecting undeclared and unquantified federal water rights to state adjudication.’” *United States v. Bell*, 724 P.2d 631, 642 (Colo. 1986).

Amendment of Claims

Hobbs’ dissent discussed the amendment of the US’ previously submitted claims, citing the Colorado Supreme Court’s earlier opinion in *Bell*. In that opinion, the State Supreme Court cited Colorado Rules of Civil Procedure 15(a), which provides that after a responsive pleading is filed, pleadings may be amended by a party only by consent of the adverse party or by leave of court, but that such “leave shall be freely given when justice so requires.” The State Supreme Court went on to hold that the “decision to grant an amendment is within the trial court’s discretion. We have interpreted C.R.C.P 15(a) liberally in allowing amendments.” *Bell* at 637. In his dissent, Justice Hobbs then tied in the current decision regarding claim amendments with the McCarran Amendment’s grant of authority, stating, “In *Bell*, we upheld the water court’s refusal to allow the United States to amend its late noticed claim under C.R.C.P. 15, because the ‘McCarran Amendment’s effect was to place federal reserved rights within the state adjudication system’ and ‘certainty provided by adjudication of the United States’ reserved rights through joining the United States in state court water adjudications would be destroyed.’ 724 P.2d at 645.”

Federal Exclusivity

Justice Hobbs further explained his view that the water court’s stay should have been vacated: “In my view, plaintiffs are wrong in their federal court exclusivity contention. Although the claims in the federal suit are styled as Administrative Procedure Act claims, which is normally an area of exclusive federal jurisdiction, in essence they challenge the exercise and scope of discretion in federal agencies administering their water rights under state and federal law. The water court has authority under the McCarran Amendment, a special statutory proceeding established by Congress to which federal officers and agencies are subject, to decide all factual and legal issues involved in the motion to amend and the administration agreement. This authority includes review of the decision making of those officers and agencies regarding the motion to amend and the administration agreement.”

Nature of Water Rights

The interrelationship of all water rights within an adjudication and the mixed nature of law and fact also influenced Hobbs’ view of the overriding authority of the State water court. “The integration of federal rights into the network of highly interdependent relative priorities for the use of water on common stream systems is the ultimate purpose of the McCarran adjudication. See *City and County of Denver I*, 656 P.2d at 20. Necessarily, the quantification and administration of the Black Canyon reserved water right is fact-specific. It involves mixed questions of fact and law and issues regarding, for example, congressional intent in approving construction of the federal Aspinall Unit of the Colorado River Storage Project in 1956... At least, the water court should have the opportunity to address and decide this issue.”

Mixed Law and Fact

The dissent also contained an interesting discussion regarding settlement of water rights in the large, state adjudications throughout the West, observing, “Third, the law favors settlements in these complex proceedings by state and federal parties owning rights to waters of the same stream. Across the United States, complex stream adjudications are underway to determine federal and state-law based claims of federal, state, and local governmental agencies and private parties. For example, Idaho’s Snake River adjudication addresses 185,000 claims for water rights. See John E. Thorson, “State Watershed Adjudications: Approaches and Alternatives,” in 42 Rocky Mt. Min. L. Inst. § 22.05(3) (1996). Settlement and accommodation of multiple interests can often promote both environmental and water user interests. The setting of quantification amounts in an implied reserved water rights case is not an exact science. Expensive and conflicting expert testimony is often necessary. The legal standard operable at trial allows quantification of only the minimum amount of water necessary to carry out the purposes of the federal reservation...All of these considerations, together with the uncertainty and expense of prolonged litigation, promote settlement.”

Settlements Favored

FOR ADDITIONAL INFORMATION:

Colorado Bar website: The full Colorado Supreme Court opinion (*In re Application for Water Rights of United States of America: U.S.A. v. Colorado State Engineer*, No. 03SA321) can be viewed at the website of the Colorado Bar: www.cobar.org/opinions/opinion.cfm?OpinionID=4870

WATER BRIEFS

**WATER SUPPLY INITIATIVE CO
COMPREHENSIVE STUDY**

A broad new study prepared for the State of Colorado — the “*State-wide Water Supply Initiative*” (SWSI) — provides a “collaborative assessment of future water supply needs and solutions.” The \$2.8 million study, presented to the Colorado Water Conservation Board by the engineering firm CDM, is self-described as the State’s “most far-reaching and comprehensive effort ever undertaken to understand our state’s water supplies as well as the state’s existing and future water demands.” The study was designed to examine projected demands through the year 2030 and the range of potential options to meet Colorado’s needs.

The SWSI estimates that 2.8 million more people are expected to live in Colorado by 2030 (2.4 million along the Front Range). The SWSI concludes that: “Conservation will play an important role, but conservation alone cannot meet all these requirements. New storage projects will be needed and must be pursued, but...their success is uncertain.” Recognizing that “water has long been a divisive issue in the West,” SWSI established certain “ground rules” from which the study proceeded. These ground rules included: reliance on local authority and control; commitment to a bottom-up (not top-down) approach; a commitment to explore all solutions; and adherence to Colorado’s Prior Appropriation Doctrine. As the SWSI progressed, two additional ground rules were developed: the study would not address transbasin diversion issues (to be studied later) and “SWSI would not judge or evaluate the merits or likelihood of success of any of the projects or processes being pursued at the local level.”

For info: An Executive Summary and the full report are available at the Colorado Water Conservation Board’s website: www.cwcb.state.co.us/SWSI/Report/Exec%20Summary_11-15-04.pdf

**CALIFORNIA DWR
WATER USE EFFICIENCY**

CA

The California Department of Water Resources (CDWR) has released its Proposition 50 Water Use Efficiency Proposal Solicitation Package (PSP). This grant program implements Chapter 7(g) of the State’s Proposition 50, the Water Security, Clean Drinking Water, Coastal and Beach Protection Act of 2002, which authorizes CDWR to administer a \$120 million agricultural and urban water conservation program. The program provides grants for water use efficiency implementation projects as well as research and development, feasibility studies, pilot, and demonstration projects.

For info: CDWR website:
www.owue.water.ca.gov/finance/

**CANAL EASEMENT
FEDERAL LAWSUIT**

OR

The Swalley Irrigation District (SID) near Bend, Oregon has filed a declaratory judgment action in the federal district court in Portland, asking the court to affirm that SID’s replacement of part of its 113-year-old open canal with an underground pipeline fulfills the requirements of the federal Right-of-Way Act of March 3, 1891. SID is seeking a declaration that it is entitled under federal law to use its canal easement for an underground pipeline.

SID’s existing open ditch was constructed in its right-of-way secured under the 1891 Act. The federal court action is the result of some property owners living adjacent to the canal objecting to SID’s upgrade in water delivery facilities and threatening legal actions on the basis of aesthetics and property devaluation. Over 160 property owners who own land adjacent to the irrigation canal have been named as parties (so as to be bound by the decision).

For info: Jan Lee, Manager, SID, 541/ 388-0658, Daniel H. Israel, 303/ 246-9027 or email: adamatronics@aol.com

**ARIZONA SETTLEMENT
CONGRESS APPROVES**

AZ

Congress passed the Arizona Water Settlements Act (S.437) November 17, creating the largest tribal settlement in US history. The settlement grants Indian tribes nearly half of the Colorado River water (650,784 acre-feet — once ear-marked for Phoenix and Tucson) and allows tribes to lease water rights back to the cities. The Tohono O’odham Nation was given a specific allocation of 37,800 acre-feet and the Gila River Indian Community will receive 155,700 acre-feet under the legislation.

The Gila River Indian community will control more than 650,000 acre-feet of water drawn from the Central Arizona Project (CAP) and the Gila, Salt and Verde rivers. The bill leaves more than 760,000 acre-feet for cities and farmers in Maricopa, Pinal and Pima counties (through CAP canals). The legislation also settled a dispute between the CAP board and the federal government over how much Arizona owed for construction of the Project — with Arizona agreeing to pay \$1.65 billion. The bill allocates funding to help tribes build water infrastructure projects, including the San Carlos Irrigation Project.

The legislation amends the 1982 Southern Arizona Water Rights Settlement Act, settling unresolved disputes between the Tohono O’odham Nation, the San Xavier District, the Schuk Toak District, the City of Tucson, the State of Arizona, Asarco, Farmers’ Investment Company and two Indian allottees regarding the pumping of groundwater. The bill includes \$2.2 billion for the Lower Basin Development Fund to provide, over a 40-year period, benefits to parties of these and future settlements, with a particular focus on operation and maintenance charges for the delivery of CAP water to Indian tribes and related Indian expenses.

For info: Scot Montrey, 202/ 224-2206, Senator Kyl’s office (Arizona) or website: <http://kyl.senate.gov/record.cfm?id=228244>

The Water Report

WATER BRIEFS

EPA ENFORCEMENT 2004 US BILLION POUNDS REDUCTION

A US Environmental Protection Agency (EPA) press release states that EPA enforcement actions concluded in fiscal year (FY) 2004 will reduce pollution by a projected one billion pounds and require cleanups estimated to cost a record \$4.8 billion. These figures represent significant increases over the previous year. EPA said that other annual measures of the Agency's enforcement and compliance activity — such as the number of inspections (up 11 percent from FY 2003) and investigations (up 32 percent from FY 2003) — also surpassed or kept pace with previous years.

EPA estimates that as a result of actions taken in 2004: 3.4 million cubic yards of contaminated soil and sediment and 9.5 million cubic yards of groundwater will be cleaned up; 1,300 acres of wetlands will be protected; and the drinking water of four million Americans will comply with EPA standards. Of the 4,257 cases concluded by EPA in FY 2004, 83 percent resulted in actions to bring facilities into compliance with environmental laws.

EPA finalized 2,248 civil administrative penalty actions in FY 2004 — up 32 percent over 1,706 in FY 2003. EPA enforcement charged 293 defendants with environmental crimes in FY 2004, 46 more defendants than in FY 2003.

For info:

Highlights of individual enforcement cases and compliance assistance are available online at: www.epa.gov/compliance/resources/reports/endofyear/eoy2004/2004highlights.html

More information on EPA's FY 2004 enforcement and compliance program and data is available at: www.epa.gov/compliance/planning/results/press/2004eoy/index.html

WESTERN SALMONIDS DRAFT EA

NOAA Fisheries has reviewed the status of 26 evolutionarily significant units (ESUs) of West Coast salmon and steelhead previously listed as threatened and endangered under the federal Endangered Species Act (ESA) — plus one candidate ESU. In June 2004 NOAA Fisheries proposed that 23 of the reviewed ESUs be listed as threatened under the ESA. In conjunction with the proposed listing determinations, NOAA Fisheries proposes to revise and simplify existing 4(d) protective regulations for threatened salmonids. A Federal Register notice published on Nov. 15, 2004 announced the availability of a draft environmental assessment (EA) that analyzes alternative approaches under the National Environmental Policy Act (NEPA). This draft EA was available for public comment through Dec. 15, 2004. **For info:** NOAA website: www.nwr.noaa.gov/1salmon/salmesa/draft4dEA.htm

NOAA BIOP NORTHWEST COLUMBIA AND SNAKE RIVERS

On November 30, NOAA Fisheries released its final revised biological opinion on the operation of federal hydroelectric dams on the Columbia and lower Snake Rivers, and most federal Columbia Basin irrigation projects. NOAA said the new document goes beyond the legal requirements directed by a federal court last year to protect salmon and steelhead under the ESA. The *Revised 2004 Biological Opinion* (BiOp) was prepared pursuant to section 7(a)(2) of the ESA and in response to the District Court's Order by Judge Redden dated June 2, 2003 in *National Wildlife Federation v. NMFS*, CR 01-640-RE. Judge Redden invalidated the 2000 BiOp and ordered revisions to base the analysis on measures that were "reasonably certain to occur."

Another document, the "Updated Proposal Action" (UPA), which sets out actions the agencies will carry out over the next 10 years to help listed species, was also released. The BiOp concludes

that the UPA, finalized November 29, is not likely to jeopardize 12 listed species or one proposed-to-be-listed species of Columbia Basin salmonids.

The BiOp appears headed for more litigation. Columbia Basin Tribes immediately denounced the BiOp as a plan that forsakes salmon-recovery goals while granting deference to the federal Columbia River power system. According to Olney Patt Jr., Executive Director of the Columbia River Inter-Tribal Fish Commission (CRITFC — which represents the Nez Perce, Warm Springs, Yakama and Umatilla tribes) NOAA Fisheries' plan has three principal flaws: 1) a "no-jeopardy" conclusion; 2) abandonment of recovery as a goal; and 3) declaration of the hydropower system as an unchangeable part of the Basin's natural landscape. The criticism is that the plan relies heavily on the historically failed salmon-barging scheme and on developmental technology — removable spillway weirs — to achieve higher juvenile survival.

"It's a lengthy, complicated document and we will be reviewing it from both a scientific and legal standpoint," said Jay Minthorn, an elected official for the Confederated Tribes of the Umatilla Indian Reservation (CTUIR) who chairs the Tribe's Fish and Wildlife Committee. "All indications at this point are that it is a serious step backwards, and the CTUIR is gravely concerned about the Bush Administration's drastic approaches for addressing...salmon." Minthorn said. "The new Biological Opinion, unlike all prior Opinions, deems the existing federal hydro-system to be a permanent and seemingly sacred and revered part of the Northwest landscape."

For info: Carl Merkle, CTUIR, 541/966-2354, website: www.umatilla.nsn.us/; Rob Lothrop, CRITFC, 503/731-1291, website: www.critfc.org/; Brian Gorman, NOAA, 206/526-6613, website: www.salmonrecovery.gov/; Mike Hansen, BPA, 503/230-5131, website: www.bpa.gov

WATER BRIEFS

**CRITICAL HABITAT
EXCLUSIONS CONSIDERED**

NW

NOAA Fisheries has proposed to designate critical habitat for 13 ESUs of Pacific salmon (Chinook, chum, coho, and sockeye) and O. mykiss (inclusive of anadromous steelhead and resident rainbow trout) listed under the ESA. The specific areas proposed for designation include approximately 27,553 miles of lake, riverine, and estuarine habitat in Washington, Oregon, and Idaho, as well as approximately 2,121 miles of marine nearshore habitat in Puget Sound, Washington. The proposed rule, maps, and other materials relating to this proposal can be found on NOAA's website at: www.nwr.noaa.gov/1salmon/salmesa/crithab/CHsite.htm

NOAA Fisheries is considering excluding many of these areas from the final designation based on existing land management plans and policies,

voluntary conservation efforts and other factors. This could substantially reduce the scope of the designations. The public is invited to submit additional information on all aspects of the proposal. A schedule of public hearings is posted on the Northwest Region's website (see above). Comments on this proposed rule will be accepted for 60 days; requests for public hearings must be made in writing within 45 days (from November 30, 2004). Detailed instructions for submitting comments are provided in the proposed rule.

For info: Steve Stone, NOAA, 206/ 526-6150 or email: Steve.Stone@noaa.gov.

EPA WATER QUALITY**TRADING HANDBOOK**

EPA recently published a new document on water quality trading to add to the "toolkits" of water quality managers and watershed stake-

holders. The *Water Quality Trading Assessment Handbook* aims to help make cost-effective pollutant reductions that achieve water quality standards. Using a hypothetical river basin, the *Handbook* illustrates an analytical framework that can be used in any watershed to evaluate the conditions and water quality problems and determine if water quality trading might effectively address local conditions. You may order paper copies of the handbook at no charge from the National Service Center for Environmental Publications at 800/ 490-9198 or via email at ncepimal@one.net (refer to the EPA document number EPA 841-B-04-001). You may also access and download the handbook at: www.epa.gov/owow/watershed/trading/handbook

For info: Lynda Hall, EPA, 202/ 566-1210 or Katharine Dowell, EPA, 202/ 564-1515

CALENDAR

Dec 14-16 OR

Northwest Power and Conservation Council Meeting, Portland. For info: NPPC, 800/ 452-5161, email: info@nwcouncil.org, website: www.nwppc.org

December 15-17 NV

Colorado River Water Users Association 59th Annual Conference, Las Vegas, Caesar's Palace, RE: Conflict, Goodwill & Resolution; Basin Impacts & Drought Perspectives; Surviving Drought, Arizona Odd Man Out, Forecasting the Colorado, CWA & ESA: Threats to Western Water Use, Desalinization, & Much More. For info: CRWUA, 760/ 398-2651, website: www.crwua.org

2005

January 4 WY

Wyoming State Water Forum Meeting, Cheyenne, State Engineer's Conference Room, Herschler Building 4E, 10am, Invited Guest: Brad Anderson (Anderson Consulting), Discussion Item: Midvale Conservation Program. For info: State Engineer's Office, website: <http://seo.state.wy.us/forum.aspx>

January 5 NM

New Mexico Water Trust Board Meeting, Location TBA. For info: Chrissy Salazar (Meeting Coordinator), 505/ 984-1454, email: csalazar@nmfa.net

January 6-7 OR

Oregon Fish & Wildlife Commission, Salem, 8 am, RE: Wolf Conservation and Management Plan, US Bureau of Reclamation and Clean Water Services (Fish Passage Waiver), 2005 Columbia River Sturgeon and Spring Chinook Fisheries & More. For info: Cristy Mosset, ODFW, 503/ 947-6044, www.dfw.state.or.us/Comm/schedule.htm

January 7-9 NV

3rd Annual Wild & Scenic Environmental Film Festival, Nevada City, RE: Environmental Films and Speakers. For info: www.wildandscenicfilmfestival.org

January 11 OK

Oklahoma Water Resources Board Meeting, Oklahoma City, 3800 N. Classen Blvd., 9:30 am. For info: OWRB, 405/ 530-8800, website: www.owrb.state.ok.us/news/meetings/board/board-mtgs.php

January 13 NM

New Mexico Water Dialogue Annual Statewide Meeting, Location TBA, 8am-5pm, RE: Water Conflicts-Regional Solutions. For info: John R. Brown, 505/ 898-9551, email: jrb@osogrande.com

January 13-14 OR
Oregon Water Resources
Commission Meeting, Salem.
 For info: Cindy Smith
 (OWRD), 503/ 986-0876,
 website: [www.wrd.state.or.us/](http://www.wrd.state.or.us/commission/index.shtml)
[commission/index.shtml](http://www.wrd.state.or.us/commission/index.shtml)

January 13-15 NM
Quivira Coalition's 4th
Annual Conference: "Half
Public, Half Private, One
West: Innovation and
Opportunity Across
Boundaries, Albuquerque,
 Albuquerque Hilton. For info:
 Quivira Coalition, 505/ 820-
 2544, website:
www.quiviracoalition.org

January 19 TX
Texas Water Development
Board Meeting, Austin, 1-111
 William B. Travis Building,
 1:30pm. For info: TWDB, 512/
 463-7847, website:
www.twdb.state.tx.us/

January 20-21 WA
Endangered Species Act 12th
Annual, Seattle, Red Lion on
 5th, RE: ESA and Salmon in
 Washington, DC Politics,
 Litigation Update, Regulation
 of Treaty Rights Under ESA,
 Species and Protection,
 Evolution of Jeopardy, EPA
 and Section 7, Critical Habitat,
 Biodiversity, Innovative Forms
 of HCPs, ESA Salmon
 Recovery. For info: The
 Seminar Group, 800/574-4852,
 website:
www.theseminargroup.net

January 22 CA
California EPA – State Water
Resources Control Board
Meeting, Sacramento, Cal/
 EPA Building, 1001 I Street,
 10am, RE: Water Quality
 Petition: Discharges from
 Irrigation, Timber Harvest
 Practices in Lahontan Region
 and Central Valley & More. For
 info: Debbie Irvin, Clerk to the
 Board, 916/ 341-5600; email:
dirvin@waterboards.ca.gov;
 website: [www.swrcb.ca.gov/](http://www.swrcb.ca.gov/wksmtgs/schedule.html)
[wksmtgs/schedule.html](http://www.swrcb.ca.gov/wksmtgs/schedule.html)

January 23-26 FL
Source Water Protection
Symposium, Palm Beach
Gardens, Marriott Hotel
 Sponsored by the American
 Water Works Association, RE:
 Preserving Water Quality
 Through Sciences and
 Partnerships. For info: AWWA
 Customer Service Group, 800/
 926-7337; website:
www.awwa.org

January 25-26 CO
Colorado Water
Conservation Board Meeting,
Denver, Location TBA.
 For info:
 email: cwcbnews@state.co.us,
 website: <http://cwcb.state.co.us/>

January 25-28 TX
2005 Texas Groundwater
Assn. Convention & Trade
Show, Lubbock, Lubbock
Memorial Civic Center,
 Sponsor: Texas Groundwater
 Assn. For info: TGA, 512/
 472-7437, website:
www.tgwa.org

January 26 NE
Nebraska Natural Resources
Commission, Lincoln. For
 info: NNRC, 402/ 471-2363,
 website: [www.dnr.state.ne.us/](http://www.dnr.state.ne.us/commenbers/commenb2.html)
[commenbers/commenb2.html](http://www.dnr.state.ne.us/commenbers/commenb2.html)

January 26 WA
SEPA/NEPA Workshop,
Seattle, Renaissance Seattle
Hotel, RE: Compliance with
SEPA/NEPA; Exemptions ;
 Mitigated FONSI and DNSs;
 Regulatory Reform; Area Wide
 Planning; Project and Non-
 Project EISs; More. For info:
 LSI, 206/ 567-4490

January 27 WA
Stormwater: Turning a
Potential Problem into an
Asset, Seattle. For Builders,
 Developers, Contractors,
 Landscapers, Architects,
 Engineers & Planners. For info:
 website:
[www.resourceventure.org/rv/](http://www.resourceventure.org/rv/news/calendar/index.php)
[news/calendar/index.php](http://www.resourceventure.org/rv/news/calendar/index.php)

January 27-28 CA
California Wetlands 11th
Annual Conference, San
Diego, Loews Coronado Hotel,
 RE: 404 Permitting and ESA
 Issues, Special Area
 Management Plans, Mitigation
 Banking, National Wetlands
 Mitigation Action Plan,
 Stormwater Regs and
 Treatment Options, Delineation
 Issues, California Rapid
 Assessment Method. For info:
 CLE Int'l, 800/ 873-7130,
 website: www.cle.com

January 27-28 OR
Inspection Erosion
Prevention / Sediment
Control Workshop, Portland,
 City of Portland Water
 Pollution Control Laboratory,
 6543 N Burlington. RE:
 Upcoming DEQ Erosion
 Prevention and Control
 Manual; Inspector's Guidance
 Handbook; Common
 Violations; BMPs; Design and
 Installation Standards; More.
 For info: Kevin Masterson,
 DEQ/WQ, 503/ 229-5615 or
 email:
masterson.kevin@deq.state.or.us

January 27-28 TX
Texas Wetlands 15th Annual
Conference, Houston, Omni
Hotel, RE: Trip Wires to
Wetlands Permitting, Riparian
Protection/Restoration, Isolated
V. Adjacent Waters,
 Delineation and Technology,
 Mitigation Banks, Case Studies,
 Developer's Perspective,
 Economic Advantages in
 Environmental Consideration,
 Hot Topics, Post SWANCC.
 For info: CLE Int'l, 800/ 873-
 7130, website: www.cle.com

January 27-28 TX
5th Annual Water Law
Seminar (TWCA/TRWA),
Austin, Hilton. For info:
 TWCA, website: www.twca.org

January 27-28 NM
Law of the Rio Grande
SuperConference:
Albuquerque, Hyatt Regency,
 RE: Feature – River of
 Complexity: Environmental,
 Legal, Social & Econ Issues
 (Kathleen Hartnett White,
 Chairman, TCEQ), Developing
 Law of the Rio Grande, New
 Mexico & Texas Adjudications,
 Rio Grande Compact, Water
 Management Strategies,
 Bilateral Water Issues,
 Legislative Update, Native
 American Settlements &
 Adjudications. For info: CLE
 Int'l, 800/ 873-7130, website:
www.cle.com

February 1 WY
Wyoming State Water Forum
Meeting, Cheyenne, State
Engineer's Conference Room,
 Herschler Building 4E, 10am,
 Invited Guest: Tom Annear
 (Wyoming Game and Fish),
 Discussion Item: Behavioral
 and Physiological Effects of
 Winter Habitat on Trout. For
 info: State Engineer's Office,
 website: [http://seo.state.wy.us/](http://seo.state.wy.us/forum.aspx)
[forum.aspx](http://seo.state.wy.us/forum.aspx)

February 1-3 NV
"Growth, Water and the
Quality of Life in Nevada,"
Nevada Water Resources
Association Annual
Conference, Reno, Peppermill
Hotel & Casino, RE: For info:
 NWSA, 775/ 626-6389

February 3-4 OR
Oregon Environmental
Quality Commission Meeting,
Portland, DEQ Rm 3A, 811
SW 6th Ave. For info: Mikell
O'Mealy, Office of DEQ
Director, 503/ 229-5301,
 website: www.deq.state.or.us/

(continued from previous page)

February 3-4 CO

NEPA: Turning Complexities Into Strategies, Broomfield, Omni Interlocken Resort, RE: NEPA Overview and Compliance, Process and Streamlining, Initiatives and Modernization, Clean Water Act, Health Impact, Platte River Cooperative Agreement, Cumulative Impacts, Content Analysis, Environmental Justice and NEPA, Categorical Exclusions and EAs, Tier 1 Programmatic Process, Regional Energy Development, Ethics. For info: CLE Int'l, 800 873-7130, website: www.cle.com

February 6-9 AZ

Disinfection 2005, Phoenix, Marriott Mesa. Sponsored by the Water Environment Federation (WEF). Held in cooperation with the Arizona Water Pollution Control Association (AWPCA), American Water Works Association (AWWA), and the International Water Association (IWA). For info: WEF website: www.wef.org or 800-666-0206

February 8 OK

Oklahoma Water Resources Board Meeting, Oklahoma City, 3800 N. Classen Blvd., 9:30 am. For info: OWRB, 405/ 530-8800, website: www.owrb.state.ok.us/news/meetings/board/board-mtgs.php

February 9 TX

Nuts & Bolts of Texas Water Rights, San Antonio, Hyatt Hill Country Resort & Spa. For info: Texas Bar, 800/ 204-2222 x1574, website: www.TexasBarCLE.com

February 10-11 OR

Oregon Fish & Wildlife Commission, Troutdale, 8 am, RE: Oregon Wolf Conservation and Management Plan, 2005 Columbia River Sturgeon and Spring Chinook Fisheries. For info: Cristy Mosset, ODFW, 503/ 947-6044, www.dfw.state.or.us/Comm/schedule.htm

February 10-11 TX

The Changing Face of Water Rights in Texas (6th Annual), San Antonio, Hyatt Hill Country Resort & Spa. For info: Texas Bar, 800/ 204-2222 x1574, website: www.TexasBarCLE.com

February 10-11 TN

Dam Removal: Lessons Learned, Knoxville, University of Tennessee, Sponsored by The Environmental & Water Resources Institute of ASCE, RE: Various Aspects of Dam Removal, Communication Across Disciplinary Boundaries, Permitting, Economic Impacts, Biological Impacts, Social/ Cultural Impacts, Aesthetics/ Recreation, and Geomorphologic/Hydrologic Impacts. For info: Katie Gorscak, 703/ 295-6371, or website: www.ewrinstitute.org/damremoval04/tennessee/tn_register.cfm

February 14-15 AZ

Second National Water Resources Policy Dialogue, Tucson, Loews Ventana Canyon Resort, Sponsored by American Water Resources Association and 11 Federal Water Agencies, RE: Water Resources Supply and Demand, Infrastructure Management, Environmental Quality. For info: Richard Engberg, AWRA, 540/ 687-8390, email: dick@awra.org, website: www.awra.org

February 15 TX

Texas Water Development Board Meeting, Austin, 1-111 William B. Travis Building, 1:30pm. For info: TWDB, 512/ 463-7847, website: www.twdb.state.tx.us/

February 16-17 TN

Source Water Protection: Planning for the Future, Nashville, Metro Water Services, 1700 3rd Avenue North, Sponsored by the American Water Works Association, RE: Source Water Protection Plans (SWPP), Government Roles in SWPPs, Delineation of Source Water Protection Areas, Contamination, Determining Source Water Susceptibility, SWP Area Management, Emergency Plans, Source Water Assessment, Funding Options. For info: AWWA Customer Service Group, 800/ 926-7337; website: www.awwa.org



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