

MEETING WATER CHALLENGES IN IDAHO THROUGH WATER BANKING

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ABSTRACT

Idaho authorized water banking in 1979. Today, a statewide water bank functions as well as local rental pools. Stored water and natural flows are traded. The water bank and local rental pools are used to meet the needs of irrigators suffering from drought induced water shortages, to meet instream flow needs of endangered species, and to meet the needs of water users having junior priority surface or ground water rights. Both lessors and lessees have benefited from water rentals.³

This paper will focus mainly on recent experiences in the Upper Snake (the Snake River above Milner Dam near Burley, Idaho) and Payette Rental Pools, the two most active in the State. Both Rental Pools have been very successful. Particularly in the Payette Basin, income from rentals has enabled water users to upgrade their irrigation systems with resulting significant improvements in water management. The Upper Snake Rental Pool, while also experiencing significant rentals and opportunities for water users, has had to deal with drought induced competition for water that seriously challenged rental pool managers. Setting prices in changing economic conditions, addressing impacts to non-participating water users, and determining priorities among prospective uses were all addressed. Conflicts have not ended, but it is fair to say that through the persistence and dedication of rental pool managers and participants, the challenges were successfully addressed.

BACKGROUND

In Idaho, rentals of stored water first took place in the 1930's. In 1976 the Idaho Water Resources Board, in its State Water Plan, recommended the establishment of a water supply bank. In 1979 the Idaho legislature formally established a water supply bank. That year the Water Resources Board appointed the Committee of Nine, an advisory committee to the Watermaster of Idaho's Water District One, to manage the Upper Snake Rental Pool⁴ which has functioned since that date. In 1988, with the Bureau of

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³ Rigby presented two previous papers on or touching on flow augmentation. At the 1989 conference he presented a paper entitled *Water Banking in Idaho*. In 1996 he presented a paper *Acquiring Water For Flow Augmentation*. Some of the information in those papers will be summarized here for the sake of completeness.

⁴ The term "Upper Snake" has different meanings. In Idaho water circles the term refers to the area of the Snake River served from primarily surface diversions above Milner Dam near Burley Idaho. In the

Reclamation's encouragement, a rental pool was established in the Boise River Basin. A rental pool was established in the Payette Basin, also with Reclamation's encouragement, in 1990. Today 6 local rental pools function under the management of local committees. Local pools cover specific geographic areas. Four of the six local rental pools only trade stored water. The State Water Bank continues to operate for all areas not covered by local rental pools and involves the trading of surface and ground water supplies.⁵

THE BUREAU OF RECLAMATION'S INVOLVEMENT WITH IDAHO RENTAL POOLS

For many decades the Bureau of Reclamation was an interested bystander in discussions about renting water from one reservoir spaceholder to another. Reclamation's role was to deliver stored water to contracting entities. Under the terms of reservoir *spaceholder* contracts, largely unique to Idaho, the onus of dealing with water shortages is mainly the responsibility of the spaceholders. Each spaceholder contract provides carryover privileges for contracted reservoir storage. Spaceholders decide how they will manage their available water supplies. They may be aggressive in their use of water this year, or be more conservative and save water in storage for possible use next year. The reservoirs are more likely than not to fill in a given year, so water saved this year has a good chance of spilling past the reservoirs with the next spring freshet. Spaceholders have three basic choices in a given year: (1) use the water they need without regard to next year; (2) conserve storage in case the reservoirs don't fill next year; or (3) rent some of their stored water, often at the urging of a needy user, and thereby help a neighboring user while improving one's financial condition. Reclamation may be consulted, but decisions about the use of stored water rest with the boards of directors of contracting entities—they, not Reclamation, get to explain their decisions to disgruntled users if they guess wrong.⁶

In 1991 Idaho Sockeye Salmon were listed under the Endangered Species Act (ESA).⁷ Other species of anadromous fish were listed in the following years. Today 13 species of salmon and steelhead listed as threatened or endangered under the ESA are considered to be impacted by Reclamation's Idaho projects.⁸ As a result, Reclamation's Pacific

vernacular of Reclamation's Endangered Species Act consultations discussed herein, the term "Upper Snake" refers to the Snake River above Idaho Power Company's Hells Canyon Complex on the Idaho/Oregon Border. Perception matters, and from Portland the Upper Snake starts at Hells Canyon. In Idaho it starts at Milner. This paper uses the Idaho definition.

⁵ http://www.idwr.idaho.gov/WaterManagement/WaterRights/WaterSupply/ws_default.htm

⁶ Reclamation does get plenty of advice in managing the reservoirs to make sure they fill. Many irrigation water users understandably have a fill and spill mentality. The fact is Reclamation has multiple project purposes to implement, including flood control and power. While most people would probably agree that Reclamation errs on the side of filling reservoirs, it attempts to balance needs for instream flows and hydroelectric power generation during the winter storage season.

⁷ Federal Register of November 20, 1991

⁸ Species of anadromous fish addressed in NOAA Fisheries May 5, 2008 Biological Opinion on the operation of Reclamation's Snake River projects are: Snake River fall chinook, Snake River spring/summer Chinook, Snake River sockeye, Snake River steelhead, Upper Columbia River spring chinook, Upper Columbia River steelhead, Middle Columbia River steelhead, Columbia River chum, Lower Columbia River Chinook, Lower Columbia River coho, Lower Columbia River steelhead, Upper Willamette River Chinook, and Upper Willamette River steelhead. As if that lengthy and far ranging list were not enough, NOAA also addressed the affects of Reclamation's upper Snake operations on southern resident killer

Northwest Region has become intimately familiar with what had been previously considered to be arcane provisions of the Endangered Species Act. Two farm boys from South Dakota and Utah with degrees in agricultural engineering and economics and who joined Reclamation to help tame the Wild West learned about things they could never have imagined when they joined Reclamation. Concepts like *may affect, reasonable and prudent measures*, and *adverse modification of critical habitat* became part of their everyday vocabulary.

While these changes were dramatic to Reclamation, they were a severe shock to the system of Idaho's irrigation community and threatened to seriously strain relationships as the idea of providing water from Reclamation reservoirs located hundreds of miles from the nearest salmon became a reality.⁹ In 1991 at the request of the governor's of Idaho, Montana, Oregon, and Washington, Reclamation first provided water for flow augmentation. NOAA Fisheries' Biological Opinions beginning in the early 1990s called on Reclamation to provide up to 427,000 acre-feet for flow augmentation, from willing sellers and in accordance with state water law. Changes in State law were made to accommodate the use of water for flow augmentation, and specified that all water provided must go through the respective rental pools. This accommodation agreed to by Reclamation further cemented the willing seller policy and secured for Reclamation state approval and protection of flow augmentation deliveries. Otherwise the water released could have been considered part of the natural flow and subject to diversion. The volume to be provided was increased to up to 487,000 acre-feet (also from willing sellers and in accordance with state water law) with completion of the Nez Perce tribal water rights settlement in 2004).¹⁰ The authors participated in the negotiations and wanted to avoid battles with the water user community over rates. Therefore, they sought and secured acceptance of a state-wide rate for rentals. Rental rates started at \$14 through 2012 and increase to \$23 for the years 2023-2030. Rates are inclusive of administrative fees.¹¹

Reclamation has provided water for flow augmentation requested in Biological Opinions issued since 1993.¹² Flow augmentation usually comes from four sources: (1) water stored in project reservoirs but never contracted for use that has been rededicated for flow augmentation; (2) reservoir storage specifically reacquired for flow augmentation; (3) annual rentals from the Upper Snake, Payette, and to a lesser extent the Boise Rental

whales, or orcas, which feed on salmon in the ocean and which are deemed to be possibly affected by the operation of Reclamation's Snake River Projects

⁹ Other local species listed under the ESA also impact the operation of Reclamation projects. Bull trout occupy project reservoirs in the Boise Project. Listed snails live in the sediments of the Snake River in and below Reclamation Minidoka Project reservoirs.

¹⁰ <http://www.idwr.idaho.gov/waterboard/WaterPlanning/nezperce/default.htm>

¹¹ Mediator's term sheet, page 21. The rates specified pertain to water rented from spaceholders. The state statute specified that all water provided must go through the rental pools, and this applied to space never contracted to water users or reacquired by Reclamation. This water in Reclamation space was obliged to pay water district *administrative fees*, which are currently \$0.75, \$0.80, and \$1.00 on the Boise, Upper Snake, and Payette Basins respectively.

¹² NOAA Fisheries and the Bureau of Reclamation's first status report (Dated October 3, 2006) on the remand of NOAA Fisheries Upper Snake Biological Opinion, found at: <http://www.salmonrecovery.gov/Files/BiologicalOpinions/2006/Final%20First%20Remand%20Joint%20status%20report.pdf>

Pools; (4) a thirty year lease with the Idaho Water Resources Board for 60,000 acre-feet of natural flows, which was arranged pursuant to the Nez Perce water rights settlement, plus natural flows acquired in Oregon.¹³ The rental pools have been essential to Reclamation's success in providing water for flow augmentation and always will be. Except for the extreme drought years of 2001-2004, Reclamation has been able to meet the volume identified by NOAA Fisheries.

PAYETTE RENTAL POOL

The Payette Basin is probably noted as much for its recreation opportunities as anything. The basin has a wide range in elevation over its' fairly short course which helps make the Payette River below Cascade Dam a highly popular whitewater rafting and kayaking area, with a class V designation. Logging was a large part of the economy for a period but agriculture has persisted as an important part of the area's economy. The basin is covered by Idaho's Water District 65. The District's Rental Pool governs the rental of water stored in Reclamation's Cascade and Deadwood Reservoirs. These reservoirs are features of the Payette Division of the Boise Project. Together they store more than 800,000 acre-feet of water. Some 120,000 acres are irrigated in the Payette Division and are nearly evenly split between those receiving a full supply and those which receive a supplemental supply.¹⁴

The Payette River Basin is characterized by a reasonably large and productive watershed with a limited irrigated area. Consequently, while the basin has suffered water shortages in the past it is relatively speaking the most water rich of Reclamation project areas in the State of Idaho. Consequently, Reclamation has relied on the Payette in providing water for flow augmentation for proportionately more water than the Boise or Upper Snake rental pools.

In a typical year Reclamation may release up to 95,000 acre-feet of water which was never contracted and has been reassigned to flow augmentation. In addition, water users typically rent to Reclamation up to 65,000 acre-feet of water for flow augmentation. Historically, from 150,000 to 175,000 acre-feet of water have been provided for flow augmentation from the Payette Basin. The larger volume was provided when conditions elsewhere were dry and when Reclamation elected to release water from Deadwood Reservoir that had been dedicated to maintenance of a minimum reservoir pool. Recent consultations with the Fish and Wildlife Service on ESA listed bull trout have placed greater emphasis on the pool level at Deadwood, so it is unlikely that the minimum pool will be available for salmon and steelhead flow augmentation in the future. In addition, while some 336,000 acre-feet in Cascade Reservoir have never been contracted, a 300,000 acre-foot minimum pool has been adopted as an acceptable volume to deal with late summer water quality problems at the reservoir.

¹³ Bureau of Reclamation, Appendix C to August 2007 Biological Assessment, Bureau of Reclamation's Operation and Maintenance in the Snake River Basin above Brownlee Reservoir, pp C3-C6. It also describes the use of water stored in so-called power head space that is used when the other sources do not yield 427,000 acre-feet.

¹⁴ See Reclamation's description of the Payette Division located at: http://www.usbr.gov/projects/Project.jsp?proj_Name=Boise Project

With the exception of the extremely dry year of 1977, the Payette River Basin remained essentially unregulated.¹⁵ The Water District 65 Rental Pool was established in 1990.¹⁶ In 1991 the patrons of the Water District hired the first permanent watermaster. Motivation for a rental pool arose from water users' awareness that opportunities existed to generate revenue from rentals and recognition that aging facilities wouldn't last forever without significant upgrades or outright replacement. The timing of the rental pool was fortuitous. Within a few short years Reclamation's flow augmentation efforts were underway and rental pool activity quickly expanded to current levels. Today while most rentals are dedicated to flow augmentation for listed salmon and steelhead, irrigators in the basin rent about 8,800 acre-feet in a typical year and the Idaho Power Company rents up to 10,000 acre-feet in some years.

The Water District 65 Rental Pool has truly achieved the aspirations that led to its establishment. Recognizing the need for system upgrades, the water users agreed at the outset to dedicate one-third of the revenue generated from water rentals to infrastructure improvements. In 1997 part of the "administrative fees" (currently \$1.00 per acre-foot) applicable to all rentals were identified as a source of funds for improvements. The water users have been frugal in operating the water district and revenues from the administrative fees became sufficient to dedicate part of them to an incentive program. Since 1997 nearly \$1.1 million of administrative fees has been expended on system improvements on a cost share basis. The total value of improvements under this incentive program is nearly \$4.5 million. Project features include canal lining and piping, headgate automation and telemetry, automated check structures and automated spill structures.

Water measurement has improved significantly as the Payette River has transformed from a basin with relatively few measured diversions to the current situation where nearly all major diversions possess constant remote monitoring and in most cases automated remote control. Supervisory Control and Data Acquisition via telemetry are a good fit for the basin. Operating an accounting system requires good measurement and monitoring in order for the accounting to be accurate. Not only has measurement improved, nearly all significant diversions possessing constant remote monitoring and in most cases automated remote control.

Over the last 14 years, 48 separate sites have been equipped with constant monitoring. Most of these sites include automatic water control to achieve a preset flow or stage requirement. This results in constant canal deliveries in contrast to historic conditions where diversions rose and fell with changes in river stage. Data from these sites is recorded hourly and downloaded to the water district office daily where it is fed into the water accounting program of the Idaho Department of Water Resources. Additional sites continue to be added with the consequence that water accounting becomes more precise

¹⁵ The authors are indebted to Water District 65 Watermaster Ron Shurtleff for much of the factual information in the remainder of this section.

¹⁶ The current Water District 65 (Payette) Rental Pool Procedures are on the web at: http://www.idwr.idaho.gov/WaterManagement/WaterRights/WaterSupply/PDFs/WD65_2005_Procedures.pdf

every year. To date 15 separate irrigation districts and canal companies have participated by adding supervisory control and data acquisition (SCADA) to their system. In addition to the 48 automation sites mentioned above, 22 canal check structures have been added or modified to be motorized, allowing for nearly infinite adjustment. These check structures have been installed throughout three of the larger canal companies in the valley. They were built to afford automation at a later date as funding allows.

One of the largest projects made possible because of water marketing was replacement of a diversion dam. The outdated ridged structure was replaced with an inflatable rubber dam. It is capable of automatically maintaining a preset stage as the river flows fluctuate. It had a total cost of \$1,578,547.00. The canal company was able to finance the dam's installation and by utilizing proceeds from water banking activity, the structure will be paid off in 2016.

As a result of these improvements the water supply in the Payette Basin has become more secure. Automated control and telemetry, accurate water measurement, and real time monitoring has resulted in water savings. Water saved is now available for rental to generate additional revenue in good years and to extend supplies in dry years. Therefore, the conservation of water through these improvements comes without impacting the water supplies available to irrigation water users. This is a significant unexpected benefit.

These improvements have been achieved in many cases while holding water assessments to canal patrons comparatively flat. Companies once struggling to just keep up with the needs of aging facilities are now able to maintain a safety cushion of funds which allows them to undertake projects on their own and keep their system functionally sound.

UPPER SNAKE RENTAL POOL

The Upper Snake River is a thriving agricultural area. The Snake River rises in the mountains of Yellowstone National Park and is the longest and largest tributary of the Columbia River. Underlying the Upper Snake Basin is the enormous Eastern Snake Plain Aquifer (ESPA), which in the memory of the authors was described as an inexhaustible resource. Some two million acres are irrigated in the basin split approximately equally between surface and ground water diversions. The aquifer discharges into the Snake River at springs in various locations in the basin, most notably in the Thousand Springs area, where several thousand cubic feet per second discharge into the river. The water emanating from the Thousand Springs is clean and cold, and ideal for fish propagation. Idaho's aquiculture industry is located mainly in the Thousand Springs area and leads the nation, at least in terms of water use.¹⁷

The Upper Snake Rental Pool involves the exchange of stored water from one private reservoir and seven Bureau of Reclamation storage reservoirs located in Idaho and Wyoming. These reservoirs store some 4.1 million acre-feet of water and provide a full

¹⁷ United States Geological Survey, Estimated Use of Water in the United States, Circular 1344, page 30

or supplemental supply of water to over 1 million acres of land.¹⁸ This rental pool has seen considerable activity through the years. In 1985 the Idaho Power Company rented 350,000 acre-feet of water for summertime hydroelectric power generation at its power plants at American Falls and downstream. That same year a total of 12,169 acre-feet were rented by irrigators.¹⁹ In 1988, the year dry conditions led to massive forest fires that ravaged much of Yellowstone National Park, snowpack was between 71-82% of average,²⁰ and irrigation rentals hit 136,000 acre-feet, while Idaho Power rented 50,000 acre-feet.²¹ In the even drier year of 1992, snowpack ranged from 50-73% of average.²² That year, for the first time since the Upper Snake Rental Pool was established in 1979, insufficient water was made available for rental to meet the total irrigation requests of 52,779 acre-feet.²³ Only 9,954 acre-feet were provided from the rental pool, all for irrigation.²⁴

While 1988, 1992, and 1994 saw relatively dry conditions, they did not compare to the period starting in the year 2000 which experience record drought conditions in the Upper Snake. According to Karl Dreher, former Director of the Idaho Department of Water Resources:

Based on the 2-year, 3-year, 4-year, and 5-year moving averages of unregulated (corrected for reservoir storage) natural flow in the Snake River at the USGS stream gage located 2.4 miles upstream of Heise, Idaho ("Heise Gage"), since the year 2000 the Upper Snake River Basin has experienced the worst consecutive period of drought years on record.²⁵

This drought impacted aquiculture in the Thousand Springs area. Spring users had seen the spring discharge decline from peak flows experienced in the 1950s²⁶ and made calls by 2003 for priority delivery of water, seeking to regulate groundwater pumping from the ESPA. Negotiations were undertaken to resolve the issues,²⁷ but they ultimately failed and existing calls were renewed and new ones initiated.²⁸ By 2005 the largest aquiculture

¹⁸ See: http://www.usbr.gov/projects/Project.jsp?proj_Name=Minidoka+Project

¹⁹ Water District One, 1985 Annual Report, Water District 1, page 69

²⁰ Water District One, 1988 Annual Report, Water District 1, page 1

²¹ Ibid, page 72

²² Water District One, 1992 Annual Report, Water District 1, page 1

²³ Ibid, pp 2, 80

²⁴ Ibid, page 78

²⁵ Idaho Department of Water Resources, Director's Order of April 19, 2005 in responding to a water call from the Surface Water Coalition, page 17

²⁶ Charles M. Brendecke, June 18, 2007 Affidavit filed before the Department of Water Resources, Blue Lakes and Clear Springs delivery calls, page 7

²⁷ http://www.idwr.idaho.gov/News/WaterCalls/ESPA_Agreement/default.htm

²⁸ Billingsley Creek Ranch, March 16, 2005 letter to Karl Dreher, Director, Idaho Water Resources Department at:

http://www.idwr.idaho.gov/Browse/News/WaterCalls/1000/archive_PDFfiles/billingsley%20creek%20call.pdf

spring users made calls.²⁹ Surface water users diverting from the lower reaches of the Upper Snake, also filed a delivery call on January 14, 2005.³⁰

These numerous water calls resulted first in administrative hearings before the Director of the Idaho Water Resources Department or an appointed hearing officer. Multiple hearings have been held. The interface of ground and surface water, while essentially undisputed, is complex. Final orders addressing delivery calls require findings with respect to model accuracy and application, timing of impacts from pumping, and application of Idaho law. Once a matter has run its course through the administrative process, the Director's final order is typically appealed to the courts, first to the District Court in Twin Falls, which handles Idaho's Snake River Basin Adjudication, then to the Idaho Supreme Court. The Idaho Supreme Court's first rulings on specific call related findings by the director are anticipated in the spring of 2011. It is anticipated that the process will go on for several additional years before final certainty is achieved.

One of the outcomes from the water calls is mitigation obligations of ground water pumpers. With respect to calls from the Thousand Springs area, mitigation to date has been associated with buy out of spring users, voluntary curtailment of ground water pumping, conversions from groundwater to a surface water source of supply, and recharge.³¹ Much of the water for recharge and conversions needs to be acquired from the rental pool. Mitigation associated with the Surface Water Coalition call has largely relied on the acquisition of stored water that can be made available to impacted Surface Water Coalition members. The first mitigation obligations arose pursuant to orders issued by the Director in 2005. The courts have weighed in to require the Director to assure that ground water users secure mitigation water early in the season for use if needed by Surface Water Coalition members. As a result, the Interim Director required ground water users to secure 84,300 acre-feet as a contingency to meet potential shortages in 2010.³² That volume was based on low snowpack conditions and predicted resulting shortages to Surface Water Coalition members. Conditions improved dramatically due to heavy spring precipitation, and the water was ultimately not needed.

To summarize, since inception of the Upper Snake Rental Pool in 1979, new demands for rental pool supplies have arisen from:

1. Bureau of Reclamation flow augmentation. Reclamation reacquired about 23,000 acre-feet of storage in the Upper Snake from willing sellers, and relies on the Rental

²⁹ The Thousand Springs area calls are extensively documented at the Idaho Department of Water Resources web page:

<http://www.idwr.idaho.gov/News/WaterCalls/1000Spring%20Users%20Calls/default.htm#AD>

³⁰ Surface Water Coalition Letter dated January 14, 2005 to Karl Dreher, Director, Idaho Department of Water Resources. The Surface Water Coalition calls are also extensively documented. See:

<http://www.idwr.idaho.gov/News/WaterCalls/Surface%20Coalition%20Call/default.htm#Admin>

³¹ See the Interim Director's Order of July 19, 2010 at:

http://www.idwr.idaho.gov/News/MitigationPlan/ESPA/PDF/20100719_Final-Order.pdf

³² Idaho Department of Water Resources, Order Regarding April 2010 Forecast Supply, April 19, 2010, pp 2-3

Pool for significant supplies. In recent years 150,000 to 180,000 acre-feet of water has been rented.

2. Mitigation for ground water pumping. While the volume required in 2010³³ was the largest since the 2005 water calls, it is not a worst case scenario. The drought expected in April 2010 followed a near normal 2009. In the second sequential year of drought the acre-feet required for mitigation could be in the hundreds of thousands.
3. The Idaho Power Company. The Company rented water in the decade of the 1980s but dropped from participation in the 1990s. In recent years the Company has sought to rent water, but no rentals through the rental pool have been achieved.³⁴ Water users know the Company has relatively deep pockets and some would like to rent water to the Company at attractive rates.

The demands for storage have required hard work by Rental Pool managers. It became apparent soon after the water calls were issued that without extraordinary efforts, the Upper Snake Rental Pool would cease to function and among other things, the water users' commitments to provide flow augmentation that were articulated in the Nez Perce Settlement would be unfulfilled.

The rental pool has faced several challenging questions:

1. What about impacts to other spaceholders? Storage is not equal since some reservoir space is essentially guaranteed to fill while other space may not fill for several years in a row.³⁵ Spaceholders with junior space feared that rentals by senior spaceholders could impact the storage available to them in future years.
2. In light of potential impacts to non-participating spaceholders, should spaceholders' ability to rent water be limited? Spaceholders with senior storage believed that once stored, the owner has the unfettered right to market it. Junior spaceholders held fast to the concept that the reservoir was a system to benefit all spaceholders, and that while a user had the ability to use as much stored water as needed to irrigate his crop, the right did not extend to renting water to others, because rentals made one year reduced system carryover and made the reservoir system more difficult to fill.
3. How would sufficient water be made available to meet the water users' commitments to provide water for flow augmentation? Under the rental pool procedures that applied prior to implementation of the Nez Perce water rights settlement it was necessary for willing lessors to formally consign water to the rental pool. During the

³³ 84,300 acre-feet associated with the Surface Water Coalition call plus an additional volume, probably about 20,000 acre-feet, for conversions and recharge to mitigate for spring users' calls

³⁴ The Company did rent 45,716 acre-feet of water stored in American Falls Reservoir from the Shoshone Bannock Tribes. See the Company's October 29, 2009 filing with the U.S. Securities and Exchange Commission located at http://www.fqs.org/sec-filings/091029/IDAHO-POWER-CO_10-Q/, pp 28 and 51

³⁵ The probability of refill relates to the storage priority date for the space in question and the location of the reservoir. For example, American Falls Reservoir on the Snake River near the bottom of the system having a 1921 priority will fill before Ririe Reservoir upstream on Willow Creek with a 1969 priority.

drought many spaceholders suffered from water shortages. It was apparent that spaceholders were adopting a more conservative approach to making water available for rental. The potential existed that every time a spaceholder was negatively impacted from flow augmentation rentals, it would decline to make water available for an extended time into the future. That situation could result in an ever declining pool of suppliers and was considered to be a serious problem.

4. What about price? As demand has risen in recent years, the value of water has increased significantly. There are anecdotal reports that price has increased tenfold within the last two decades. Spaceholders with water to rent thought the price should be high to properly recognize the value of water. Those anticipating they might rent water thought the price should be low, to spread the benefits of the storage system as widely as possible.
5. How would new demands for water to mitigate for ground water pumping³⁶ be met in light of bright memories about insufficient water supply during the recent drought and questions whether the drought was indeed over?³⁷

The challenges were addressed as follows:³⁸

1. Reclamation and the watermaster of Water District One collaborated to develop a chart that defined how much water would be made available for rental for flow augmentation under specified conditions. The factors are November 1 reservoir carryover for the prior year and the April 1 forecast for April-September flows at Heise. In years where the combined carryover and forecast are low, no water would be made available and Reclamation would need to rely on water stored in powerhead space to attempt to provide at least 427,000 acre-feet. This partially resolved water users' concerns by assuring them that Reclamation would not demand water when there wasn't enough to meet irrigation demand. It was also in keeping with the longstanding principle that water would be provided only from willing sellers (lessors). Under the chart up to 205,000 acre-feet could be provided in the best conditions. In addition, 55,000 acre-feet would be available every year for spaceholders (50,000 acre-feet) and "small users," (5,000 acre-feet) who individually

³⁶ Probably few spaceholders consider the need for water to mitigate for ground water pumping to be an *obligation*, but many are willing to accommodate the need if it can be done without impacting storage spaceholders too severely.

³⁷ Mother Nature has not been as cooperative as she could be in recent years, as demonstrated by conditions in 2007 and 2010. In the winter of 2007 Reclamation was on target to completely fill the system reservoirs. Conditions turned very dry and the April 1 Heise forecast (April-July) was only 67% of average. The system failed to fill. Actual runoff for the period was a dismal 54% due to continued dry conditions. Water supply conditions in 2010 looked very poor and the April 1 Heise forecast was 54% of average. Spring precipitation was well above average and actual runoff was 73% of average. The system filled.

³⁸ The Upper Snake Rental Pool Procedures are available on the web at:
http://www.idwr.idaho.gov/WaterManagement/WaterRights/waterSupply/PDFs/2010-RentalPool_WDI.pdf

demand no more than 100 acre-feet per year.³⁹ All water rented to Reclamation for flow augmentation plus the 55,000 acre-feet rented to spaceholders and small users was deemed to come from a common pool. Spaceholders were each given the opportunity to “opt out” of the rental pool. Essentially all spaceholders remained participants in the rental pool.

2. Payments to spaceholders are based on a formula that includes each spaceholders percentage of total system capacity (space, whether filled with water or not), and actual storage (water stored).
3. Seventy percent of rental pool payments, less Water District One administrative fees, are paid each year to participating spaceholders. The remaining 30% will be retained in an “impact fund.”
4. Each spring or summer after the reservoir system has attained maximum storage the watermaster computes the storage available to each spaceholder. The new rental pool procedures call for a second accounting in years when the system fails to fill. The parallel accounting will compute the amount of storage that each spaceholder would have had absent rentals from the common pool the preceding year. Spaceholders impacted from prior year rentals are entitled to a payment. If the spaceholder’s storage is insufficient to meet internal needs, the spaceholder may use the impact payment to rent stored water from the common pool. Impacted spaceholders have priority to rent water from the common pool. This procedure isn’t perfect and it is hard to imagine how a perfect system could be structured, other than to eliminate all rentals. To the credit of the spaceholders, they accepted this approach as a good enough pragmatic approach.
5. A tiered pricing structure was developed for rentals from the common pool. In years when the main storage reservoirs fill, the price would be \$6.30 per acre-foot to the irrigation lessee. In years when the main storage reservoirs fail to fill but water is provided to the Bureau of Reclamation for flow augmentation pursuant to the chart identified above, the price to irrigation renters would be \$14.00. In years when no water for flow augmentation is provided pursuant to the chart, the price to irrigation renters would be \$20.60.
6. Notwithstanding the flow augmentation values contained on the chart developed by Reclamation and the watermaster to govern flow augmentation leases, the Committee of Nine may elect to make more water available to the Bureau of Reclamation. In three recent years the water supply situation improved after the April 1 forecast and this provision was used.
7. Provision was made for private leases. This was necessary because with a vivid memory of previous drought conditions, the spaceholders couldn’t see their way clear

³⁹ In administering water rights on the Snake River, it has frankly proven more efficient to rent water to small users rather than devote the resources necessary to make sure they stay strictly within their water rights. It can take as much time and effort by the watermaster to regulate a small user as a large canal.

to expand the common pool by 100,000 acre-feet or more to mitigate for ground water pumping. Private leases may be negotiated with any spaceholder at an agreed upon price. The space associated with the private lease is last to fill the next year, thereby assuring non-participating spaceholders that they are not impacted.

8. Recent revisions to the rental pool procedures have made a place for the Idaho Power Company. As a last priority after assuring that all other needs are met, Idaho Power has the option to rent any remaining water in the 50,000 acre-foot common pool designated for spaceholders. The price is subject to negotiation but may be as much as \$35.00 per acre-foot, plus an infrastructure fee of \$5.00. The infrastructure fee will go into an account designated for system improvements.

FINAL OBSERVATIONS

The changes in water management in the Payette Basin over the past 20 years are nothing short of remarkable. The watermasters and the water users are to be commended for their vision, persistence, and skills as they have used the Payette Rental Pool as a tool to modernize the water delivery infrastructure in the Payette Basin. Along the way they have met external needs and contained costs incurred by the water users.

In contemplating recent rental pool changes in the Upper Snake, the Upper Snake Rental Pool has proven amazingly resilient. However, it is very difficult to fully appreciate the work done by the Upper Snake Rental Pool in grappling with drought, water calls, and flow augmentation demands. These seemingly intractable water problems were “solved” by referring them one at a time to the Upper Snake Rental Pool—a group of Idaho farmers. These farmers are obviously smart and resourceful, but they are far from experts in the esoteric provisions of federal ESA law or state water rights administration. Having worked with these farmers in the trenches as they grappled with exceedingly difficult conflicts, the authors stand in admiration of their willingness to stay engaged, their attention to detail, their pragmatism, and their willingness to compromise.