

BUILDING CONSENSUS IN IDAHO TO BENEFIT WATER QUALITY,
ENDANGERED SPECIES, THE ENVIRONMENT, AND IRRIGATION!

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ABSTRACT

Balancing the needs of the environment, endangered species, and a healthy agricultural economy within a river basin is challenging. On the Payette River in Idaho, consensus has been reached in an attempt to deal with current demands for water while protecting the reliability of irrigation water supplies.

The Payette River system includes 845,000 acre feet of storage in three reservoirs, which is used to irrigate 150,000 acres of farmland and provide minimum pools for local fisheries and recreation. A Biological Opinion issued last year by the National Marine Fisheries Service protecting the listed Snake River salmon under the Endangered Species Act calls for 427,000 acre feet of Idaho water to be released annually to augment flows on the lower Snake River to benefit migrating smolts. The past few years, 145,000 acre feet from the Payette basin has been leased annually to the local water rental pool by storage contract holders for the purpose of flow augmentation under this BiOp. Renting this water creates a problem with water quality in one of the reservoirs, which has been labeled "water quality limited" by the State of Idaho under the federal clean water act. A local water quality group on the reservoir has opposed drawdowns for flow augmentation during summer months in order to protect water quality and cold water fisheries in the reservoir. Conversely, additional flows during the summer would benefit water quality on the lower Payette River, also designated "water quality limited" by the state. Flows in the river have historically been low in the summer as a result of conserving storage water for irrigation. Low flows during the summer not only aggravate problems with water quality and local fisheries on the river, they also have the same affects downstream on Snake River reservoirs.

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In a series of meetings, representatives of all interests on the river discussed what could be done to improve overall river health. Consensus was achieved through compromise, cooperation, and communication. It was decided to split the release; about one half of the water would be released in the summer to benefit the lower river, and the balance would be released during the winter to benefit fisheries and water quality during summer months on the reservoir.

BACKGROUND

Water District No. 65 was formed in 1992 under Idaho Code as a vehicle for the State of Idaho to distribute water according to the prior appropriation doctrine to water right holders on the Payette River. A watermaster is elected annually by the water users, and is then appointed by the Director of the Idaho Department of Water Resources. The watermaster is responsible for delivery of Payette River water and overall Water District management. The Water District is funded through assessments paid by water users on the river and administrative fees charged by the rental pool. "Rental pool" refers to the statutory method by which entities may lease their storage water to other users for beneficial uses consistent with state law. Within the District, a total of 150,000 acres are irrigated by two irrigation districts, ten irrigation companies and many private diversions from the Payette River. The Payette River drains approximately 2 million acres and includes three storage reservoirs within the District (Figure 1).

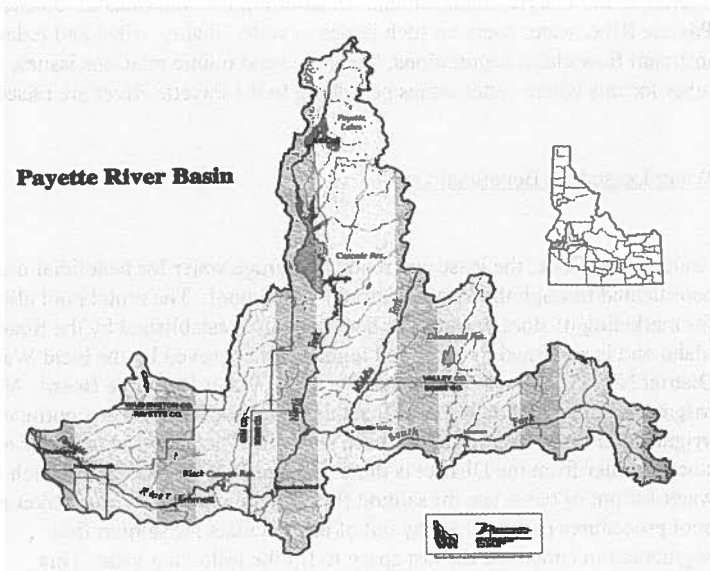


Figure 1: The Payette River Basin

Normally, the basin produces adequate natural flows to meet irrigation demands of the senior water rights on the river. Junior water rights have historically been shut off mid-summer of every year, thus creating the need for storage water. Two reservoirs, Cascade and Deadwood, were built by the U.S. Bureau of Reclamation during the 1930's and 40's and contain over 800,000 acre feet of active storage capacity, while the third reservoir, the Payette Lake system, was built in the early 1900's by a group of private water users and provides over 35,000 acre feet of storage.

A computer accounting program was developed in 1993, and is used to track river flows and calculate natural flow available for appropriation by water rights on the system. When natural flow drops below the amount being diverted from the river, storage water is released from reservoirs to maintain deliveries. During good water years, water users with storage space in the

reservoirs may lease a portion of their storage water to the rental pool. Water users without storage space may rent water from the rental pool.

Beginning in 1995, the water users of Water District No. 65 have employed a full time watermaster to coordinate water deliveries, storage accounting, and overall Water District management. In addition, the watermaster represents Payette River water users on such issues as water quality, tribal and federal instream flow claim negotiations, legislative and public relations issues, and other forums where water issues pertaining to the Payette River are raised.

Water Leased for Beneficial Use

Under Idaho Code, the lease and rental of storage water for beneficial uses is coordinated through the Water District's rental pool. The rental pool allows for marketing of storage water for beneficial uses established by the State of Idaho and is governed by rules and regulations approved by the local Water District No. 65 Advisory Board and the Idaho Water Resource Board. Many irrigators on the Payette River utilize this rental pool in order to continue to irrigate after their water right has been shut off. The other major renter of storage water from the District is the U.S. Bureau of Reclamation which rents water for out of basin use for salmon flow augmentation. Payette River rental pool procedures require that any out of basin rentals for salmon flow augmentation constitute the last space to fill the following year. This provision protects irrigation interests with junior water rights, which rely heavily upon their storage space every year, by not subjecting their refill to compete with refill of out of basin uses.

Water Quality Issues

In 1993, a lawsuit was filed against the Environmental Protection Agency by several conservation and environmental groups, arguing that the EPA had not done enough to ensure that the State of Idaho meet the requirements of the federal Clean Water Act on many of its streams and lakes. In the decision, a federal judge in Seattle issued an order in the late spring of 1994 to the EPA and the state to address this problem, listing, among others, the lower Payette River and Cascade Reservoir as high priority, water quality limited stream segments. This listing means that a Total Maximum Daily Load (TMDL) must be approved by EPA before 1998. The Idaho Legislature, in response to

the decision, enacted legislation in the spring of 1995 addressing water quality concerns on 962 stream segments in Idaho by requiring the establishment Basin Advisory Groups (BAG's) and Watershed Advisory Groups (WAG's) on individual watersheds. Members of the BAG's are appointed by the State of Idaho to oversee the formation of the WAG's, and eventually the setting of a TMDL, on each stream segment listed within a basin. The WAG's are comprised of individuals who represent the different interests on a stream segment listed as water quality limited or impaired. The WAG's, which must be authorized by their governing BAG, have the responsibility of proposing a TMDL on the stream segment they represent to the BAG and the State of Idaho for approval.

Payette River Stakeholders

Many individuals and organizations are dependent upon the Payette River system for their livelihood. Idaho Power Company is a public utility which provides electricity to irrigators, homes and businesses in Idaho, Eastern Oregon and Northern Nevada. Idaho Power Company generates most of its hydroelectric power at facilities on the Snake and Payette Rivers. All runoff from Southern Idaho eventually goes through Idaho Power's Hells Canyon complex, a series of three dams on the lower Snake River. Irrigation demands and reservoir operations impact Idaho Power Company's ability to produce and market power in the region.

Cascade Reservoir Coordinating Council represents various interests on Cascade Reservoir. Water quality, fisheries and the general health of the reservoir are concerns addressed by this council.

Many rafters, kayakers, and sportsmen use the Payette River throughout the year for recreation, fishing and hunting. Between 1983 and 1989, recreational use of the Payette River system grew by 400 percent². The North and South Forks and the Main Payette River are world-class whitewater runs for kayakers and rafters. The Payette River supports four different rafting companies acting as outfitters and guides to paying customers. In addition to the many watersports on the river, many of the drainages in the agricultural areas of the basin form wetlands and habitat for waterfowl and upland game birds for hunting. The Payette River also supports both a cold water fishery to the north and a warm water fishery to the south.

² The Idaho Statesman, "Agencies hope survey will help shape future of Payette River", by Pete Zimowsky, August 31, 1996.

FLOW AUGMENTATION FOR ENDANGERED SALMON

In 1995, the National Marine Fisheries Service (NMFS) issued a new biological opinion on how to save the endangered salmon runs in the Snake River. The opinion called for 427,000 acre feet of storage water, to be rented or purchased from willing sellers from the upper Snake River basin. The water would be accounted for downstream to meet flow targets at the Lower Granite Dam on the lower Snake River near Lewiston, Idaho.³ In theory, the water would be released from upper reservoirs during fish passage periods to augment the flows at Lower Granite in order to speed the salmon smolts on their journey to the Pacific Ocean. Of the total 427,000 acre feet of water from the upper Snake River basin, approximately 145,000 acre feet are to be rented from the Payette River basin. Idaho Power Company, in association with the Bonneville Power Administration, rented flows from the upper Snake for this effort from 1990 through 1994. This was accomplished by the passage of special legislation by the Idaho Legislature to allow the use of rented storage water for downstream out-of-basin endangered salmon flow augmentation. The original legislation expired on December 31, 1995. In order to meet the new biological opinion's flow targets, new legislation had to be drafted and passed by the Idaho Legislature. A consortium of water users, legislators, governmental representatives and attorneys representing various water interests developed a bill to allow for flow augmentation efforts to continue until the year 2000. Under this bill, which became law in 1996, the water must be rented from the local rental pools designated and approved by the State of Idaho and must be from willing sellers. The water is subject to the procedural rules each local rental pool has established, such as last to fill requirements for out of basin use. Finally, the special legislation must be renewed by the end of 1999, when the current biological opinion expires, in order for continued flow augmentation to occur.

FLOW AUGMENTATION TIMING

³ National Marine Fisheries Service, "1995 Biological Opinion for the Restoration of the Endangered Snake River Salmon", April, 1995.

Timing of the salmon flow augmentation water has been an issue of debate. The biological opinion NMFS issued on the endangered salmon species in the Snake River calls for a technical management team, which includes representatives from all the action agencies involved with the salmon recovery efforts, to "call" for the water when conditions warrant additional flows in the Snake River at Lower Granite Dam. The salmon water comes from various sources in the upper Snake River basin, including several reservoirs in Eastern Idaho, as well as reservoirs on the Boise and Payette Rivers. Coordinating the release of water from these reservoirs at the correct time has been problematic for water managers. To facilitate the release of the flow augmentation water, Idaho Power Company has utilized their Brownlee Reservoir on the Snake River, located below all irrigation facilities in the upper Snake basin, to release fish flows when called for. In order for Idaho Power Company to release water for fish flow augmentation without bearing the financial burden associated with lost powerhead and shifted seasonal generation pattern, Bonneville Power Administration and Idaho Power Company annually enter into an agreement, whereby BPA compensates Idaho Power for these lost revenues by replacing that lost power during winter months, a high demand period.

CASCADE RESERVOIR WATER QUALITY

Cascade Reservoir is a large, shallow reservoir in Central Idaho with a total capacity of 680,411 acre feet, and an active capacity of 636,004 acre feet⁴. Many summer homes have been built around the reservoir and fishing and other water sports are enjoyed by many on the reservoir. The reservoir was built to support irrigation in the lower Payette River valley and for power generation at both the Idaho Power Company facility on the dam itself and the U. S. Bureau of Reclamation facility downstream at Black Canyon Dam. The watershed above Cascade Reservoir produces an average annual runoff of 732,550 acre feet⁵. In the eighties and nineties, there were several dry years which compounded water quality problems in the reservoir. During 1994, one of the worst drought years on record for the Payette Basin, water quality in the reservoir declined significantly due to a large drop in the water levels and hot summer temperatures. This drop in water levels was caused by high

⁴ Bureau of Reclamation, *Cascade Reservoir 1995 Sedimentation Survey*, by Ronald L. Ferrari, May, 1996.

⁵ Ibid.

irrigation demand due to below average natural flows in the Payette River, and the release of flow augmentation water for salmon migration on the Lower Snake River. With high levels of phosphorus flowing into the reservoir from various sources, many fish and even some cattle grazing around the reservoir were killed by toxic algae blooms.

As a result, the Cascade Reservoir Coordinating Council was formed to address the water quality problems in the reservoir. The group is a grassroots effort by property owners and business leaders whose livelihood and investments depend upon tourism and recreation on the reservoir. The negative publicity resulting from the deteriorating water quality in the reservoir had affected the area tourist industry, causing lost revenues and declining property values to local residents. Many point and non-point sources of pollutants were identified. These sources are currently being dealt with, including the upstream city of McCall sewage treatment plant, a major contributor of phosphorus to the reservoir.⁶ Best management practices (BMP's), practices which, when applied to normal operations, enhance the quality of runoff or excess waters from these operations, were instituted on several of the drainages to the reservoir, as well as cost-share programs for improvements to water delivery and return flow systems on these drainages. Funds for these improvements have been secured from federal and state programs under the Clean Water Act. A total of \$2.8 million has been funded for FY95 and FY96 for restoration activities on the reservoir. Another \$7.7 million has been planned for the modification of the McCall sewage treatment plant upstream of the reservoir.⁷

During 1995, as a result of water quality legislation passed by the Idaho Legislature, the Cascade Reservoir Coordinating Council was appointed the official WAG, and is responsible for setting the TMDL on the reservoir.

LOWER PAYETTE RIVER WATER QUALITY

The lower Payette River was also designated a "water quality limited" stream segment in 1995, and consequently was listed as a high priority stream segment within the State of Idaho under the federal Clean Water Act. A WAG was formed in order to begin setting a TMDL. The WAG is currently

⁶ *Cascade Reservoir Watershed Management Plan*, Idaho Division of Environmental Quality, October, 1995.

⁷ *ibid.*

monitoring the river, gathering additional information on water quality in order to establish this TMDL. Return flows from surrounding irrigated agricultural lands have historically been a source of sediment, nutrients and bacteria on the lower Payette. These water quality problems are intensified by low flows associated with the operation of the river to deliver water to irrigation diversions. Currently, the Idaho Department of Agriculture is coordinating an effort with several local, state and federal agencies to characterize the water quality of return flows in the agricultural drains. As a result, many irrigators and livestock producers have implemented best management practices to reduce the amount of pollutants entering these drains which flow back to the river. Cost-share programs were used to initiate many of these BMP's, but an increasing number of established BMP's are voluntary efforts by local farmers to help mitigate the water quality concerns on the river.

FLOW AUGMENTATION AND WATER QUALITY - THE PROBLEM

With the advent of flow augmentation rentals from the rental pool, several of the water quality problems on the river have been magnified. During the 1993 water year, the flow augmentation water was released in the summer months to meet downstream requirements at Lower Granite Dam on the lower Snake River. During this year, the reservoirs filled and the summer weather was cool and wet, lessening the need for any water quality improvements to the river or Cascade Reservoir. In 1994, flow augmentation water was again released during the summer months. This year was hot and dry, and the effect of the summertime release was devastating to the reservoir, though the effect on the river was positive. In 1994, Cascade Reservoir did not fill to capacity, and irrigation demand was high. Storage water, normally called for in mid-July, was called for on June 12. Coupled with the summertime fish release, reservoir levels were lowered quite rapidly. Hot summer temperatures at the reservoir and the low water levels resulted in large algae blooms throughout the entire reservoir. As a result, during 1995, the Bureau of Reclamation held the flow augmentation water in Cascade Reservoir for wintertime release, thus keeping reservoir levels high throughout most of the summer months. The 1995 water year was extremely good, with above average snowfall and runoff. Water quality during 1995 in the reservoir was improved, with the

reservoir meeting temperature standards for cold water fisheries for the first time in many years.⁸

Water quality on the lower Payette River, however, was not as good. Flows were managed to conserve storage water for rental out of basin and to maximize storage water carryover. The Payette River is operated to maintain an operational flow of 135 cubic feet per second at Letha, Idaho, located about 7 miles downstream of Emmett, Idaho (Figure 1). This operational flow at Letha allows for deliveries of water above and below Letha. Return flows from agricultural drains discharge to the river below Letha, resulting in sufficient flows to fill all natural flow rights. At this minimum flow, however, return flows from agricultural drains also cause temperature and sediment problems in the lower reach. Under existing water quality laws, this degradation of water quality by irrigation practices placed the burden on agriculture to improve the quality of return flows to the river. As a result, many BMP's approved by the state's Department of Agriculture, which include the use of polyacrylimide compounds (PAM) and straw mulching of irrigation furrows which reduce the levels of sediment and nutrients in the tail waters of treated fields, have been adopted by area farmers in an effort to help meet water quality standards. The impact of the few BMP's put into place on area farmland is already felt at the river, with a definite improvement in water quality in the major agricultural drains. However, the widespread use of BMP's on irrigated acres within the lower Payette basin is many years away, at best.

FLOW AUGMENTATION AND WATER QUALITY - ONE APPROACH

With the listing of the lower Payette River as a water quality limited segment by the State of Idaho, the Cascade Reservoir Coordinating Council called for a meeting with the Water District and federal and state agencies involved with water quality and salmon recovery. The meeting included federal representatives from Bureau of Reclamation, U.S. Fish and Wildlife, Bonneville Power Administration, state representatives from the Division of Environmental Quality, Fish and Game, and representatives from Idaho Power Company. The meeting focused on the Coordinating Council's concern that improving water quality in Cascade Reservoir may be at the

⁸ Quote from Don Anderson, Idaho Fish and Game, "*Pact puts water back into Payette River*", by Stephen Stuebner, Star News, August 8, 1996.

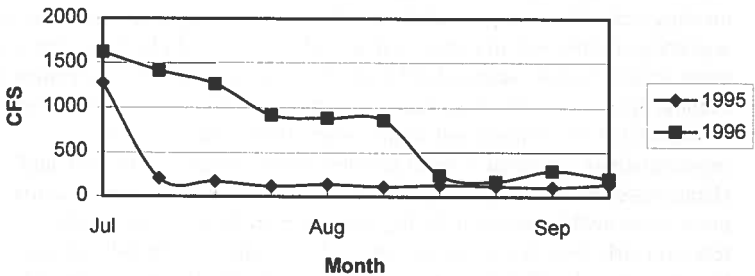
expense of water quality in the lower reach of the river, since holding water in Cascade Reservoir during the summer negatively impacted water quality in the lower Payette River. Also, the higher reservoir levels in 1995 resulted in some erosion of the reservoir banks when a series of storms hit the area. The group agreed to split the flow augmentation releases in 1996. Some of the water would be released in the summer to benefit the lower river and the remaining water would be released in the winter to allow for higher reservoir levels during summer months. Many other issues needed to be addressed including the agreement between Idaho Power Company and Bonneville Power Administration (BPA) to shape flows out of Idaho Power Company's Brownlee Reservoir. This agreement was crucial to a split release. If the shaping agreement was not in place, all salmon water released from Cascade Reservoir would be required in the late spring and summer months, when called for by the Technical Committee. Using Idaho Power reservoirs on the Snake for timing flows, and replacing those flows with water from upper reservoirs such as Cascade, provides the flexibility to address the concerns previously mentioned. The amount of water to be released in the summer and the winter for a split release needed to be determined. This required a review of snowpack and a review of existing water quality data from Cascade Reservoir to determine an acceptable split.

After analyzing the expected runoff of the snow pack, which was excellent for 1996, and reviewing the status of the shaping agreement, a final meeting was held three weeks before the release of storage flows was to begin. During this meeting Idaho Power representatives informed the group that an agreement was being drafted and all parties had agreed to sign. The efforts to improve water quality on both segments of the river were an incentive to negotiate the shaping agreement. The final task was to agree on the percentages of water to be released in the summer and winter, respectively. Idaho Power representatives requested a 70/30 summer/winter release; Idaho Fish and Game personnel at Cascade argued for a 30/70 release, indicating that the more water held in-reservoir during summer months the better for the reservoir fisheries. It was decided that a 50/50 release, with half released in the summer and half in the winter, was acceptable to all parties. The fish release began in early July and continued through August. Idaho Power indicated that, during September through November, they do not want any flow augmentation water released into their Snake River reservoirs, as any flows downstream of those reservoirs during this time period affected the nesting fall chinook. Excess water released during nesting periods must continue during the entire nesting period in order to avoid an "incidental take" of that endangered species. Failure to maintain the flow could subject Idaho Power to penalties under the ESA.

RESULTS OF THE SPLIT RELEASE

In the summer of 1996, a total of 75,168 acre feet of storage water was released for salmon flow augmentation through the local rental pool. The remaining 76,132 acre feet will be released during winter months to complete the flow augmentation water rented from the Water District's rental pool. The effect of this split release on water quality in the lower Payette River and Cascade Reservoir are not yet available but public reaction has been positive. According to Stephen Stuebner, a reporter for the Star News in McCall, Idaho, increased recreation on the lower Payette River was noted throughout the summertime salmon release. In an article published by the Star News, Stuebner wrote that the split release resulted in "...a river flow of 1,400 cubic feet per second at Letha, compared to less than 100 cfs a year ago" (see Figure 2). According to the article, the release allowed the Payette River to run "full and wide", with an increase in the number of people enjoying the river at Letha, a contrast to 1995, "...when the river was reduced to a tiny trickle."⁹ The previous year, Stuebner had written an article complaining about the lack of water in the lower river in order to conserve storage water in Cascade Reservoir.¹⁰

Flows at Letha Gage

Figure 2: Flows at the Letha Gage, Lower Payette River¹¹

Additional benefits include increased power production at the two hydroelectric generating facilities on the river: at Cascade Dam and at Black

⁹ Star News, "Pact puts water back into Payette River", by Stephen Stuebner, August 8, 1996

¹⁰ Star News, "Lower Payette River suffers from Cascade Reservoir hold-back", by Stephen Stuebner, October 5, 1995.

¹¹ U.S. Bureau of Reclamation data.

Canyon Dam. Power from Black Canyon Dam benefits the Black Canyon Irrigation District and the Emmett Irrigation District as they use power generated at the dam to operate pumps on their delivery systems. If power is not produced during summer months by this facility, these two irrigation districts have to purchased power "wheeled-in" from other sources, at a higher price than locally produced power.

Also, increased flows during July and August on the Payette River benefits a burgeoning whitewater industry. Both private and commercial outfitters were ecstatic about river operations during 1996. In an article written for The Idaho Statesman newspaper in Boise, Idaho, Pete Zimowsky, the Statesman's outdoor recreation editor, stated that "Rafters can be thankful for good flows..." on the Payette River this season, citing the agreement to split the salmon release from area reservoirs and mentioning the "'win-win' situation for rafting, fishing, water quality, and the endangered salmon."¹²

THE PAYETTE RIVER WATERSHED COUNCIL

In addition to water quality and recreational benefits, another significant achievement to come from the agreement to split the salmon flows is the formation of the Payette River Watershed Council. Membership on the Council consists of representatives from the Cascade Reservoir Coordinating Council, upper basin interest groups, hydropower utilities, the kayaking and rafting community, Idaho river advocacy groups, and irrigation interests on the river through Water District No. 65. An effort is underway to identify and include a number of other Payette River stakeholders on the council, such as recreational mining interests, cities and counties bordering the river, and livestock grazing interests. A draft mission statement reveals the purpose of such a council: "The Payette River Watershed Council is a forum for the open communication and sharing of information concerning the Payette River and its watershed. The purpose of the Council is to encourage and promote a healthy and viable watershed by striving to build understanding, respect for, and consensus among all of the interests in the watershed." The Payette River Watershed Council will negotiate any future agreements on flow augmentation releases, as well as inform and educate the public about the Payette River and its operations.

¹² The Idaho Statesman, "Conditions near perfect for whitewater players", by Pete Zimowsky, August 8, 1996.

Groups such as the Payette River Watershed Council will be in the forefront as more and more demands are placed on our limited water resources. It has been our experience throughout the year that all stakeholders on the river benefit from the added communication and spirit of cooperation associated with this approach to water management. In good water years, it is much easier to meet the wide variety of needs on a river system such as the Payette. And in preparing for drought years to come, it is imperative that all water interests establish credibility with each other to successfully survive difficult times. The future of water management in the West, and the destiny of irrigated agriculture in Idaho, will depend on our ability as water managers to build consensus among the stakeholders in the decision making process. When irrigated agriculture takes the lead in this process, it succeeds in maintaining its credibility and productivity through the difficult times of continually increasing demands on precious water resources.