# Bureau of Reclamation
# 2008 Salmon Flow Augmentation Program
# and
# Other Activities Associated
# with the
# National Marine Fisheries Service
# 2005 Biological Opinion and Incidental Take Statement
# for
# Operations and Maintenance of Bureau of Reclamation Projects in the Snake River Basin above Brownlee Reservoir

# Annual Progress Report

**December 12, 2008**

**U.S. Department of Interior**
**Bureau of Reclamation**
**Pacific Northwest Region**
**Snake River Area**

## INTRODUCTION

NOAA's March 31, 2005 biological opinion and incidental take statement (2005 Upper Snake BiOp) addresses the operation of Reclamation's upper Snake projects. The incidental take statement included reasonable and prudent measures (RPMs) and associated terms and conditions to minimize incidental take to 13 listed salmon and steelhead Evolutionary Significant Units (ESUs).

In 2005, American Rivers and others filed a suit alleging Administrative Procedures Act and ESA violations *(American Rivers vs. NOAA)*. The Oregon US District Court (Court) found in favor of American Rivers. On September 26, 2006 the Court issued an Opinion and Order of Remand for the 2005 Upper Snake BiOp without vacatur while a new BiOp was written.

On May 5, 2008, NOAA Fisheries released a new biological opinion (2008 Upper Snake BiOp) for the continued operation and maintenance of Bureau of Reclamation projects in the Snake River Basin above Brownlee Reservoir. When the 2008 Upper Snake BiOp was issued water operations for 2008 were already underway in accordance with the 2005 Upper Snake BiOp. It was decided by Reclamation (with concurrence in regional forums and the Court) to continue with the water operations in accordance with the 2005 BiOp and begin implementation of the 2008 BiOp in the new water year starting October 2008.

This document reports the status of activities related to the incidental take statement in the 2005 BiOp, including Reclamation's flow augmentation program, status of new contracts, coordination activities, and conservation activities. This report meets Reclamation's responsibility to submit an annual progress report by December 31 of each year.

## RECLAMATION'S 2008 SALMON FLOW AUGMENTATION PROGRAM

### Overview of Salmon Flow Augmentation Program

Reclamation was able to provide 487,000 acre-feet of water for flow augmentation in 2008 (See Table 1). Procurement of the full 487,000 acre-feet required considerable cooperation, and in some cases extraordinary actions, such as extra rental water made available by irrigators, utilization of powerhead space, and usage of water normally dedicated for winter instream flows.

November carryover storage from 2007 was below average in the Payette basin (88%) and in the Boise basin (64%), and very low in the Upper Snake basin above Milner (36%). Mountain snowpacks accumulated at a near average rate throughout the winter months, but conditions turned very dry and cool during the spring runoff period, thus reducing yields and eliminating the potential for large runoff volumes. Nonetheless, snowpacks were robust enough to provide near average spring runoff in 2008. Abnormally cool temperatures delayed the spring freshet several weeks beyond the typical early April start. Unregulated runoff for the April through July period was 102

percent of average for the Snake River at Heise, 105 percent for the Payette River at Horseshoe Bend, and 91 percent for the Boise River near Boise.

Of the three major reservoir systems, the Payette and Boise both refilled in 2008, and the Upper Snake system filled to about 85% of physical capacity. Sufficient water was available to Reclamation to provide 487,000 acre-feet, the upper limit of flow augmentation to be provided in any given year. The 487,000 acre-feet includes 60,000 acre-feet of natural flow rights, a small portion (10,500 acre-feet) of which is considered to occur outside of the April 3 to August 31 migration period.

## In Season Management Considerations for Meeting Augmentation Targets

Reclamation manages its in-season storage releases for flow augmentation relying on the best data available at the time in order to set release rates. Reclamation utilizes preliminary water rights accounting provided by the State of Idaho to estimate volumes available in storage accounts and amounts delivered. This accounting is provisional and subject to change at a later date when data are finalized and after-the-fact accounting is completed. Therefore, while it is difficult to deliver the precise targeted volume on a real time basis, Reclamation strives to come as close as possible, with a typical margin of error of less than one percent

Table 1 summarizes the source, amount, and timing for Reclamation's 2008 salmon flow augmentation program.

**Table 1. Summary of Reclamation's 2008 Salmon Flow Augmentation Program.**

| SOURCE | AMOUNT (acre-feet) | DATES OF DELIVERY |
|---|---|---|
| **Upper Snake above Milner Dam** | | |
| Reclamation Uncontracted Space | 18,282[1] | July 5 - August 13 |
| Reclamation Powerhead Space | 0 | |
| Rentals – Water District 01 | 165,000 | |
| Rentals – Tribes | 0 | |
| ***Subtotal*** | ***183,282*** | |
| **Payette** | | |
| Reclamation Space | 112,388[2] | June 30 – August 30 |
| Rentals | 65,000[3] | |
| ***Subtotal*** | ***177,388*** | |
| **Boise** | | |
| Reclamation Uncontracted Space | 40,932 | July 1 -August 20 |
| Reclamation Powerhead Space | 6,749 | |
| Rentals | 1,000 | |
| ***Subtotal*** | ***48,681*** | |
| **Natural Flows** | | |
| IWRB Lease (Idaho) | 60,000[4] | April 3 – August 31 |
| Skyline Farms (Oregon) | 17,649 | |
| ***Subtotal*** | ***77,649*** | |

| | | |
|---|---|---|
| **TOTAL** | **487,000** | |

[1] 2,800 acre-feet of this total was provided from the Payette basin through an exchange agreement between the Black Canyon Irrigation District and the Idaho Water Resources Board, allowing the IRWB to retain an equivalent volume of upper Snake water for conjunctive management issues.
[2] Includes 95,000 acre-feet of uncontracted space dedicated to flow augmentation, and 17,388 acre-feet from the Deadwood Reservoir instream flow account provided in lieu of Anderson Ranch powerhead. See section titled "Powerhead Space".
[3] In addition, 2,800 acre-feet was supplied for the exchange agreement detailed in footnote 1.
[4] See section titled "Lease of Natural Flow Water Rights Below Milner Dam."

## Uncontracted Space and Space Reacquired for Flow Augmentation

All uncontracted and reacquired space dedicated to flow augmentation was fully released during the previous (2007) water year. Reclamation's 95,000 acre-feet of uncontracted space assigned to flow augmentation in the Payette system fully refilled, as did its 40,932 acre-feet of space reacquired for flow augmentation in the Boise system reservoirs. Reclamation's storage space in the Upper Snake above Milner accrued 18,282[1] acre-feet (out of a total of 22,896 acre-feet).

Reclamation provided all accrual in Reclamation held space assigned to flow augmentation to the 2008 flow augmentation program.

The 17,649 acre-feet of natural flow rights Reclamation has acquired in Oregon (Skyline Farms) were fully available again in 2008.

## Rentals from Shoshone–Bannock Tribes

The Shoshone-Bannock Tribes have contract space in American Falls Reservoir. They are able to rent water from this space for downstream uses in accordance with the terms of the Fort Hall Water Rights Settlement of 1990. Tribal policy requires that on-reservation water needs are served first. The Tribes' space in Palisades Reservoir is usually adequate to meet their irrigation requirements, freeing up the space in American Falls Reservoir for potential rental. Reclamation and the Tribes were not able to come together on rentals consistent with the price stipulated in the Nez Perce Settlement so no rental of Tribal storage water occurred in 2008. However, Idaho Power Company executed a late season lease with the Tribe at a price well above that stipulated in the Nez Perce Settlement and released this volume beginning immediately upon the conclusion of Reclamation's augmentation releases at Milner Dam on August 13. This and other Idaho Power Company rentals provided additional flows at Milner Dam throughout August, but are not included in Reclamation's 487,000 acre-foot volume.

## Annual Rentals

[1] Based on provisional IDWR water accounting. These values may change slightly when the 2008 accounting is finalized.

Reclamation relies heavily each year on annual rentals from water users to acquire water for its flow augmentation program. Water availability from the Water District 01 Rental Pool (Upper Snake above Milner Dam) is determined by a chart (Attachment 1) that considers carryover storage on November 1 and the April 1 runoff forecast for the Snake River at Heise to determine contributions to the rental pool for the flow augmentation program. Use of this chart was enacted after negotiation of the Nez Perce Water Rights Settlement and is fully consistent with Reclamation's description of its flow augmentation program in its 2004 and 2007 Upper Snake Biological Assessments.

In 2008, the chart specified that Water District 01 would make available 150,000 acre-feet of rental water for flow augmentation. Carryover from 2007 on November 1 was 703,752 acre-feet, and the April 1 runoff forecast was 4,260,000 acre-feet (102 percent of average) for the April through September period. Actual runoff turned out to be 103 percent of average. Through cooperation from the irrigators and the State, Reclamation was able to rent an additional 15,000 acre-feet beyond what the chart specified, greatly helping Reclamation's ability to meet the 487,000 acre-foot goal.

In the Payette basin, 65,000 acre-feet was made available and rented by Reclamation, and 1,000 acre-feet was rented from the Boise basin in 2007, the first time rental water has been made available from this basin.

## Powerhead Space

As part of the Nez Perce Water Rights Settlement, Reclamation may utilize powerhead space in Palisades Reservoir and Anderson Ranch Reservoir for flow augmentation. In order for Palisades Reservoir powerhead space to be used, the sum from all other sources must be less than 427,000 acre-feet, and this powerhead space cannot be used to exceed a flow augmentation total of 427,000 acre-feet. It is anticipated that this powerhead space will be used infrequently. However, it was necessary to use 87,450 acre-feet of Palisades powerhead in the previous year (2007), and the water right for this space did not refill in 2008. It was not necessary to use any additional Palisades powerhead space in 2008.

Use of powerhead space from Anderson Ranch Reservoir is less restrictive, and can be used to provide flow augmentation volumes in excess of 427,000, if available. Drought conditions in the prior year (2007) required use of 19,195 acre-feet of this space, but 2008 inflows were adequate to fully refill this account. Reclamation considers use of this powerhead space to be undesirable due to the difficulty in refilling the water right the following year and the potential for shutting down the powerplant during a continuing drought. Given the better water supply conditions in the Payette basin in 2008, Reclamation decided there was less risk in utilizing 15,000 acre-feet from the Deadwood Reservoir instream flow account in lieu of Anderson Ranch powerhead space. Nonetheless, it was still necessary to use 6,749 acre-feet of Anderson Ranch powerhead in 2008 in order to provide the full 487,000 acre-feet goal.

## Lease of Natural Flow Water Rights below Milner Dam

The Nez Perce Water Rights Settlement authorized the use of up to 60,000 acre-feet of natural flow rights downstream of Milner Dam for the purpose of flow augmentation. In better water years, this will increase the volume of water available for augmentation. In 2005 the Idaho Water Resources Board (IWRB) purchased approximately 98,000 acre-feet of water rights from the Bell Rapids Mutual Irrigation Company; this is water that served roughly 25,000 acres via high-lift pumps. Reclamation then entered into a 30-year lease with the State for 60,000 acre-feet of this water for salmon augmentation (IWRB Lease in Table 1).

Flow augmentation from natural flow rights downstream of Milner Dam occurs during the entire irrigation season, roughly April 1 to October 31. The IWRB Lease of 60,000 acre-feet is comprised of 49,500 acre-feet estimated to occur within the Apri1 3 to August 31 period, and 10,500 acre-feet estimated to occur before and after the migration period. Even though these 10,500 acre-feet are delivered outside the April 3 to August 31 period, it provides an instream benefit and continued flow augmentation.

## Timing Considerations for Flow Augmentation Releases

The timing of flow augmentation releases depended on the individual basin and source of water. As discussed in the previous section, the 60,000 acre-feet of natural flow rights from the IWRB was provided for augmentation during the irrigation season, which ends on October 31.

Augmentation releases from storage in the Upper Snake past Milner Dam began on July 5, when flow would have otherwise gone to 0 cubic feet per second (cfs). Releases remained in the 230 cfs to 430 cfs range for several days before ramping up at roughly 700 cfs a day at Milner Dam[2] until a target of 3,100 cfs was reached. Daily fluctuations occurred, but the average release rate was 3,140 cfs from July 12 to July 27, when outflow was adjusted down over several days to 2,040 cfs. The delivery of augmentation water from the Upper Snake above Milner Dam was completed on August 13; however, the release from Milner Dam remained at about 2,000 cfs for the rest of August as Idaho Power Company released water it had rented.

Augmentation flows began on the Boise system on July 1 and ended by August 20, with an average delivery rate of about 500 cfs above irrigation demand. Augmentation releases from the Payette system began on June 30 and ended by August 30, with an average delivery rate of about 1500 cfs above irrigation demand.

To the extent possible, Reclamation will strive to benefit local resources when implementing its proposed actions while also meeting its obligations under the biological opinion and incidental take statement.

## November 1 Carryover

[2] Milner Dam is private and not operated by Reclamation. Reclamation coordinates releases from its upstream projects, primarily at American Falls Dam, to accomplish the desired ramping rates at Milner Dam.

At the end of the 2008 irrigation season (November 1, 2008), the carryover storage into the 2009 water year was as follows:

| | |
|---|---|
| Upper Snake above Milner Dam | 1,696,237 acre-feet |
| Boise River system | 398,132 acre-feet |
| Payette River system | 461,619 acre-feet |

## OTHER REASONABLE AND PRUDENT MEASURES

NMFS's incidental take statement contains two other RPMs and associated terms and conditions to ensure that Reclamation implements its salmon flow augmentation program as described in its Upper Snake BA and supporting documents.

### New Contracts for Water Stored in Reclamation Projects

RPM 10.4.1 states

> Because Reclamation's salmon flow augmentation program is heavily dependent on annual water rentals from Idaho's water rental pools, which is a variable and insecure source, Reclamation must consult with NMFS whenever a new contract would reduce streamflows or reduce Reclamation's ability to meet salmon flow augmentation commitments, as described in its proposed actions, or whenever Reclamation otherwise determines that listed salmon or steelhead species or critical habitat may be affected.

NMFS Upper Snake BiOp at page 10-2.

NMFS's intent is to ensure that any contract actions taken by Reclamation result in "an improvement or 'zero net impact' on Snake River flows and on Reclamation's ability to provide up to 487,000 acre-feet for salmon flow augmentation."

Reclamation committed in its May 2005 Decision Document to consult with NMFS before entering into new, renewed, or supplemental contracts for storage water, if Reclamation determined that it would affect its ability to provide salmon flow augmentation water as described in the 2005 Upper Snake BA, or if it determined that listed species or critical habitat may be adversely affected.

In the past year, Reclamation has not entered into any new contracts for uncontracted space in any of the reservoirs covered in the Upper Snake BiOp. Further, Reclamation has not entered into any renewed or supplemental contracts for storage water that would result in reduced streamflows or affect Reclamation's ability to meet its salmon flow augmentation commitments.

### Annual Coordination of the Salmon Flow Augmentation Program

RPM 10.4.2 states

> The USBR must continue to coordinate annually with the Technical Management Team (TMT) and Regional Forum when planning and implementing its annual salmon flow augmentation program.

NMFS Upper Snake BiOp at page 10-2.

Reclamation continued to coordinate with the Technical Management Team and Regional Forum when planning and implementing its 2008 annual salmon flow augmentation program. Reclamation staff regularly attended these meetings and provided estimates and updates of the salmon flow augmentation program acquisitions and delivery.

## CONSERVATION RECOMMENDATIONS

NMFS included voluntary conservation recommendations in its Upper Snake BiOp at page 9-1, recommending Reclamation's participation in Total Maximum Daily Load (TMDL) planning efforts in the upper Snake River basin. In its May 2005 Decision Document, Reclamation noted that it was generally amenable to implementing the Conservation Recommendations to the extent funding and staffing can be made available within its existing authorities. The following summarizes relevant activities that Reclamation has been involved over the past year.

As part of the Idaho and Oregon's on-going TMDL development and implementation activities, Snake River Area Office and/or Pacific Northwest Region Reclamation staff continued to participate in all appropriate watershed advisory group and watershed council meetings in the upper Snake River Basin. These included activities in the Lower Boise River, North Fork Payette River, Lower Payette River, Mid Snake River, Lake Walcott, and American Falls Reservoir Watershed Advisory Groups, as well as the Owyhee/Malheur Watershed Council.

Reclamation continued to provide technical assistance to irrigation system operators and other appropriate entities throughout its project areas in the Upper Snake River basin. Reclamation's Pacific Northwest Region Laboratory also provided financial assistance for analytical laboratory services to several entities in the basin in 2008. These entities included:

- Idaho Department of Environmental Quality
- Oregon Department of Environmental Quality
- U.S. Geological Survey
- Aberdeen Springfield Irrigation District
- Owyhee Watershed Council
- Lower Boise River Watershed Council
- A & B Irrigation District

- Minidoka Irrigation District
- Lake Walcott Watershed Advisory Group
- Malheur Soil & Water Conservation District

**Upper Snake Temperature Monitoring - Project Summary**

In coordination with the U.S. Geological Survey, Reclamation continued to operate a comprehensive basin-wide temperature monitoring study for the upper Snake River basin. Data collection at 52 sites in the upper Snake River and major tributaries was initiated in 2004 and will continue through at least through 2010. An interim summary of the data collected thus far was prepared in 2007 and further updated in 2008. The project will culminate with a completion report describing temperature conditions in the upper Snake River and relationships to storage, irrigation, and hydropower facilities in the basin.

## REFERENCES

National Marine Fisheries Service. 2005. *Biological Opinion and Magnuson-Stevens Fishery Conservation and Management Act Consultation – Consultation for the Operation and Maintenance of 12 U.S. Bureau of Reclamation Projects in the Upper Snake River Basin above Brownlee Reservoir*. F/NWR/2004/01900. March 31, 2005. NMFS, Northwest Region, Portland, OR.

Reclamation. 2004. *Biological Assessment for Bureau of Reclamation operations and Maintenance in the Snake River Basin above Brownlee Reservoir*. November 2004. Reclamation, Pacific Northwest Region, Snake river Area, Boise, ID.

Reclamation. 2005. "Decision Document Concerning the NMFS Biological Opinion and Magnuson-Stevens Fishery Conservation and Management Act Consultation, Consultation for the Operations and Maintenance of 12 U.S. Bureau of Reclamation Projects in the Upper Snake River Basin above Brownlee Reservoir- March 2005." May 5, 2005. Reclamation, Pacific Northwest Region, Snake River Area, Boise, ID.

# Attachment 1
## Stipulated Augmentation Rental -Water District 01

**Stipulated Augmentation Rental Dist 01**

| November 1 Carryover 1000s af | <---------- April 1 Heise Forecast (Apr-Sep) 1000s af ----------> | | | | | | |
|---|---|---|---|---|---|---|---|
| | < 2,450 | < 2,920 | < 3,450 | < 4,208 | < 5,042 | < 5,670 | > 5,670 |
| 0 | 0 | 0 | 0 | 0 | 150000 | 185000 | 185000 |
| 100 | 0 | 0 | 0 | 0 | 150000 | 185000 | 185000 |
| 200 | 0 | 0 | 0 | 0 | 150000 | 185000 | 185000 |
| 300 | 0 | 0 | 0 | 0 | 150000 | 185000 | 185000 |
| 400 | 0 | 0 | 0 | 0 | 150000 | 185000 | 185000 |
| 500 | 0 | 0 | 0 | 0 | 150000 | 185000 | 185000 |
| 600 | 0 | 0 | 0 | 60000 | 150000 | 185000 | 185000 |
| 700 | 0 | 0 | 0 | 60000 | 150000 | 185000 | 185000 |
| 800 | 0 | 0 | 0 | 60000 | 150000 | 185000 | 185000 |
| 900 | 0 | 0 | 60000 | 60000 | 150000 | 185000 | 185000 |
| 1,000 | 0 | 0 | 60000 | 60000 | 150000 | 185000 | 185000 |
| 1,100 | 0 | 0 | 60000 | 60000 | 150000 | 185000 | 185000 |
| 1,200 | 0 | 0 | 60000 | 60000 | 150000 | 185000 | 185000 |
| 1,300 | 0 | 0 | 60000 | 60000 | 150000 | 185000 | 185000 |
| 1,400 | 0 | 0 | 60000 | 60000 | 150000 | 185000 | 185000 |
| 1,500 | 0 | 0 | 100000 | 150000 | 185000 | 185000 | 185000 |
| 1,600 | 0 | 0 | 100000 | 150000 | 185000 | 185000 | 185000 |
| 1,700 | 0 | 0 | 100000 | 150000 | 185000 | 185000 | 185000 |
| 1,800 | 0 | 0 | 100000 | 150000 | 185000 | 185000 | 185000 |
| 1,900 | 0 | 0 | 100000 | 150000 | 185000 | 185000 | 185000 |
| 2,000 | 0 | 0 | 100000 | 150000 | 185000 | 185000 | 185000 |
| 2,100 | 0 | 0 | 100000 | 150000 | 205000 | 205000 | 205000 |
| 2,200 | 0 | 0 | 100000 | 150000 | 205000 | 205000 | 205000 |
| 2,300 | 0 | 0 | 100000 | 150000 | 205000 | 205000 | 205000 |
| 2,400 | 0 | 0 | 100000 | 150000 | 205000 | 205000 | 205000 |
| 2,500 | 0 | 0 | 100000 | 150000 | 205000 | 205000 | 205000 |
| 2,600 | 0 | 0 | 185000 | 185000 | 205000 | 205000 | 205000 |
| 2,700 | 0 | 0 | 185000 | 185000 | 205000 | 205000 | 205000 |
| 2,800 | 0 | 0 | 185000 | 185000 | 205000 | 205000 | 205000 |
| 2,900 | 0 | 0 | 185000 | 185000 | 205000 | 205000 | 205000 |
| 3,000 | 60000 | 60000 | 185000 | 185000 | 205000 | 205000 | 205000 |
| 3,100 | 60000 | 60000 | 185000 | 185000 | 205000 | 205000 | 205000 |
| 3,200 | 100000 | 100000 | 185000 | 185000 | 205000 | 205000 | 205000 |
| 3,300 | 100000 | 100000 | 185000 | 185000 | 205000 | 205000 | 205000 |
| 3,400 | 100000 | 100000 | 185000 | 185000 | 205000 | 205000 | 205000 |
| 3,500 | 100000 | 100000 | 185000 | 185000 | 205000 | 205000 | 205000 |
| 3,600 | 100000 | 100000 | 185000 | 185000 | 205000 | 205000 | 205000 |