Bureau of Reclamation
2007 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

November 27, 2007

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

INTRODUCTION

NMFS's March 31, 2005 biological opinion and incidental take statement (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). This document reports the status of activities related to the incidental take statement, 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 2007 SALMON FLOW AUGMENTATION PROGRAM

Overview of Salmon Flow Augmentation Program

Reclamation was able to provide 427,000 acre-feet of water for flow augmentation in 2007 (See Table 1). Carryover storage from 2006 was near normal (98%) in the Upper Snake basin above Milner and in the Payette basin, and slightly above normal (111%) in the Boise basin.

Despite the near average carryover storage conditions, the entire Snake River basin experienced well below normal winter snowpack and subsequent spring runoff in 2007. Unregulated runoff for the April through July period was 54 percent of average for the Snake River at Heise, 56 percent for the Payette River at Horseshoe Bend, and 47 percent for the Boise River near Boise. Other tributaries were lower, such as the Owyhee River at 23 percent of average.

Of the three major reservoir systems, only the Payette system refilled completely in 2007; the Boise and Upper Snake systems did not. Insufficient water was available to Reclamation to provide 487,000 acre-feet, the upper limit of flow augmentation to be provided in any given year. However, 427,000 acre-feet was made available for flow augmentation by taking extraordinary measures in accordance with the terms of the Nez Perce Water Rights Settlement, namely by releasing water stored in powerhead space in Anderson Ranch and Palisades Reservoirs. The 427,000 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 impossible 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

The latest accounting runs by the Idaho Department of Water Resources (IDWR) in late October 2007 indicate that Reclamation physically delivered 428,425 acre-feet. This adjusted delivery amount was primarily the result of corrections to stream gaging data since August. This figure may change again as more data are finalized.

Table 1 summarizes the source, amount, and timing for Reclamation's 2007 salmon flow augmentation program.

Table 1. Summary of Reclamation's 2007 Salmon Flow Augmentation Program.

SOURCE	AMOUNT (acre-feet)	DATES OF DELIVERY
Upper Snake above Milner Dam		
Reclamation Uncontracted Space	20,091	June 20 - August 15
Reclamation Powerhead Space	87,450[1]	
Rentals – Water District 01	0	
Rentals – Tribes	42,108	
Subtotal	***149,649***	
Payette		
Reclamation Space	95,000	June 2 – August 30
Rentals	46,000	
Subtotal	***141,000***	
Boise		
Reclamation Uncontracted Space	40,932	June 14 -August 17
Reclamation Powerhead Space	19,195[2]	
Rentals	0	
Subtotal	***60,127***	
Natural Flows		
IWRB Lease (Idaho)	60,000[3]	April 3 – August 31
Skyline Farms (Oregon)	17,649	
Subtotal	***77,649***	
TOTAL	**428,425**[4]	

[1] Calculated after corrections were made to automated stream gaging information after the migration season. Targeted volume was 87,242 acre-feet. See section titled "In Season Management Considerations for Meeting Augmentation Targets" for more information.

[2] Same general comment as footnote 1. Targeted volume was 17,978 acre-feet.

[3] See section titled "Lease of Natural Flow Water Rights Below Milner Dam."

[4] Same general comment as footnote 1. Targeted volume was 427,000 acre-feet.

Uncontracted Space and Space Reacquired for Flow Augmentation

All uncontracted and reacquired space dedicated to flow augmentation was fully released during the previous (2006) water year. Despite the poor runoff in 2007, 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 20,091[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 2007 flow augmentation program

The 17,649 acre-feet of natural flow rights Reclamation has acquired in Oregon (Skyline Farms) were fully available again in 2007.

Rentals from Shoshone–Bannock Tribe

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. The tribes made available 42,108 acre-feet of storage water to the flow augmentation program in 2007.

Annual Rentals

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 now 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 Upper Snake BA.

In 2007, the chart specified that no Water District 01 rental water would be available for augmentation. Although carryover from 2006 was almost normal (November carryover was approximately 1,908,000 acre-feet) the very low April 1 runoff forecast of 2,770,000 acre-feet (67 percent of average) for the April through September period resulted in zero contributions from the Water District 01 rental pool. Actual runoff turned out to be 57 percent of average.

In the Payette basin, 46,000 acre-feet was made available and rented by Reclamation. No rental water was available from the Boise basin in 2007.

[1] Based on provisional IDWR water accounting. These values may change slightly when the 2007 accounting is finalized.

Powerhead Space

As part of the Nez Perce Water Rights Settlement, Reclamation may utilize powerhead space in Palisades Reservoir and Anderson Ranch Reservoir[2] for flow augmentation when the sum from all other sources is less than 427,000 acre-feet. 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. In 2007, it was necessary to use 87,450 acre-feet of Palisades powerhead, along with 19,195 acre-feet from Anderson Ranch Reservoir. Use of this powerhead allowed Reclamation to achieve the full 427,000 acre-feet of water required for the flow augmentation program.

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 nonetheless 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 above Milner Dam began on June 20 by ramping up roughly 500 cubic feet per second (cfs) a day at Milner Dam[3] until approximately 1,500 cfs was reached, which was held until August 2 when flows began ramping down by roughly 100 cfs per day. Augmentation releases were completed by August 15.

[2]The Anderson Ranch space described as powerhead in the Nez Perce Term Sheet is listed as "inactive space" in the reservoir's State water right. It is managed the same as the Palisades powerhead space.
[3] 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.

Augmentation flows began on the Boise system on June 14 and ended by August 17, with an average delivery rate of about 500 cubic feet per second (cfs) above irrigation demand. Augmentation releases from the Payette system began on June 2 and ended by August 30, with an average delivery rate of about 785 cfs above irrigation demand.

To the extent possible, Reclamation will continue striving 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

At the end of the 2007 irrigation season (November 1, 2007), the carryover storage into the 2008 water year was as follows:

Upper Snake above Milner Dam	703,752 acre-feet
Boise River system	262,123 acre-feet
Payette River system	412,789 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 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 2007 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 2007. These entities included:

- Idaho Department of Environmental Quality
- Oregon Department of Environmental Quality
- Aberdeen Springfield Irrigation District
- Owyhee Irrigation District
- Lower Boise River Watershed Advisory Group
- 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. 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	<---------- April 1 Heise Forecast (Apr-Sep) 1000s af ---------->						
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