Bureau of Reclamation
2006 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 18, 2006

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

INTRODUCTION

The Bureau of Reclamation (Reclamation) submitted the *Biological Assessment for Bureau of Reclamation Operations and Maintenance in the Snake River Basin Above Brownlee Reservoir* (Upper Snake BA) to the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (FWS) on November 30, 2004 (amended in March 2005). Reclamation's biological assessment described 12 separate proposed actions in the Snake River basin upstream from Brownlee Reservoir involving 12 Federal projects, including Minidoka, Palisades, Ririe, Michaud Flats, Little Wood River, Boise, Lucky Peak, Mann Creek, Owyhee, Vale, Burnt River, and Baker Projects. The Upper Snake BA described operations and routine maintenance activities at these projects and evaluated the effects of these actions on 12 listed and one proposed salmon and steelhead Evolutionary Significant Units (ESUs), designated critical habitat for three ESUs, and Essential Fish Habitat (EFH).

NMFS issued a biological opinion and incidental take statement on March 31, 2005 (Upper Snake BiOp), concluding that Reclamation's 12 proposed actions would not jeopardize the continued existence of the listed ESUs or adversely modify designated critical habitat. The incidental take statement included reasonable and prudent measures (RPMs) and associated terms and conditions to minimize incidental take to 10 listed ESUs and one proposed ESU. This document reports the status of activities related to the incidental take statement, including Reclamation's flow augmentation program. This report meets Reclamation's responsibility to submit an annual progress report by December 31 of each year.

RECLAMATION'S 2006 SALMON FLOW AUGMENTATION PROGRAM

NMFS's incidental take statement requires that Reclamation submit a progress report annually by December 31, documenting actions that it has taken to implement its salmon flow augmentation program (See Upper Snake BiOp, RPM 10.4.3 and Term and Condition 10.5.3).

> Reclamation must prepare a Progress Report by December 31 of each year to document actions that it has taken to implement its salmon flow augmentation program. In particular, Reclamation shall document and report to NMFS the specific amounts and sources of water provided as part of each year's flow augmentation program, as well as its overall success at procuring up to 487,000 acre-feet of water for salmon flow augmentation during the fish passage season.

NMFS Upper Snake BiOp at page 10-3.

Overview of Salmon Flow Augmentation Program

Reclamation was able to provide the 487,000 acre-feet of water for flow augmentation in 2006 (See Table 1). Carryover storage from 2005 in the Upper Snake basin above Milner was only 56 percent of average, yet this was more than double the carryover experienced

in the previous 4 years, which ranged from 18 percent to 25 percent of average. Carryover storages from 2005 in the Boise and Payette basins were closer to average at 71 percent and 90 percent, respectively.

In addition to the improved carryover storage conditions, the entire Snake River basin experienced normal to well above normal winter snowpack and subsequent spring runoff. Unregulated runoff for the April through July period was 102 percent for the Snake River at Heise, 136 percent for the Payette River at Horseshoe Bend, and 146 percent for the Boise River near Boise. Other tributaries were even higher, such as the Owyhee River at 168 percent of average. Extensive flood control operations were required at all Reclamation projects which resulted in significantly increased outflows beginning in April and lasting through May and June.

All Reclamation reservoirs filled or nearly filled in 2006, and 487,000 acre-feet was available for flow augmentation. 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, it is impossible to deliver the precise targeted volume on a real time basis.

In late August, preliminary accounting showed that Reclamation would deliver slightly more than 487,000 acre-feet (by about 1,450 acre-feet.) However, the latest accounting run by the Idaho Department of Water Resources (IDWR) in late November 2006 indicated that Reclamation physically delivered 494,604 acre-feet. This adjusted delivery amount was primarily the result of significant 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 2006 salmon flow augmentation program.

Table 1. Summary of Reclamation's 2006 Salmon Flow Augmentation Program.

SOURCE	AMOUNT (acre-feet)	DATES OF DELIVERY
Upper Snake above Milner Dam		
Reclamation Space	21,879	June 27 - August 20
Rentals – Water District 01	150,000	
Rentals – Tribes	45,892	
Subtotal	***217,771***	
Payette		
Reclamation Space	99,607[1]	June 23 – August 30
Rentals	57,000	
Subtotal	***156,607***	
Boise		
Reclamation Space	42,577[2]	June 30- August 29
Rentals	0	
Subtotal	***42,577***	
Natural Flows		
IWRB Lease (Idaho)	60,000[3]	April 3 – August 31
Skyline Farms (Oregon)	17,649	
Subtotal	***77,649***	
TOTAL	**494,604**[4]	

[1] Calculated after corrections were made to automated stream gaging information after the migration season. Targeted volume was 95,000 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 40,932 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 487,000 acre-feet

Uncontracted Space and Space Reacquired for Flow Augmentation

All uncontracted and reacquired space dedicated to flow augmentation was fully evacuated during the water year 2005 and/or previous water years' operations. Reclamation's 95,000 acre-feet of uncontracted space assigned to flow augmentation in the Payette system fully filled, as did its 40,932 acre-feet of space reacquired for flow augmentation in the Boise system reservoirs. Reclamation provided all accrual in Reclamation held space in the Boise and Payette systems to the 2006 flow augmentation program.

The average to above average runoff in 2006 nearly refilled Reclamation's storage space in the Upper Snake above Milner and this amount (21,879 acre-feet[1] of a total 22,896 acre-feet of storage space) was delivered.

The natural flow rights Reclamation has acquired in Oregon (Skyline Farms) were fully available again in 2006.

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 45,892 acre-feet of storage water to the flow augmentation program in 2006.

Annual Rentals

eclamation relies heavily each year on annual rentals from water users to acquire water for its flow augmentation program. The normal and above normal spring runoff allowed adequate water to be assigned to the rental pools in 2006. 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. 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 Upper Snake BA.

In 2006, the chart specified that 150,000 acre-feet would be made available for augmentation due to carryover from 2005 (November carryover was approximately 1,204,000 acre-feet) and an April 1 runoff forecast of 4,612,000 acre-feet (111 percent of average) for the April through September period (actual runoff turned out to be 101 percent of average).

In the Payette basin, 57,000 acre-feet was made available and rented by Reclamation. No rental water was available from the Boise basin in 2006.

Powerhead Space

As part of the Nez Perce Water Rights Settlement (and described in the Upper Snake BA at page B-4), Reclamation will utilize up to half of the powerhead space in Palisades Reservoir for flow augmentation, but not to exceed a flow augmentation total of 427,000 acre-feet. It is anticipated that this powerhead space will be used infrequently, and only after all other sources are exhausted. No powerhead space was used in 2006.

[1] Based on provisional IDWR water accounting. These values may change slightly when the 2006 accounting in finalized.

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 water rich years, this will increase the volume of water available for augmentation. Through a complex series of negotiations, 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 occurring within the Apri1 3 to August 31 period, and 10,500 acre-feet which occurs 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, April 1 through October 31.

Augmentation releases from storage in the Upper Snake above Milner Dam began on June 27 by ramping up roughly 500 cubic feet per second (cfs) a day until approximately 2,600 cfs was reached, which was held until July 25 when flows began ramping down by roughly 100 cfs per day. Augmentation releases were completed by August 20.

Augmentation flows began on the Boise system on June 30 and ended by August 29, with an average delivery rate of about 285 cubic feet per second (cfs) above irrigation demand. Augmentation releases from the Payette system began on June 23 and ended by August 30, with an average delivery rate of about 1200 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

November 1 carryover was as follows:

Upper Snake above Milner Dam	1,908,420 acre-feet
Boise River system	433,281 acre-feet
Payette River system	473,155 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 2006 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 provided 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 analytical laboratory services to several entities in the basin in 2006. These entities included:

- Idaho Department of Environmental Quality
- Aberdeen Springfield Irrigation District
- Weiser River Watershed Advisory Group
- 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 has developed and implemented 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 has continued through 2006. The monitoring will continue through 2007 and will culminate with a completion report in 2008 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