



Grant County
PUBLIC UTILITY DISTRICT
Excellence in Service and Leadership

January 31, 2011

Washington Department of Ecology
Marcie Mangold
4601 N. Monroe St
Spokane, WA 99205

RE: Priest Rapids Hydroelectric Project No.2114-164
License Compliance Filing – Article 401(a)(10) – 2009 Bull Trout Monitoring and
Evaluation Annual Report

Dear Ms. Mangold,

Please find enclosed the 2010 Bull Trout Monitoring and Evaluation Annual Report consistent with the Requirements of Article 401(a)(10) of the Priest Rapids Hydroelectric Project License.

On June 4, 2009, the Federal Energy Regulatory Commission (FERC) issued an Order modifying and approving Public Utility District No.2 of Grant County's (Grant PUD's) Bull Trout Monitoring and Evaluation Plan. Under this Order, Grant PUD is required to file annually with the Commission by February 1, beginning 2010 and concluding 2014, an Annual Bull Trout Monitoring and Evaluation Report. This report includes monitoring results from the previous year including the number of bull trout observed or incidentally taken. Grant PUD distributed this annual report to the Priest Rapids Fish Forum (PRFF) for review and comment. Copies of the PRFF's comments and Grant PUD's responses are included in appendices A and B of this report.

Ecology staff with any questions should contact Tom Dresser at 509-7545088, ext. 2312.

Respectfully,

 (Ross Hendrick)

For

Tom Dresser
Manager, Fish, Wildlife, and Water Quality

**Bull Trout Monitoring and Evaluation Report for the Priest Rapids
Project, 2010**

By

Public Utility District No. 2 of Grant County, Washington
Priest Rapids Project
FERC Project Number 2114

January 2011

Executive Summary

Public Utility District No. 2 of Grant County (Grant PUD) owns and operates two hydroelectric dams on the Columbia River; Wanapum and Priest Rapids, known collectively as the Priest Rapids Hydroelectric Project (Project), and operated under the terms and conditions of Federal Energy Regulatory Commission (FERC) Hydroelectric Project License No. 2114.

Grant PUD operates the Priest Rapids Project through the coordinated operation of the seven-dam system and other Columbia Basin entities with current operational agreements the other mid-Columbia public utility districts (Chelan and Douglas PUDs), with the fishery agencies, and other operators to provide protection and enhancement for a range of fisheries and other resources within and downstream of the Project. These agreements include the Hanford Reach Fall Chinook Protection Program Agreement, the Hourly Coordination Agreement, and the Priest Rapids Project Salmon and Steelhead Settlement Agreement. The Project is also subject to the provisions of the FERC license and related laws and regulations, as well as to the requirements (incorporated in the FERC license to operate the Project) of the 2008 Biological Opinion for the Project issued by the National Marine Fisheries Service (NMFS) for its effects on anadromous salmon, the Clean Water Act Section 401 Water Quality Certification issued by the Washington Department of Ecology (WDOE), and the Biological Opinion for the Priest Rapids Project issued by the United States Fish and Wildlife Service (USFWS) regarding the effects of the Project on bull trout.

A 401 Water Quality Certification was issued by the WDOE on April 3, 2007, and amended March 6, 2008, for the operation of the Project. A new license for the Project was issued by FERC on April 17, 2008 (FERC 2008). Under FERC License Articles 401(a)(10) and 401(a)(25), and the 401 Certification (6.2 (5)(b)), Grant PUD was required, in consultation with the Priest Rapids Fish Forum (PRFF), to develop and submit for approval a Bull Trout Monitoring and Evaluation Plan (BTMEP; License Article 401(a)(10)) and Bull Trout Hydrologic and Water Quality Monitoring Plan (BTHWQP; License Article 401(a)(25)). The BTMEP was approved by FERC on June 6, 2009 and the BTHWQP was approved by FERC on February 17, 2010; this included approval from FERC for Grant PUD to combine the BTMEP and BTHWQP annual reports into one report..

The goal of this plan is to, on an annual basis, monitor and evaluate bull trout (*Salvelinus confluentus*) presence in the Project, to quantify potential Project-related impacts, and to specify the basis for identifying measures Grant PUD will implement to address any adverse effects on bull trout determined to result from Project operations.

In 2010, seven bull trout were observed passing the fish ladder count stations at Priest Rapids Dam and seven bull trout were observed passing the fish ladder count stations at Wanapum Dam between April 15 and November 15 for a total of fourteen observations. No PIT-tagged bull trout were detected at Priest Rapids Dam in 2010. No bull trout were observed in juvenile bypass activities, gatewell dipping, turbine maintenance activities or fishway maintenance activities. Two adult bull trout were incidentally collected in traps set by a Grant PUD contractor fishing for northern pikeminnow on December 5th and 6th near Crescent Bar, River Mile 440-441. Both fish were quickly released unharmed to the Columbia River. Any bull trout collected in future northern pikeminnow trapping efforts will be PIT-tagged and tissue sample taken for genetic analysis. During smolt trap operations on the White River, 79 bull trout were collected and nine

bull trout were PIT-tagged and tissue sample taken for genetic analysis. Two bull trout were detected at the downstream detection site on the White River in 2010. On Nason Creek, 11 bull trout were collected, and ten bull trout were PIT-tagged and tissue sample taken for genetic analysis. Five bull trout were detected downstream at the Nason Creek detection site in 2010.

In 2010, no bull trout were observed to be negatively impacted by Project operations or water quality parameters as a result thereof.

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1.0 Introduction

The Public Utility District No. 2 of Grant County (Grant PUD) owns and operates two hydroelectric dams on the Columbia River; Wanapum and Priest Rapids, known collectively as the Priest Rapids Hydroelectric Project (Project), and operated under the terms and conditions of Federal Energy Regulatory Commission (FERC) Hydroelectric Project License No. P-2114.

Grant PUD operates the Project through the coordinated operation of the seven-dam system and other Columbia Basin entities with current operational agreements with the fishery agencies and other operators to provide protection and enhancement for a range of fisheries and other resources within and downstream of the project. These agreements include the Hanford Reach Fall Chinook Protection Program Agreement, the Hourly Coordination Agreement, and the Priest Rapids Project Salmon and Steelhead Settlement Agreement. The Project is also subject to the provisions of the FERC license and related laws and regulations, as well as to the requirements (incorporated by reference in the license) of the Biological Opinion for the Priest Rapids Project issued by the National Marine Fisheries Service (NMFS) for its effects on anadromous salmon, the Clean Water Act Section 401 Water Quality Certification issued by the Washington State Department of Ecology (WDOE), and the Biological Opinion for the Priest Rapids Project issued by the United States Fish and Wildlife Service (USFWS) regarding the effects of the Project on bull trout (*Salvelinus confluentus*). Under FERC License Articles 401(a)(10) and 401(a)(25), and the 401 Certification (6.2 (5)(b)), Grant PUD was required, in consultation with the Priest Rapids Fish Forum (PRFF), to develop and submit for approval a Bull Trout Monitoring and Evaluation Plan (BTMEP; License Article 401(a)(10)) and Bull Trout Hydrologic and Water Quality Monitoring Plan (BTHWQP; License Article 401(a)(25)). The BTMEP was approved by FERC on June 6, 2009 and the BTHWQP was approved by FERC on February 17, 2010; this included approval from FERC for Grant PUD to combine the BTMEP and BTHWQP annual reports into one report.

In 2010, Grant PUD monitored for bull trout during all Project related activities where bull trout could potentially be seen or encountered. Grant PUD has compiled the results of those monitoring efforts in the following Bull Trout Monitoring and Evaluation Report.

2.0 Bull Trout Observations

In 2010, seven bull trout sightings were observed at the Priest Rapids Dam fish ladder count stations, and seven were observed at Wanapum Dam between April 15 and November 15 for a total of 14 observations. Table 1 contains all the pertinent information related to the bull trout observations made at Priest Rapids and Wanapum dam count stations in 2010, while figures 1 through 3 provide photographs of bull trout passing the Priest Rapids Dam fish count stations. Table 2 shows bull trout use of the westbank and eastbank fish ladders for both Priest Rapids and Wanapum dams from 2007 through 2010. No PIT-tagged bull trout were detected at the Priest Rapids Dam fish count stations in 2010. Due to the fact that none of the bull trout observed passing through the Project ladders were PIT-tagged, it is not possible to determine if bull trout passing through Priest Rapids Dam in 2010 are the same fish that were observed passing through Wanapum Dam in 2010. Grant PUD operated its' fishways in accordance with the Priest Rapids Salmon and Steelhead Agreement and Grant PUD's annual Fishway Operating Plan.

Table 1 Bull Trout Observation at the Priest Rapids Project Count Stations in 2010.

Priest Rapids Dam	Date	Ladder	Number	Time	Size
	6/3/2010	Left Bank	2	NA	NA
	6/13/2010	Left Bank	1	19:43	18-20"
	6/15/2010	Left Bank	1	19:14	20"
	7/7/2010	Right Bank	1	21:09	24"
	7/18/2010	Left Bank	1	NA	NA
	7/19/2010	Right Bank	1	NA	NA
Wanapum Dam	Date	Ladder	Number	Time	Size
	5/31/2010	Left Bank	1	NA	NA
	6/4/2010	Left Bank	1	NA	NA
	6/5/2010	Left Bank	1	NA	NA
	6/7/2010	Left Bank, Right Bank	2	NA	NA
	6/12/2010	Right Bank	1	NA	NA
	7/19/2010	Left Bank	1	NA	NA

Table 2 Number of Bull Trout Passing Priest Rapids and Wanapum dams from 2007 to 2010.

Year	Priest Rapids Dam		Wanapum Dam	
	Left Bank	Right Bank	Left Bank	Right Bank
2007	0	1	1	0
2008	2	3	0	0
2009	5	1	3	0
2010	5	2	5	2



Figure 1 Bull trout passing Priest Rapids left bank count station on June 13, 2010. The blue line is 12” from the black line and the red and green lines are 20” and 22” from the black line respectively.

DS2 2:PR Green(left) Jun 15, 2010 7:14:14 PM HAST

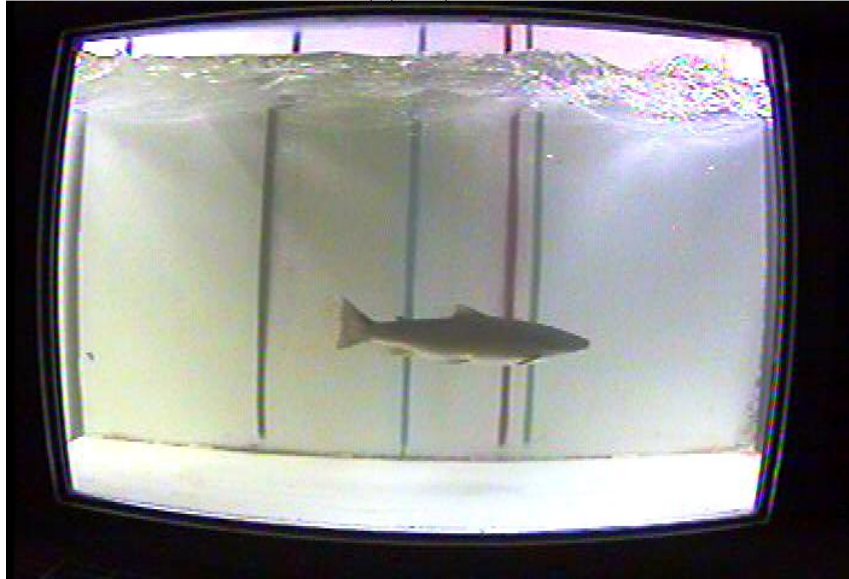


Figure 2 Bull trout passing Priest Rapids left bank count station on June 15, 2010. The blue line is 12” from the black line and the red and green lines are 20” and 22” from the black line respectively.

DS2 1:PR Blue(right) Jul 7, 2010 9:09:34 AM PDT



Figure 3 Bull trout passing Priest Rapids right bank count station on July 7, 2010. The blue line is 12” from the black line and the red and green lines are 20” and 22” from the black line respectively.

No bull trout were observed in juvenile bypass activities, gatewell dipping, turbine maintenance activities, fishway maintenance activities and hatchery activities.

In 2010, Grant PUD contracted a northern pikeminnow (*Ptychocheilus oregonensis*) fishery using up to 100 traps baited with pieces of Chinook salmon carcasses to determine the feasibility of collecting northern pikeminnow during the winter months, which up until now, had never

been attempted. The traps were fished in Wanapum Reservoir from November 17, 2010 through January 28, 2011 except for days when extreme freezing temperatures prevented work. During periods of constant freezing temperatures, gear was kept out of the river. When traps were deployed, they were checked once daily. Two adult bull trout were incidentally collected in traps set by a Grant PUD contractor fishing for northern pikeminnow on December 5th and 6th near Crescent Bar, River Mile 440-441. The two bull trout were collected in separate traps on separate days. The smaller of the two bull trout (Figure 4), approximately 16"-19", was collected on December 5th in a trap with a tench (*Tinca tinca*) near GPS coordinate N 47 11.682 W 119 59.808, in 48 foot water that was 16 °C. The larger of the two bull trout (Figure 5), approximately 20"-24", was collected on December 6th in a trap by itself in 48 feet of water that was 16 °C. Both bull trout were quickly released unharmed to the Columbia River. The two bull trout were not PIT-tagged or tissue sample taken for genetic analysis or were scanned for pit-tags. Photos were taken of both the bull trout collected (Figure 4 and 5 below). The contractor has subsequently been trained to take genetic samples, scan and PIT-tag any bull trout caught in the future that meet the body mass requirements for PIT-tagging bull trout. No bull trout were observed in any other Grant PUD northern pikeminnow fishing activities in 2010. In future northern pikeminnow fishing efforts, Grant PUD will not fish baited traps during the winter months to avoid incidentally capturing bull trout that may be overwintering in the Project.



Figure 4 Bull trout caught in a northern pikeminnow trap near Crescent Bar on December 5, 2010.



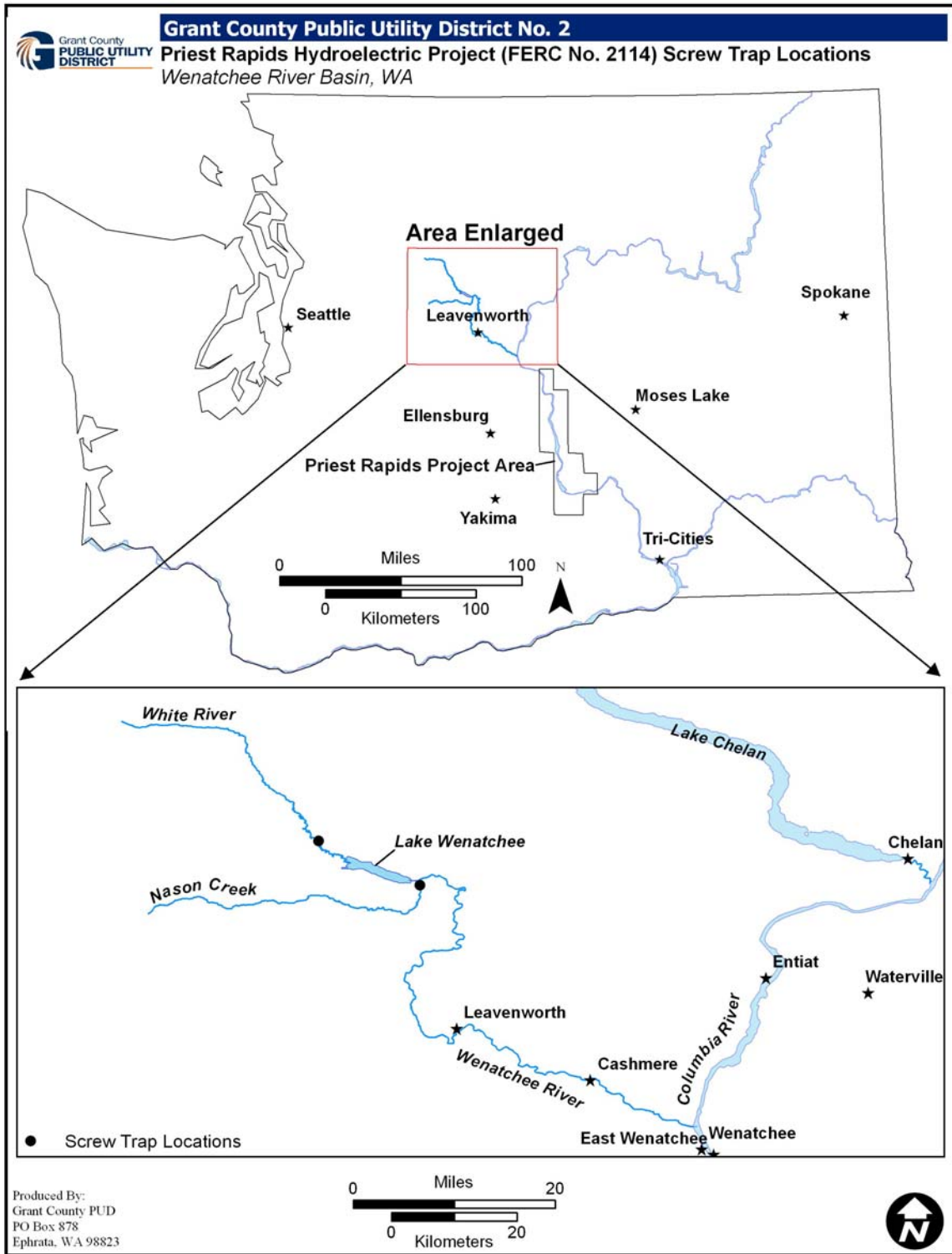
Figure 5 Bull trout caught in a northern pikeminnow trap near Crescent Bar on December 6, 2010.

No bull trout were observed in any Hanford Reach Fall Chinook Protection Program activities.

3.0 Bull Trout Observations and Handlings on Nason Creek and White River

Grant PUD monitors screw traps on the White River and Nason Creek through the Yakama Nation as part of Grant PUD's spring Chinook hatchery production program. A map showing the location of the screw traps is provided in Figure 6. The Yakama Nation operates screw traps for spring Chinook salmon and additionally records bull trout observations on the White River and Nason Creek. As related to spring Chinook juvenile stocking events, no bull trout observations or disturbances of bull trout habitat occurred during stocking of juvenile spring Chinook in 2010.

Figure 6 Screw Trap Locations on White River and Nason Creek.



During screw trap operations in 2010, 79 bull trout (53 ± 39 mm, $n = 79$) were collected in the White River and 11 bull trout were collected in Nason Creek (7 bull trout > 60 mm). Of the 79 bull trout collected in the White River, 10 measured greater than 70 mm in length and nine bull trout were PIT-tagged and tissue sample collected. Eleven bull trout collected in Nason Creek were greater than 70 mm in length and were PIT-tagged and tissue sample collected. Tissue samples are sent to the Abernathy Fish Technology Center, located in Longview, WA and part of the Pacific Region U.S. Fish & Wildlife Service, for analysis. The associated PIT-tags have been uploaded to the PTAGIS website for future tracking. Data for the individual fish tagged is provided in Tables 3 and 4. In 2010, two bull trout were detected at the downstream detection site in the White River and five bull trout were detected at the downstream detection site in Nason Creek.

Table 3 PIT-tag codes and data for bull trout captured in the Nason Creek screw trap.

Date Tagged	Length	Weight	PIT-tag Code
5/27/2010	191	73.8	3D9.1BF1DB3138
6/2/2010	146	30.8	3D9.1BF194E6C0
6/11/2010	177	48.4	3D9.1BF1DACC77
6/17/2010	185	67.1	3D9.1BF1AB7103
6/18/2010	205	82.2	3D9.1BF1AB36B3
6/21/2010	138	25.1	3D9.1BF19E5BDD
6/22/2010	173	46.7	3D9.1BF1DB325C
7/3/2010	157	37.1	3D9.1BF2101232
9/27/2010	218	94.9	
10/17/2010	214	99.0	3D9.1BF1DAF74B
10/18/2010	177	51.0	3D9.1BF194B218

Table 4 PIT-tag codes and data for bull trout captured in the White River screw trap.

Date Tagged	Length	Weight	Tag Code
3/15/2010	152	35.0	3D9.1BF1D7F315
8/14/2010	65	2.8	3D9.1BF1DB650A
8/21/2010	131	20.4	3D9.1BF1D78E12
8/29/2010	120	17.4	3D9.1BF20F7CF2
9/25/2010	226	119.6	3D9.1BF1DB6FEA
9/26/2010	220	118.8	3D9.1BF1DB8BE6
10/29/2010	140	31.6	3D9.1BF1931129
10/29/2010	169	42.4	3D9.1BF1D61108
11/12/2010	132	21.7	3D9.1BF1DA59BE

4.0 Hydrologic and Water Quality Monitoring

The following sections present a summary of the 2010 bull trout water hydrologic and water quality evaluation.

4.1 Water Quality Evaluation

In 2010, Grant PUD compared daily water quality data for the three year average, 2001-2003, statistically with daily water quality data from 2010. The water quality data analyzed was taken from the Columbia River Dart website www.cbr.washington.edu/dart/. The 2010 water quality data was compared to the 2001-2003 data due to the results of the bull trout studies conducted in 2001-2003 in the Priest Rapids Project that found water quality conditions during the time frame of 2001 to 2003 did not have negative impacts to bull trout (BioAnalysts, Inc. 2002, 2003, 2004). The water quality parameters under evaluation were total dissolved gas (TDG) (% saturation), temperature, water level elevation and total discharge or outflow. The water quality data was taken from the Priest Rapids and Wanapum dam forebay fixed water quality sites. Water quality data from May 1 through October 31 was evaluated.

Water quality data from the three year average, 2001-2003, was compared to 2010 data using *F* tests to determine whether the variance of the averages were equal. Following the *F* test, a *t* test, $\alpha = 0.05$, was used to determine if there were significant differences between the water quality parameters three year average and the 2010 data. The results showed that there were no significant differences in water quality parameters between the three year average and the 2010 data with the exception of the water level elevation data for Priest Rapids forebay (Table 5). In 2010, the forebay elevation at Priest Rapids Dam was significantly lower at 486.22 feet compared to the three year average of 486.58 feet. Although a significantly lower forebay elevation was detected at Priest Rapids statistically in 2010, a negative impact to bull trout migrating through the project due to a five inch difference in forebay water level elevation is unlikely.

Table 5 Results of statistical comparisons between three year average water quality data (2001-2003) and the 2010 water quality data.

Location	Total Dissolved Gas (% Saturation)	Temperature	Water Level Elevation	Discharge
Priest Rapids Dam Forebay	No Significant Difference	No Significant Difference	Significant Difference <i>t</i> Stat 5.11, <i>t</i> Critical 1.96, $\alpha = 0.05$	No Significant Difference
Wanapum Dam Forebay	No Significant Difference	No Significant Difference	No Significant Difference	No Significant Difference

Water quality data values such as the yearly minimum, maximum and average values for 2001 through 2003, the 3 year average and 2010 are presented in Table 6 and Table 7.

Table 6 Water Quality Data Values for Priest Rapids Forebay 2001-2003, 3 year average, and 2010.

Water Quality Data Values at Priest Rapids Dam Forebay, 3yr-Ave (2001-2003) vs. 2010					
TDG (% Sat)	2001	2002	2003	3yr-Ave	2010
Ave	102.0	103.0	101.9	102.3	101.9
Min	96.2	93.3	97.4	97.2	95.7
Max	111.1	117.4	110.1	112.0	114.0
Temperature (C)	2001	2002	2003	3yr-Ave	2010
Ave	17.6	17.9	18.5	18.0	18.0
Min	13.5	13.6	13.8	13.7	14.5
Max	19.5	20.2	21.0	19.9	20.4
Forebay Elevation (ft)	2001	2002	2003	3yr-Ave	2010
Ave	486.6	486.7	486.5	486.6	486.2
Min	484.4	483.8	484.1	484.7	483.6
Max	487.4	487.9	487.9	487.3	487.8
Discharge (kcfs)	2001	2002	2003	3yr-Ave	2010
Ave	70.7	140.8	108.7	106.7	108.8
Min	38.6	47.2	40.9	48.1	38.4
Max	129.5	273.1	192.7	181.7	252.3

Table 7 Water Quality Data Values for Wanapum Dam Forebay 2001-2003, 3 year average, and 2010.

Water Quality Data Values at Wanapum Dam Forebay, 3yr-Ave (2001-2003) vs. 2010					
TDG (% Sat)	2001	2002	2003	3yr-Ave	2010
Ave	106.2	110.2	106.4	107.6	106.5
Min	96.8	95.7	96.5	97.3	96.6
Max	118.5	124.4	115.7	115.3	119.4
Temperature (C)	2001	2002	2003	3yr-Ave	2010
Ave	16.3	16.1	16.6	16.4	15.9
Min	9.2	8.1	8.7	8.8	8.4
Max	21.2	20.8	21.5	20.4	20.8
Forebay Elevation (ft)	2001	2002	2003	3yr-Ave	2010
Ave	569.0	569.7	569.2	569.3	569.1
Min	562.8	563.7	564.3	564.2	563.3
Max	571.3	571.7	571.5	571.0	571.3
Discharge (kcfs)	2001	2002	2003	3yr-Ave	2010
Ave	73.6	140.7	109.7	108.0	109.6
Min	40.2	44.7	42.0	48.6	28.0
Max	139.8	275.7	184.9	187.2	247.6

Daily average water quality data from the Priest Rapids Dam forebay for TDG, temperature, elevation and discharge for the years 2001-2003, the 3 year average of those years, and 2010 are presented in Figures 7, 8, 9 and 10.

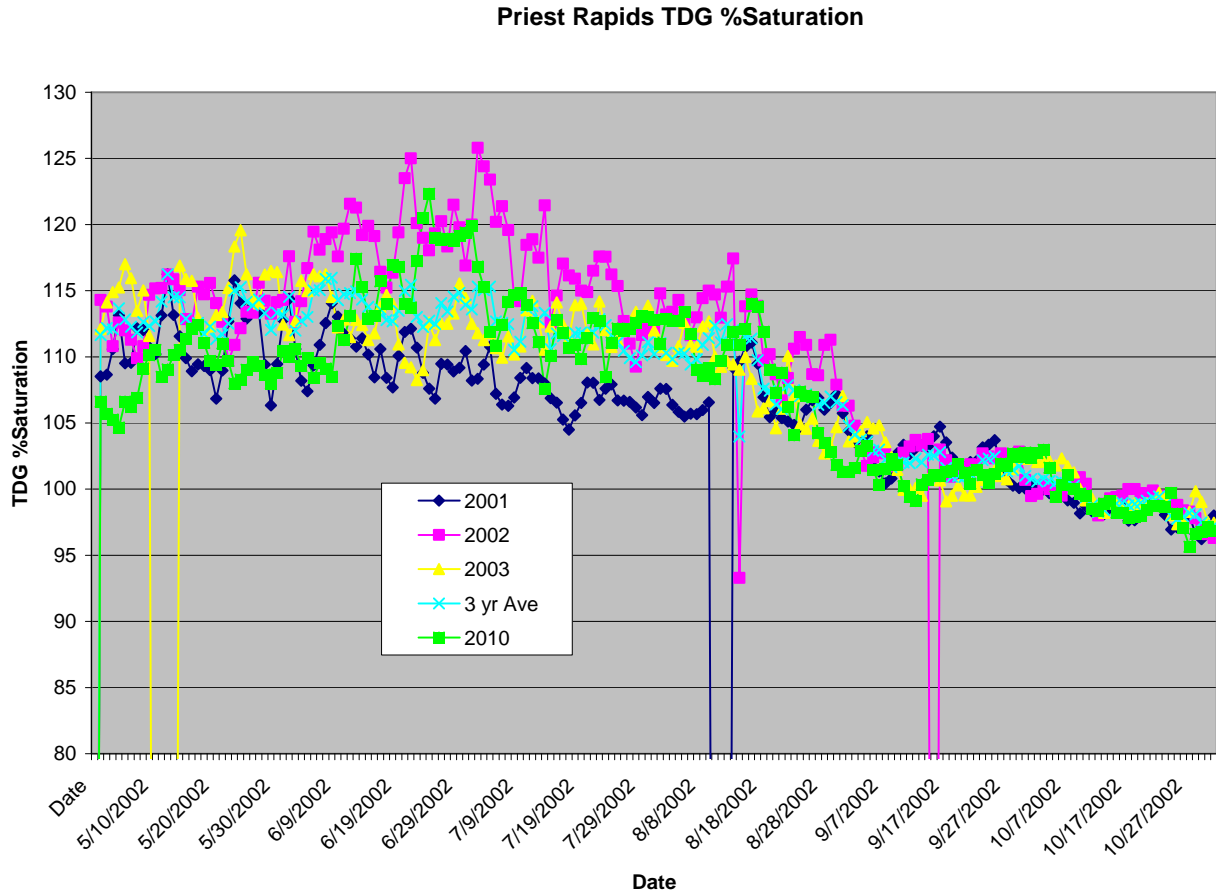


Figure 7 Daily Average TDG Values for Priest Rapids Dam Forebay for the years 2001-2003, the 3 year average, and 2010.

Priest Rapids Forebay Temperature

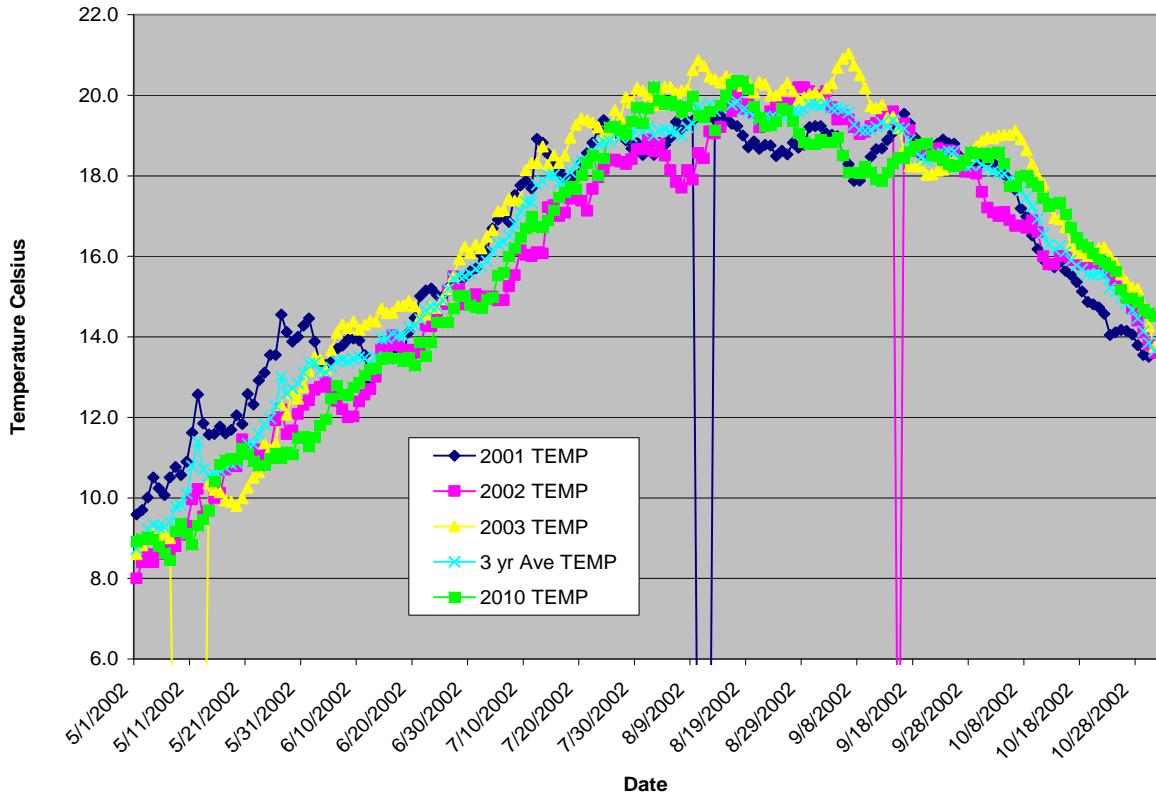


Figure 8 Daily Average Temperature Values for Priest Rapids Dam Forebay for the years 2001-2003, the 3 year average, and 2010.

Priest Rapids Forebay Elevation

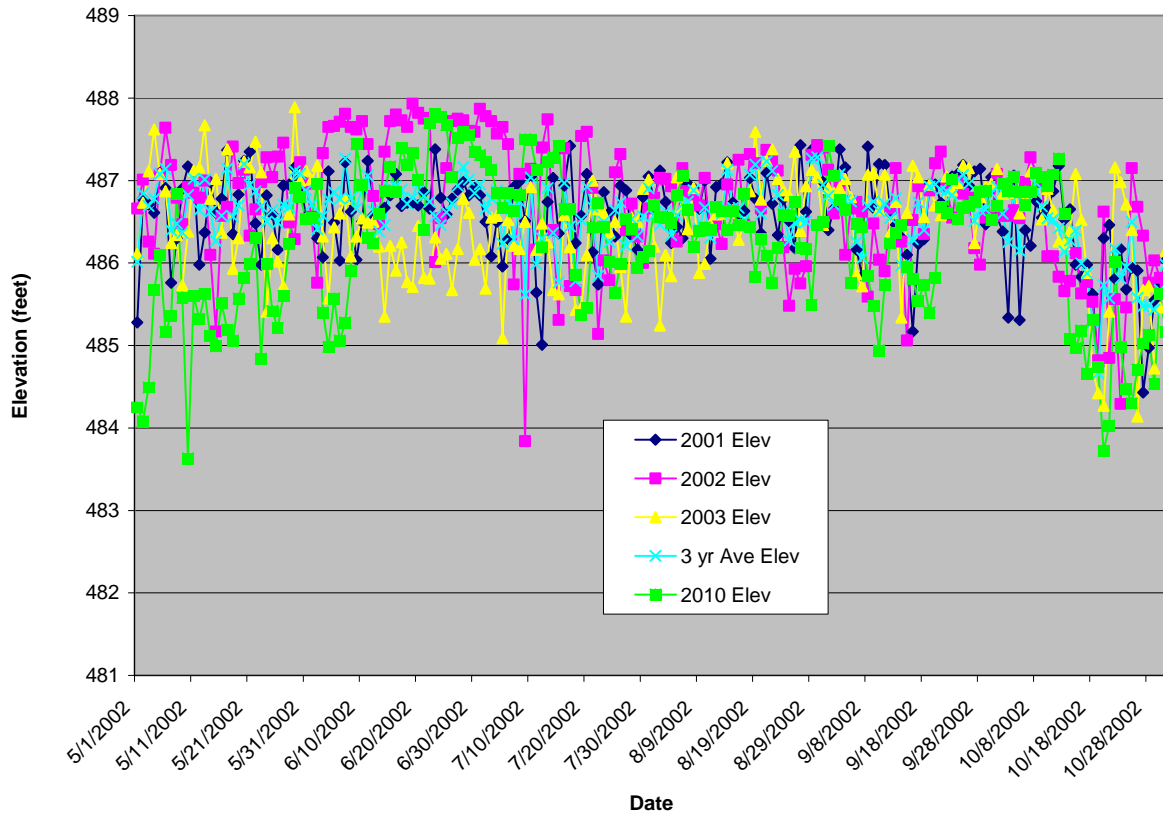


Figure 9 Daily Average Water Level Elevation Values for Priest Rapids Dam Forebay for the years 2001-2003, the 3 year average, and 2010.

Priest Rapids Total Discharge

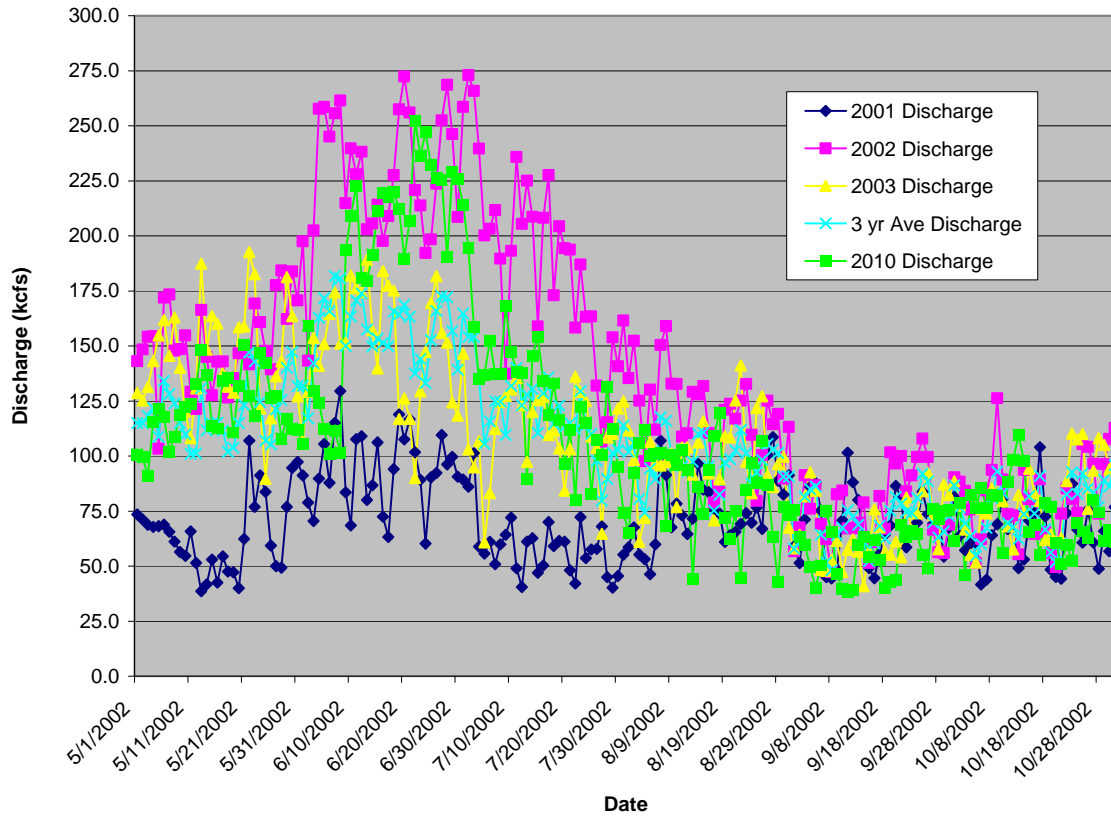


Figure 10 Daily Average Total Discharge Values for Priest Rapids Dam Forebay for the years 2001-2003, the 3 year average, and 2010.

Daily average water quality data from the Wanapum Dam forebay for TDG, temperature, elevation and discharge for the years 2001-2003, the 3 year average of those years, and 2010 are presented in Figures 11, 12, 13 and 14.

Wanapum Forebay TDG

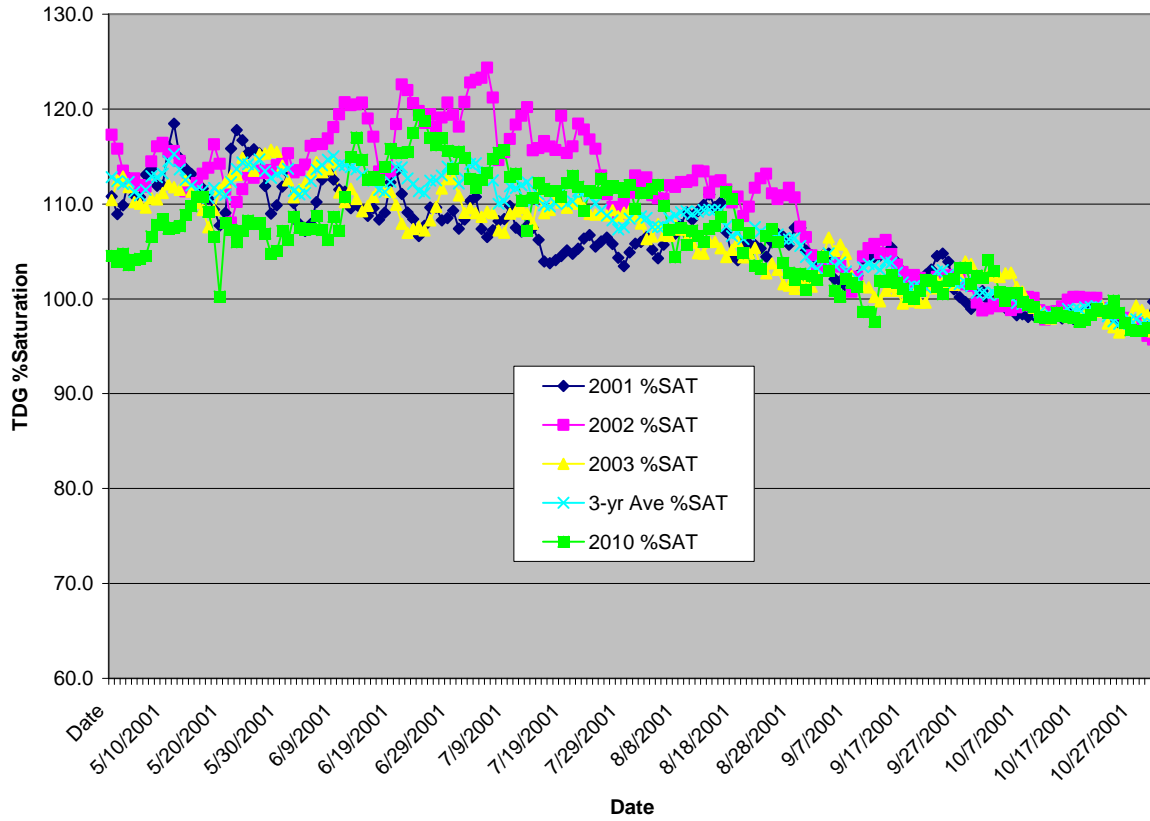


Figure 11 Daily Average TDG Values for Wanapum Dam Forebay for the years 2001-2003, the 3 year average, and 2010.

Wanapum Forebay Temperature

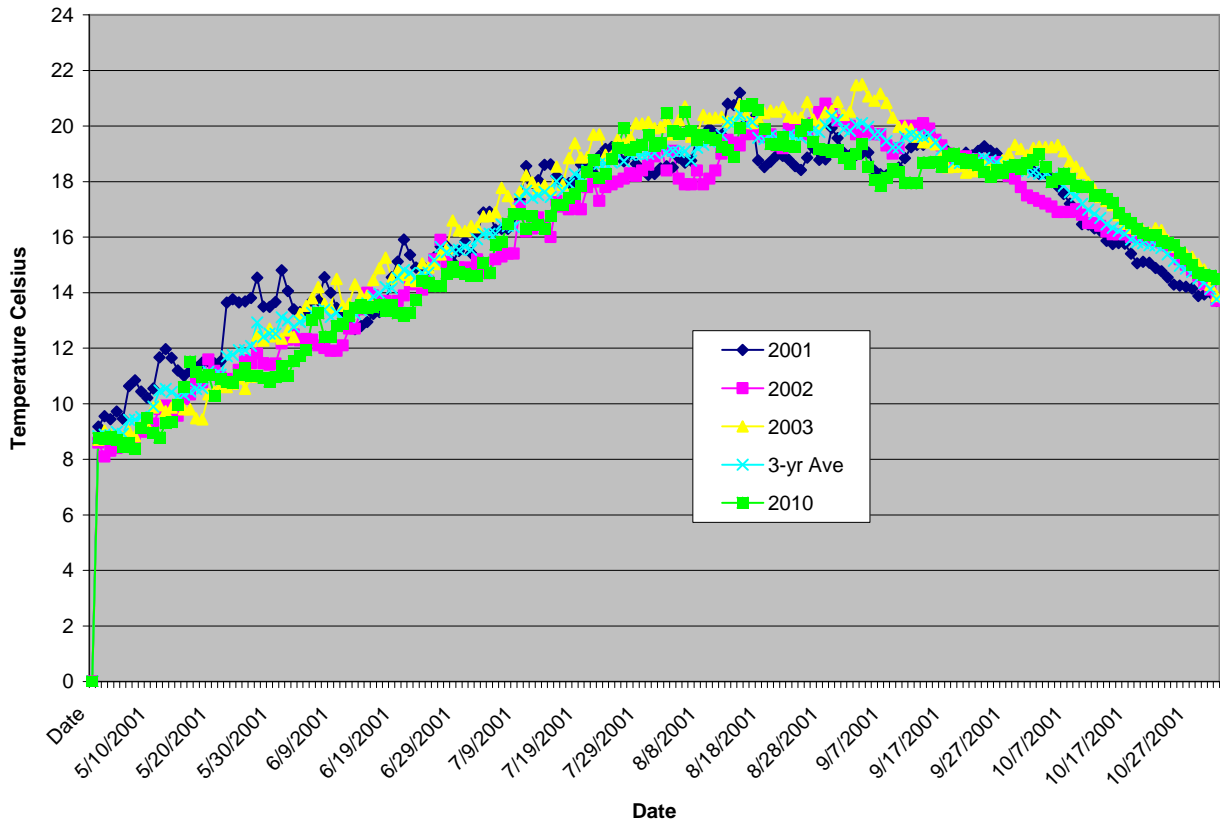


Figure 12 Daily Average Temperature Values for Wanapum Dam Forebay for the years 2001-2003, the 3 year average, and 2010.

Wanapum Forebay Elevation

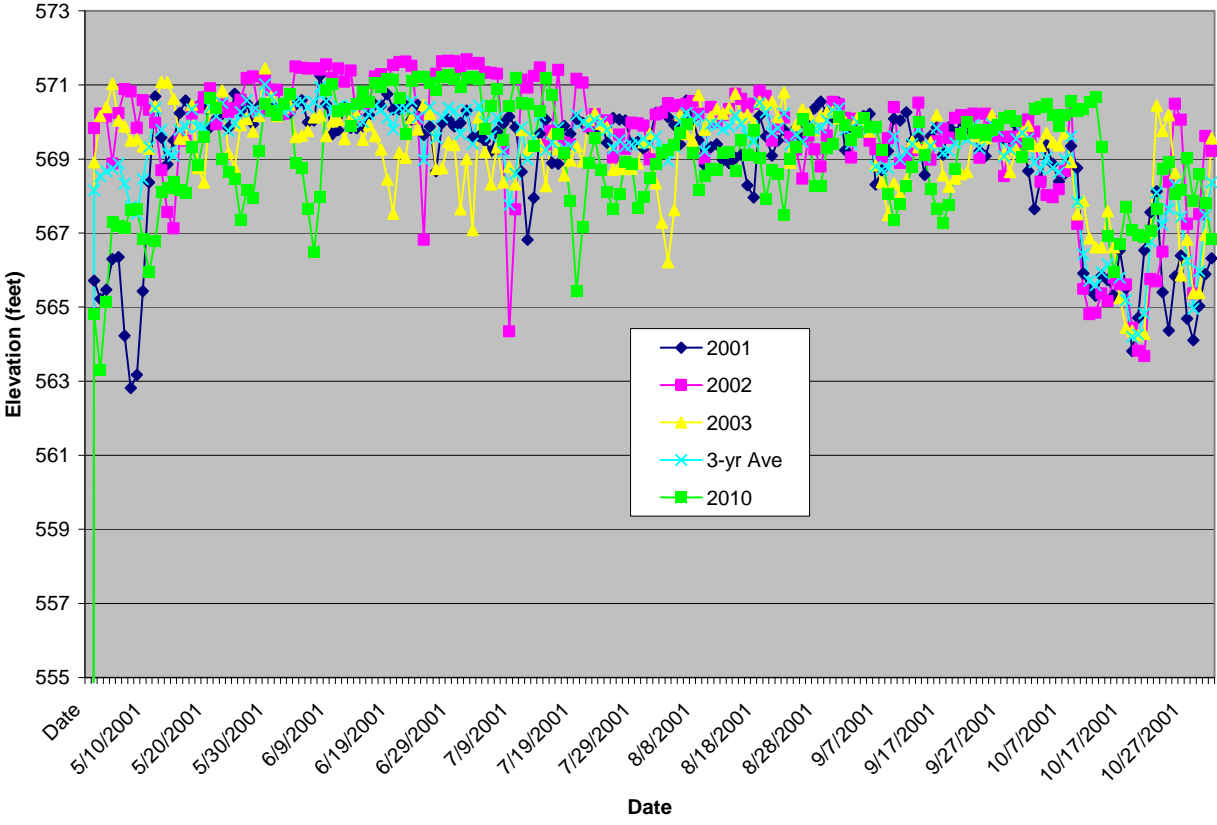


Figure 13 Daily Average Water Level Elevation Values for Wanapum Dam Forebay for the years 2001-2003, the 3 year average, and 2010.

Wanapum Dishcharge

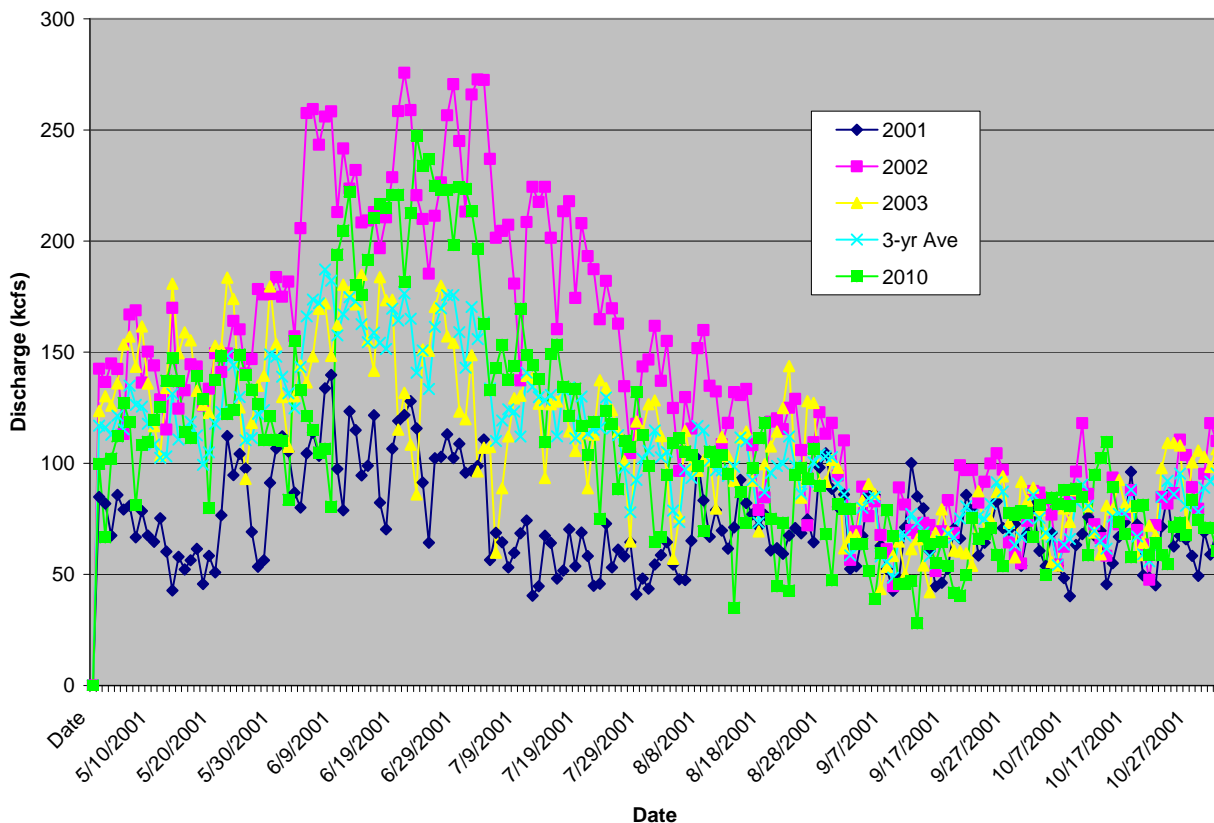


Figure 14 Daily Average Total Discharge Values for Wanapum Dam Forebay for the years 2001-2003, the 3 year average, and 2010.

4.2 Monitoring Acclimation Facility Discharge

In 2010, Grant PUD had no hatchery activities that qualified for acclimation facility discharge monitoring in known bull trout spawning or rearing habitat.

4.3 Bull Trout Site Visits

In 2010, Grant PUD performed surveys in upper Wanapum reservoir and in Priest Rapids reservoir for stranded bull trout. Grant PUD biologists monitored the gravel island area in upper Wanapum reservoir (Figure 15) on November 22 and the Beverly Island area in Upper Priest Rapids reservoir on December 22 (Figure 16). Surveys are based on flow fluctuations and observation of any pool which could collect and entrap or stand fish. Per the BTMEP, one site evaluation per month (from November through March) is made to each site, during day-light hours, when either reservoir drops 3 feet over a 24 hour period. In 2010, no bull trout were observed in either of the survey evaluations for 2010; these surveys will continue in 2011 through March and begin again in November 2011 in accordance with the BTMEP.



Figure 15 Upper Wanapum Reservoir bull trout survey evaluation area.



Figure 16 Upper Priest Rapids Reservoir bull trout survey evaluation area.

5.0 Summary

In 2010, seven bull trout were observed passing the fish ladder count stations at Priest Rapids Dam and seven bull trout were observed passing the fish ladder count stations at Wanapum Dam between April 15 and November 15 for a combined total of fourteen observations. No PIT-tagged bull trout were detected at Priest Rapids Dam in 2010. No bull trout were observed in juvenile bypass activities, gatewell dipping, turbine maintenance activities or fishway maintenance activities. Two adult bull trout were incidentally collected in traps set by a Grant PUD contractor fishing for northern pikeminnow on December 5 and 6 near Crescent Bar, River Mile 440-441. Both fish were quickly released unharmed to the Columbia River. These two bull trout were not PIT-tagged or sampled for genetics. Any bull trout collected in future northern pikeminnow trapping fisheries will be PIT-tagged and tissue sample collected for genetic analysis. In future northern pikeminnow fishing efforts, Grant PUD will not fish baited traps during the winter months to avoid incidentally capturing bull trout that may be overwintering in the Project. During smolt trap operations on the White River, 79 bull trout were collected and nine bull trout were PIT-tagged and tissue sample collected for genetic analysis. One bull trout was detected at the downstream detection site on the White River in 2010. On Nason Creek, 11 bull trout were collected, and ten bull trout were PIT-tagged and tissue sample taken for genetic analysis. In 2010, two bull trout were detected at the downstream detection site in the White River and five bull trout were detected at the downstream detection site in Nason Creek.

In 2010, no bull trout were observed to be negatively impacted by Project operations or water quality parameters as a result thereof.

Literature Cited

- BioAnalysts, Inc. 2002. Movements of bull trout within the mid-Columbia River and tributaries, 2002-2003. Final Report. Prepared for the Public Utility No. 1 of Chelan County. Wenatchee, Washington. November 2002.
- BioAnalysts, Inc. 2003. Movement of radio-tagged bull trout within Priest Rapids and Wanapum Reservoirs, 2001-2003. Prepared for the Public Utility No. 2 of Grant County. Ephrata, Washington. July 2003.
- BioAnalysts, Inc. 2004. Movements of bull trout within the mid-Columbia River and tributaries, 2001-2004. Final Report. Prepared for the Public Utility No. 1 of Chelan County, Wenatchee, Washington. May 2004.
- Federal Energy Regulatory Commission, Order Issuing New License for Public Utility District No. 2 of Grant County, Docket Number P-2114-116 (April 17, 2008).

Appendix A
Comment Letters and E-Mails Received

Comments on the BT report from the Wanapum.

From: Alyssa Buck
Sent: Thursday, January 20, 2011 1:11 PM
To: Mike Clement
Subject: Bull Trout Monitoring comment

Mike,
PRFF meetings provide an avenue for Wanapum participation and to comment on our concerns and interests with Bull Trout management including monitoring activities. The plan distributed for review is a reflection of what has been presented and discussed with the forum and no comments are offered at this time.

Alyssa Buck
Wanapum Project Specialist
Cultural Resources
Grant Co. P.U.D.
(509) 793-1442

From: Stephen_Lewis@fws.gov [mailto:Stephen_Lewis@fws.gov]
Sent: Friday, January 21, 2011 4:27 PM
To: Mike Clement; Tom Dresser; RD_Nelle@fws.gov; verhepmv@dfw.wa.gov; dman461@ecy.wa.gov; Debbie Williams
Cc: Greg_VanStralen@fws.gov; Jessica_Gonzales@fws.gov; Judy_Delavergne@fws.gov; Jeff_Krupka@fws.gov
Subject: Fw: Grant PUD 2010 draft Bull Trout report for review

Hi Mike-

We have reviewed the draft report from Grant PUD titled, "Bull Trout Monitoring and Evaluation Report for the Priest Rapids Project, 2010." As you recall, this report is intended to meet obligations outlined in the USFWS' biological opinion, in addition to various relicensing requirements. It is our understanding that all comments on this report should be submitted to Grant PUD by January 24, 2011. Listed below are our comments and recommendations regarding a path forward.

General Comments, Observations, and Recommendations:

- *Section 2.0 Bull Trout Observations, page 2:* After reviewing this report, it was difficult to decipher yearly trends of bull trout use of the upstream fishways at the Priest Rapids Hydroelectric Project in comparison to 2010. We suggest inserting a simple table into this draft report that delineates between bull trout use of the westbank and eastbank fish ladders for both Priest Rapids and Wanapum dams previous to 2010;
- There is no apparent discussion which describes the operation of the existing adult upstream fishways in accordance with the Priest Rapids Salmon and Steelhead Settlement Agreement (Agreement) and Grant PUD's annual Fishway Operating Plan. This is especially important to the USFWS during the winter time when maintenance activities are conducted for these fishways. Please specify in this report whether or not Grant PUD's upstream fishway operation was in accordance with the Agreement and the Fishway Operation Plan. Term and Condition #1 of the USFWS' biological opinion contemplates this further:

"To implement RPM 1, FERC shall require Grant PUD, in coordination with the Service, to continue operating the existing adult upstream fishways at Project dams year-round. These facilities shall be operated according to criteria agreed to in the Priest Rapids Salmon and Steelhead Settlement Agreement (109 FERC ¶62,216) and/or Grant PUD's annual Fishway Operating Plans. During winter maintenance activities, only one fishway shall be closed at any one time at each Project facility to ensure that bull trout passage is possible at all times."

- *Section 2.0 Bull Trout Observations, pages 3-4:* This section also describes the incidental collection of two bull trout on December 4th and 5th in traps designed for the capture of pikeminnow. It was unfortunate that the two bull trout were not PIT-tagged or tissue samples taken for genetic analysis or were scanned for PIT-tags. We are pleased to know that the contractor for this operation has subsequently been trained to take genetic samples, scan and PIT-tag any bull trout caught in the future that meet the body mass requirements for PIT-tagging bull trout. However, we are concerned about the effect of these types of pikeminnow traps on bull trout as these incidental captures can be classified as a form of "incidental take" as specified by the Endangered Species Act. As a reminder, Grant PUD's level of lethal incidental take for predator

control activities is 1 adult bull trout. For clarification purposes, we suggest inserting pertinent information regarding the operation of these pikeminnow traps that would include the *who, what, where, when, why, and how*. For example, how many traps are deployed? How often are the traps checked? Lastly, we would like to know the remedial actions that Grant PUD will implement to help reduce the interactions of bull trout with these traps in the future. This could include increasing the frequency in which the traps are checked and/or changing the type of bait used inside the traps. Below is Term and Condition #11 of the USFWS' biological opinion which contemplates these types of actions:

"To implement RPM 4, FERC shall require Grant PUD, to monitor traps (i.e., redd caps and minnow traps) at least 1 time daily. Traps should be checked more frequently (at least 2 times a day) when any bull trout are captured or if crowding produced by an increasing catch rate results in a higher probability of injury or death to bull trout being held in the live box. Bull trout are aggressive predators and are known to be cannibalistic."

- *Section 3.0 Bull Trout Observations and Handlings on Nason Creek and White River, page 5:* Several tissue samples were collected from bull trout in the White River and Nason Creek. Please clarify in this section where these tissues samples were sent to for analysis.
- This draft report does not include a discussion of any apparent observations or occurrences of bull trout during activities associated with the implementation of the Hanford Reach Fall Chinook Protection Program Agreement. Please clarify whether or not observations or occurrences of bull trout did or did not occur. As a reminder, Term and Condition #8 of the USFWS' biological opinion is included below:

"To implement RPM 3, FERC shall require Grant PUD, in coordination with the Service and the PRCC, to implement the Hanford Reach Fall Chinook Protection Program Agreement within the limitations of the existing agreement in a manner that incorporates the conservation needs of the bull trout."

- *Section 5.0 Summary, page 9:* Lastly, this section again highlights that 7 bull trout were observed passing the fish ladder count station at Priest Rapids Dam and seven bull trout were observed passing the fish ladder count stations at Wanapum Dam. Is it possible to decipher whether or not fish passing upstream through Priest Rapids are different from individuals that pass upstream through Wanapum Dam?? This type of information would be useful in possibly describing bull trout use of the project's reservoirs. Please note any applicable information regarding this issue in the draft report.

We look forward to further participation in assisting Grant PUD to minimize the effect of the Priest Rapids Hydroelectric Project on bull trout. Please feel free to contact me if you questions concerning these comments.

S-

Stephen T. Lewis
Hydropower and Energy Coordinator
U.S. Fish and Wildlife Service
Central Washington Field Office
215 Melody Lane, Suite 119
Wenatchee, WA 98801

phone: (509) 665-3508 Ext. 14
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----- Forwarded by Stephen Lewis/WNES/R1/FWS/DOI on 01/21/2011 11:04 AM -----

**Debbie
Williams**
<Dwilli1@
gcpud.org
>
01/11/2011
09:41 AM

To" Brian McIlraith" <MCIB@critfc.org>,
"Bellatty, Jim" <jbel461@ECY.WA.GOV>,
Alyssa Buck <Abuck1@gcpud.org>, "Rex Buck,
Jr." <Rbuck@gcpud.org>, Mike Clement
<Mclemen@gcpud.org>, "Dach, Bob"
<robert.dach@bia.gov>, Tom Dresser
<TDresse@gcpud.org>, "Drohr5@aol.com"
<Drohr5@aol.com>, "Easterbrooks, John"
<eastejae@dfw.wa.gov>, "Hallock, Molly"
<hallomh@dfw.wa.gov>, "Hatch, Keith"
<keith.hatch@bia.gov>, "Heinith, Bob"
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<Larry_Hildebrand@golder.com>, "Irle, Pat"
<pir1461@ecy.wa.gov>, "Jackson, Chad"
<chad.jackson@dfw.wa.gov>, "James, Brad"
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<stephen_lewis@fws.gov>, Shannon Lowry
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Carl" <CarlMerkle@ctuir.com>, "Miller,
Donella" <donella@yakama.com>, "Miller, Joe"
<Joseph.Miller@chelanpud.org>, "Nass, Bryan"
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<brose@yakama.com>, "Scott, Teresa"
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<bruce.suzumoto@noaa.gov>, "Tweit, Bill"
<William.Tweit@dfw.wa.gov>, Ty Ehrman
<Tehrman@gcpud.org>, "Verhey, Pat"
<verhepmv@dfw.wa.gov>, Debbie Williams
<Dwilli1@gcpud.org>

cc

SubjectFW: Grant PUD 2010 draft Bull Trout report for
review

Hello,

Please see the attached draft 2010 Bull Trout Monitoring, Evaluation, and Hydrological Monitoring Plan. As discussed at last weeks PRFF meeting, please have all comments, edits, etc. submitted by COB on 24-January; prior to submittal to Ecology, and FERC.

Thank you,

Debbie Williams
Administrative Assistant
Fish, Wildlife & Water Quality
Grant County Public Utility District
Office: 509-754-5088 Ext. 2471
Cell: 509-220-1724
dwilli1@gcpud.org

(See attached file: Grant PUD_draft 2010 BT Report_Final_2011_Jan_11.pdf)

From: Verhey, Patrick M (DFW) [mailto:Patrick.Verhey@dfw.wa.gov]
Sent: Monday, January 24, 2011 4:19 PM
To: Debbie Williams; Tom Dresser; Mike Clement; Stephen_Lewis@fws.gov; Mangold, Marcie (ECY)
Cc: Korth, Jeffrey (DFW); Tweit, William M (DFW); Nelson, Travis W (DFW)
Subject: RE: Grant PUD 2010 draft Bull Trout report for review

Mike, thanks for the opportunity to review the draft report from Grant PUD titled, "Bull Trout Monitoring and Evaluation Report for the Priest Rapids Project, 2010." It is our understanding that all comments on this report should be submitted to Grant PUD by January 24, 2011. I have had the opportunity to review the report and the United State Fish and Wildlife Service (USFWS) comments on the Draft 2010 Bull Trout Annual report. I believe that WDFW concerns were adequately address by the USFWS comments, which were submitted to you last Friday, January 21, 2010.

If you have any question, please call me at 509 754-4624 or e-mail, Patrick.Verhey@dfw.wa.gov.

From: Debbie Williams [mailto:Dwilli1@gcpud.org]
Sent: Tuesday, January 11, 2011 9:42 AM
To: Brian McIlraith; Bellatty, James (ECY); Alyssa Buck; Rex Buck, Jr.; Mike Clement; Dach, Bob; Tom Dresser; Drohr5@aol.com; Easterbrooks, John A (DFW); Hallock, Molly (DFW); Hatch, Keith; Heinith, Bob; Ross Hendrick; Hildebrand, Larry; Irle, Pat (ECY); Jackson, Chad S (DFW); James, Brad W (DFW); Jeff Grizzel; Korth, Jeffrey (DFW); Lewis, Steve; Shannon Lowry; Malone, Kevin; Mangold, Marcie (ECY); Merkle, Carl; Miller, Donella; Miller, Joe; Nass, Bryan; Nelle, RD; Mike Nicholls; Nordlund, Bryan; Osborn, Jeff; Parker, Blaine; Parker, Steve; Peone, Joe; Powell, Jim; Julie Pyper; Rose, Bob; Scott, Teresa L (DFW); Suzumoto, Bruce; Tweit, William M (DFW); Ty Ehrman; Verhey, Patrick M (DFW); Debbie Williams
Subject: FW: Grant PUD 2010 draft Bull Trout report for review

Hello,

Please see the attached draft 2010 Bull Trout Monitoring, Evaluation, and Hydrological Monitoring Plan. As discussed at last weeks PRFF meeting, please have all comments, edits, etc. submitted by COB on 24-January; prior to submittal to Ecology, and FERC.

Thank you,

Debbie Williams
Administrative Assistant
Fish, Wildlife & Water Quality
Grant County Public Utility District
Office: 509-754-5088 Ext. 2471
Cell: 509-220-1724
dwilli1@gcpud.org

From: Verhey, Patrick M (DFW) [mailto:Patrick.Verhey@dfw.wa.gov]
Sent: Monday, January 24, 2011 4:26 PM
To: Debbie Williams; Tom Dresser; Mike Clement; Stephen_Lewis@fws.gov; Mangold, Marcie (ECY)
Cc: Korth, Jeffrey (DFW); Tweit, William M (DFW); Nelson, Travis W (DFW)
Subject: RE: Grant PUD 2010 draft Bull Trout report for review

Correction, the USFWS comments were received January 21, 2011, not 2010.

Patrick Verhey

From: Debbie Williams [mailto:Dwilli1@gcpud.org]
Sent: Tuesday, January 11, 2011 9:42 AM
To: Brian McIlraith; Bellatty, James (ECY); Alyssa Buck; Rex Buck, Jr.; Mike Clement; Dach, Bob; Tom Dresser; Drohr5@aol.com; Easterbrooks, John A (DFW); Hallock, Molly (DFW); Hatch, Keith; Heinith, Bob; Ross Hendrick; Hildebrand, Larry; Irle, Pat (ECY); Jackson, Chad S (DFW); James, Brad W (DFW); Jeff Grizzel; Korth, Jeffrey (DFW); Lewis, Steve; Shannon Lowry; Malone, Kevin; Mangold, Marcie (ECY); Merkle, Carl; Miller, Donella; Miller, Joe; Nass, Bryan; Nelle, RD; Mike Nicholls; Nordlund, Bryan; Osborn, Jeff; Parker, Blaine; Parker, Steve; Peone, Joe; Powell, Jim; Julie Pyper; Rose, Bob; Scott, Teresa L (DFW); Suzumoto, Bruce; Tweit, William M (DFW); Ty Ehrman; Verhey, Patrick M (DFW); Debbie Williams
Subject: FW: Grant PUD 2010 draft Bull Trout report for review

Hello,

Please see the attached draft 2010 Bull Trout Monitoring, Evaluation, and Hydrological Monitoring Plan. As discussed at last weeks PRFF meeting, please have all comments, edits, etc. submitted by COB on 24-January; prior to submittal to Ecology, and FERC.

Thank you,

Debbie Williams
Administrative Assistant
Fish, Wildlife & Water Quality
Grant County Public Utility District
Office: 509-754-5088 Ext. 2471
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dwilli1@gcpud.org

Appendix B
Consultation Comment and Response Table

SUMMARY TABLE OF COMMENTS AND GRANT PUD RESPONSES FOR 2010 BULL TROUT MONITORING AND EVALUATION REPORT.

Submitting Entity	Date Received	Paragraph #	Agency Comment	Grant PUD Response
Wanapum	1/20/2011	1	PRFF meetings provide an avenue for Wanapum participation and to comment on our concerns and interests with Bull Trout management including monitoring activities. The plan distributed for review is a reflection of what has been presented and discussed with the forum and no comments are offered at this time.	Grant PUD appreciates the Wanapum's review of the 2010 BT M&E Draft Report.
USFWS	1/21/2011	1	We have reviewed the draft report from Grant PUD titled, "Bull Trout Monitoring and Evaluation Report for the Priest Rapids Project, 2010." As you recall, this report is intended to meet obligations outlined in the USFWS' biological opinion, in addition to various relicensing requirements. It is our understanding that all comments on this report should be submitted to Grant PUD by January 24, 2011. Listed below are our comments and recommendations regarding a path forward.	Grant PUD appreciates the USFWS's review of the 2010 BT M&E Draft Report.
		2	<ul style="list-style-type: none"> <i>Section 2.0 Bull Trout Observations, page 2:</i> After reviewing this report, it was difficult to decipher yearly trends of bull trout use of the upstream fishways at the Priest Rapids Hydroelectric Project in comparison to 2010. We suggest inserting a simple table into this draft report that delineates between bull trout use of the westbank and eastbank fish ladders for both Priest Rapids and Wanapum dams previous to 2010; 	Grant PUD acknowledges comment and has created Table 2 in section 2 that depicts recent trends in bull trout passage at Priest Rapids Project dams.
		3	<ul style="list-style-type: none"> There is no apparent discussion which describes the operation of the existing adult upstream fishways in accordance with the Priest Rapids Salmon and Steelhead Settlement Agreement (Agreement) and Grant PUD's annual Fishway Operating Plan. This is especially important to the USFWS during the winter time when maintenance activities are conducted for these fishways. Please specify in this report whether or 	Grant PUD operates the fish ladders at both Wanapum and Priest Rapids dams according to Grant PUD's Fishway Operation Plan which requires at least one ladder per dam to be operating at full capacity during fishway maintenance seasons, approximately November 15 through March 31 annually. Additional information has been added to Section 2 to reflect this information.

			<p>not Grant PUD's upstream fishway operation was in accordance with the Agreement and the Fishway Operation Plan. Term and Condition #1 of the USFWS' biological opinion contemplates this further:</p> <p><i>"To implement RPM 1, FERC shall require Grant PUD, in coordination with the Service, to continue operating the existing adult upstream fishways at Project dams year-round. These facilities shall be operated according to criteria agreed to in the Priest Rapids Salmon and Steelhead Settlement Agreement (109 FERC ¶62,216) and/or Grant PUD's annual Fishway Operating Plans. During winter maintenance activities, only one fishway shall be closed at any one time at each Project facility to ensure that bull trout passage is possible at all times."</i></p>	
		4	<ul style="list-style-type: none"> • <i>Section 2.0 Bull Trout Observations, pages 3-4:</i> This section also describes the incidental collection of two bull trout on December 4th and 5th in traps designed for the capture of pikeminnow. It was unfortunate that the two bull trout were not PIT-tagged or tissue samples taken for genetic analysis or were scanned for PIT-tags. We are pleased to know that the contractor for this operation has subsequently been trained to take genetic samples, scan and PIT-tag any bull trout caught in the future that meet the body mass requirements for PIT-tagging bull trout. However, we are concerned about the effect of these types of pikeminnow traps on 	<p>Grant PUD acknowledges this comment and will train any future contractors that may potentially come in contact with bull trout. The contractor in question has been trained in bull trout identification, PIT-tag scanning, measuring, taking photos of bull trout, taking genetic samples, and marking with PIT-tags. Grant PUD has supplied the contractor, and will supply future contractors as needed, with PIT-tagging and scanning equipment. Information has been added to Section 2 of the report to clarify USFWS concerns. To decrease the chances of "incidental take" in future</p>

			<p>bull trout as these incidental captures can be classified as a form of "incidental take" as specified by the Endangered Species Act. As a reminder, Grant PUD's level of lethal incidental take for predator control activities is 1 adult bull trout. For clarification purposes, we suggest inserting pertinent information regarding the operation of these pikeminnow traps that would include the <i>who, what, where, when, why, and how</i>. For example, how many traps are deployed? How often are the traps checked? Lastly, we would like to know the remedial actions that Grant PUD will implement to help reduce the interactions of bull trout with these traps in the future. This could include increasing the frequency in which the traps are checked and/or changing the type of bait used inside the traps. Below is Term and Condition #11 of the USFWS' biological opinion which contemplates these types of actions:</p> <p><i>"To implement RPM 4, FERC shall require Grant PUD, to monitor traps (i.e., redd caps and minnow traps) at least 1 time daily. Traps should be checked more frequently (at least 2 times a day) when any bull trout are captured or if crowding produced by an increasing catch rate results in a higher probability of injury or death to bull trout being held in the live box. Bull trout are aggressive predators and are known to be cannibalistic."</i></p>	<p>northern pikeminnow collection seasons, Grant PUD will not fish traps for northern pikeminnow during the winter months when bull trout are known be in the Project reservoirs as part of their foraging/overwintering life history stages.</p>
		5	<ul style="list-style-type: none"> Section 3.0 Bull Trout Observations and Handlings on Nason Creek and White River, page 5: Several tissue samples were collected from bull trout in the White 	<p>Grant PUD acknowledges comment. A sentence was added to Section 3 to clarify where these tissue samples were sent for</p>

			River and Nason Creek. Please clarify in this section where these tissues samples were sent to for analysis.	analysis.
		6	<ul style="list-style-type: none"> This draft report does not include a discussion of any apparent observations or occurrences of bull trout during activities associated with the implementation of the Hanford Reach Fall Chinook Protection Program Agreement. Please clarify whether or not observations or occurrences of bull trout did or did not occur. As a reminder, Term and Condition #8 of the USFWS' biological opinion is included below: <p><i>"To implement RPM 3, FERC shall require Grant PUD, in coordination with the Service and the PRCC, to implement the Hanford Reach Fall Chinook Protection Program Agreement within the limitations of the existing agreement in a manner that incorporates the conservation needs of the bull trout."</i></p>	Grant PUD acknowledges comment. A sentence was added in Section 2 stating that no bull trout were observed in any activities associated with Hanford Reach Fall Chinook Protection Program activities.
		7	<ul style="list-style-type: none"> <i>Section 5.0 Summary, page 9:</i> Lastly, this section again highlights that 7 bull trout were observed passing the fish ladder count station at Priest Rapids Dam and seven bull trout were observed passing the fish ladder count stations at Wanapum Dam. Is it possible to decipher whether or not fish passing upstream through Priest Rapids are different from individuals that pass upstream through Wanapum Dam?? This type of information would be useful in possibly describing bull trout use of the project's reservoirs. Please note any applicable information regarding this issue in the draft report. 	Grant PUD acknowledges comment. Unless each bull trout is uniquely identified with a PIT-tag, it is not possible for Grant PUD to determine if bull trout traveling through the fish ladders at Priest Rapids Dam are the same bull trout observed passing through the fish ladders at Wanapum Dam. Additional information has been added to Section 2.0 to address this inquiry.

		8	We look forward to further participation in assisting Grant PUD to minimize the effect of the Priest Rapids Hydroelectric Project on bull trout. Please feel free to contact me if you questions concerning these comments.	Grant PUD appreciates the suggested comments by the USFWS on the 2010 BT M&E Draft Report.
WDFW	1/24/2011	1	Mike, thanks for the opportunity to review the draft report from Grant PUD titled, "Bull Trout Monitoring and Evaluation Report for the Priest Rapids Project, 2010." It is our understanding that all comments on this report should be submitted to Grant PUD by January 24, 2011. I have had the opportunity to review the report and the United State Fish and Wildlife Service (USFWS) comments on the Draft 2010 Bull Trout Annual report. I believe that WDFW concerns were adequately addressed by the USFWS comments, which were submitted to you last Friday, January 21, 2010.	Grant PUD appreciates WDFW's review of the 2010 BT M&E Draft Report.
		2	Correction, the USFWS comments were received January 21, 2011, not 2010.	Comment noted.