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# American Wildlands Comment Letter

December 13, 2002

Mr. Evan Lewis  
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Seattle District, Corps of Engineers  
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Seattle, WA 98124-3755  
e-mail [uceis@usace.army.mil](mailto:uceis@usace.army.mil); [evan.r.lewis@usace.army.mil](mailto:evan.r.lewis@usace.army.mil)

Sent by mail and e-mail

Dear Mr. Evans:

American Wildlands is please to submit the following comments on the Army Corps of Engineers' (ACOE) draft environmental assessment on "Interim Implementation of Alternative Flood Control and Fish Flows at Libby and Hungry Horse Dams in Montana" (EA). We support the ACOE implementing the "Variable Q flood control" (VARQ) beginning January 1, 2003.

We herein incorporate the comments of the Center for Biological Diversity, particularly as those comments relate to species in addition to the Burbot, notably Kootenai River White Sturgeon.

## Background for Burbot

The burbot (*Lota lota*) population in the lower Kootenai River in Idaho and in Kootenay Lake, British Columbia, is at risk of extinction

1 { The Kootenai River is part of the upper Columbia River drainage and is the second largest tributary to the Columbia River. The Kootenai River originates within the Kootenay National Park, British Columbia. From there it flows south into Montana where the Libby Dam impounds the water back to Canada in Lake Kocanusa. From the Dam, the Kootenai River heads west over Kootenai Falls and northwest into Idaho. In Idaho, the river heads north and travels back to British Columbia and Kootenay Lake. The reach of the Kootenai River in Idaho is 106 km long.

2 { The lower Kootenai River burbot is a distinct population segment. 61 Fed. Reg. 4721 (February 7, 1996). It is physically, physiologically, ecologically, and behaviorally distinct from other burbot populations in the Kootenai River and Kootenay Lake. At one time the lower Kootenai River burbot, nicknamed the "Leopard of the Kootenai," provided an important sport fishery in the Kootenai River, Idaho, and Kootenay Lake, British Columbia. However, burbot numbers have declined since 1959. Despite fishery regulations implemented in the 1970's, the burbot

fisheries in the Kootenai River in Idaho and Kootenay Lake, B.C., collapsed after the construction of the Libby Dam in 1972, on the Kootenai River near Libby, Montana.

2

Today, the number of burbot in the lower Kootenai River has declined to an almost non-existent population. The Idaho Department of Fish and Game (IDFG) found that the lower Kootenai River burbot is near demographic extinction. This distinct burbot population is listed as threatened by the State of Idaho and as sensitive by Region 1 of the Forest Service. The burbot fishery is currently closed in the Kootenai River, Idaho, and in Kootenay Lake, British Columbia.

3

Fisheries biologists have found three factors to be associated with the drastic decline of burbot within the lower Kootenai River: overexploitation, temperature and flow change that may have altered spawning behavior, and poor fry survival due to a reduction in productivity (food production) of the river. IDFG studies found that declines of lower Kootenai River burbot appear to be most strongly associated with habitat modification resulting from the construction and operation of Libby Dam. After completion of the Libby Dam, winter flows tripled and water temperature increased by 3 degrees in the lower Kootenai River. These habitat modifications prohibit burbot migration to spawning tributaries in the Kootenai River. Burbot spawn during the winter, often during ice conditions, usually during the first two weeks of February. They are attracted to cooler water temperatures and have been observed to actually migrate away from warmer water.

While Burbot move extensive distances during the winter to spawn, they are very weak swimmers and cannot move upstream in fast-moving water. In addition, burbot spawn in what is described as a large “ball” with one or two females at the center surrounded by many males. Accordingly, spawning involves more than just one pair of fish. From 1993 to 1996 only one juvenile burbot was captured by fisheries biologists studying the lower Kootenai River, and no larval fish have been collected.

4

Resistance by the Bonneville Power Association, which manages the Libby Dam, to alter flows to enable burbot spawning threatens to push Burbot into extinction. The US Fish and Wildlife Service is currently considering a listing petition to protect the Burbot under the Endangered Species Act.

### **The VARQ Must Be Implemented Immediately to Protect Burbot**

5

Because Burbot are extremely sensitive to temperature and because they are weak swimmers, failure to alter Libby Dam flows will almost certainly impact the Burbot population and its ability to reproduce this year. Therefore, the ACOE should implement the VARQ this winter.

6

The EA identifies that Burbot have high fecundity, but does not delve into the specifics of the Kootenai River Burbot, whose numbers are not only precariously low but whose reproduction depends on cold waters and a very specific flow regime.

7

Operation of Libby Dam for hydropower and flood control has changed the natural hydrograph and created warmer winter water temperatures (Partridge 1983; Paragamian et al. 2000). Winter

flows are now more erratic and three to four times greater than pre-dam conditions. Burbot are winter spawners and are known to travel over 125 km (77.7 mi) to spawn (Breaser et al. 1988). Burbot in the Kootenai River have traveled up to 120 km (75 mi) from Kootenay Lake to spawn in tributaries in Idaho (Paragamian 2000). Winter was the most environmentally stable period of the year prior to Libby Dam, when flows in the Kootenai River were at their lowest seasonal level. Burbot have low swimming stamina (compared to 19 other species) and velocities in excess of 24 cm/s (9.4 in/s) affected sustained swimming endurance when subjected for more than 10 minutes (Jones et al. 1974); thus it is reasonable to believe increased flow could affect spawning migration.

With a couple of exceptions, releases from Libby Dam during the fall/winter migration and spawning period in the 2000/2001 water year remained below 10,000 cfs, with the lowest flows in the 4,000 to 6,000 cfs range. Under these low flow conditions, some burbot did migrate to the Bonners Ferry area, and for the first time in recent years, there was evidence that spawning occurred there. Successful recruitment has yet to be verified (Vaughn Paragamian, IDFG. 2001, Pers. Com.). This underscores that low flows are necessary for Burbot survival. Exactly how low the flows must be not absolutely clear, but it makes the case for implementing VARQ immediately.

7

Burbot historically were believed to have spawned when water temperatures were near 1.0 °C. Prior to operations of Libby Dam, spawning may have occurred some years beneath the ice that commonly covered the Kootenai River in Kootenai Flats during the winter. Last year during the third week of January when burbot were believed to have spawned in the Kootenai River water temperatures at Bonners Ferry ranged from slightly below freezing to 3.3°C. Since Libby Dam altered flows, typical winter river water temperatures have been increased from about 1.0 °C to about 4.0 °C (Partridge 1983). Burbot would be expected to spawn when water is only about 1.5 °C (Becker 1983; MacKay 1963).

The river has not frozen over in any major way since Libby Dam became operational. This is a result of seasonally high releases from Libby Dam with unnaturally high water temperatures, warmed through heat retention and delayed release from the reservoir, and additional energy released from increased velocity and friction of these unseasonably high flows. The bottom line is that the dam's current operations are significantly affecting Burbot movement and spawning. Implementing VARQ in 2003 is a necessary first step to alter flow and temperature.

It is important to note that it is not clear that VARQ goes far enough to truly protect the Kootenai River Burbot. VARQ's resultant temperature and flow regimes are a critical step towards protecting and promoting the Burbot, but lower flows for a longer period may be necessary.

### **The EA Modeling is Flawed and Incorrectly Uses a Worst Case Scenario**

8

The EA considers a model presented in "Hydrologic Analysis of Upper Columbia Alternative Flood Control and Fish Operations On Columbia River System including the VARQ Flood Control Plan at Libby and Hungry Horse Projects" to determine socioeconomic impacts. However, the EA admits that:

8

“The daily time step model results may be used to develop frequency curves or exceedence curves, yet they are not representative of what may actually occur during real-time operation. For instance, the forecasts used in Libby Dam operations are more conservative than those used in the modeling discussed below. Also, the modeling scenarios do not incorporate the project operator’s real-time adaptive management decision-making that may change outflow from Libby Dam, nor do they include other system operations such as fish or power operations that would result in different project releases.”

This admits that Kootenai River flows are skewed upwards – and that the analysis ultimately presents a worst-case scenario. The EA concludes that “VARQ FC with fish flows appears to increase the risk of flooding magnitude and severity along the Kootenia River, particularly if early season runoff volume forecasts substantially underestimate the actual runoff volume.” This conclusion is thus, at a minimum, suspect because the EA overestimates flows. This seems more likely to raise concerns among floodplain landowners than fairly assess VARQ impacts. This must be corrected in the final EA.

Thank you for considering our comments. Please contact me if you need additional information or assistance.

Sincerely,

Stu Levit  
Watershed Coordinator

## REFERENCES:

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## ***Response to American Wildlands Comments***

CENWS-PM-PL-ER

23 Dec 2002

Draft EA for Interim Implementation of Alternative Flood Control and Fish Operations Responses to American Wildlands Comments, 13 Dec 2002

1. Comment noted.
2. Comment noted. To clarify, the status review of Kootenai River burbot is not yet completed so the Kootenai River population of burbot have not, at this time, been designated as a distinct population segment (the Federal Register notice referenced in the American Wildlands letter defines criteria for designating a species as a distinct population segment). The implication that burbot fishery collapse is a direct result of Libby Dam construction is not fully supported at this time; investigation of issues is ongoing, and other factors may be involved, as the commenter's subsequent comment indicates.
3. Comment noted.
4. Neither the Corps of Engineers nor the Bureau of Reclamation can comment on intent of the Bonneville Power Administration or the U.S. Fish and Wildlife Service.
5. Burbot are among the species being considered in impact evaluations in this EA, to decide whether to implement VARQ beginning in winter of 2003.
6. Section 3.2.4.5 of the final EA summarizes the relevant details about burbot life history and status in the Kootenai River.
7. To the extent that alteration of flow regime and temperature from Libby Dam operation have impacted burbot, we acknowledge those impacts in Section 5.2.4.5 of the final EA, and will include that information in our consideration for deciding whether to implement VARQ beginning in winter of 2003.
8. The modeling performed for this EA indicates relative differences between alternatives but does not necessarily predict actual flow levels for specific events. We believe there is some increased flood risk to Bonners Ferry and Kootenay Lake for VARQ FC relative to Standard FC; however, the Corps believes real-time adaptive management will enable the Corps to manage this risk. We are revising the EA to reflect that modeling is only one tool used to evaluate flood control alternatives, and to more clearly show the benefit of real-time adaptive management operations on flood control (Section 5.1.2.1.1).

# Terry Andreesen Comment Letter

From: TIMBERLINE L AUTO CENTER, INC. [timber@lclink.com]  
Sent: Wednesday, December 11, 2002 7:40 AM  
To: Lewis, Evan R NWS  
Subject: Libby Dam

Evan Lewis

- 1 { I would first like to request the results of the White Sturgeon study at Bonner's Ferry during the flows of 41,000 cfs of 2002 with respect to egg fertilization, young smolts etc. The numbers must have been phenomenal.
- 2 { I would also hope that a realistic economic analysis be completed for the EIS. Included should be the devastating economic loss of the local recreational fishing opportunities for local outfitters and guides on the Kootenai River below the Libby Dam. Other economic factors should be the crop loss of farmers near Bonner's Ferry and the loss of real estate values to properties along the Kootenai River.
- 3 { There also seems to be a total lack of consideration for waterfowl, insects, and other forms of wildlife that have been established along the Kootenai River below Libby Dam in the last 27 years.
- 4 { It is obvious from your EA that we were purposely lied to by you and fellow staff members in previous public meetings. It also indicates that the types of flows we witnessed from June-August 2002 will probably be the norm considering your inability to forecast in-flows.
- 5 { Far more interesting is the fact that Vari-Q was implimented for fish flow augmentation before the EA andEIS were written. Is that legal??? I am going to ask that question of the Mountain States Legal Foundation.

I must also add that you people are an example of the unabated Federal Bureaucracy that is becoming far too prevalent.

Terry Andreesen

## ***Response to Terry Andreesen Comments***

CENWS-PM-PL-ER

23 Dec 2002

Draft EA for Interim Implementation of Alternative Flood Control and Fish Operations Responses to Terry Andreesen Comments, 11 Dec 2002

1. We suggest the commenter contact Idaho Dept. of Fish and Game (IDFG) for results of sturgeon monitoring in the Kootenai River in 2002. Vaughn Paragamian of IDFG states that sturgeon spawning was finished before the spill event and the elevated dam releases occurred.
2. We have some economic information available to us at this time; however, a more comprehensive analysis is planned for the EIS, including a study of groundwater seepage around Bonners Ferry. We always seek information that will help us evaluate effects of our proposed actions. Specific information, including the sources, would be helpful.
3. We have included the information we had available at the time of writing. The EA was prepared in response to the Corps' and the other Action Agencies' (Bonneville Power Administration and U.S. Bureau of Reclamation) responsibilities under the Endangered Species Act. The USFWS BiOp and Incidental Take Statement and the NMFS BiOp called for VARQ implementation for the 2002 fish migration season.
4. High runoff late in the 2002 snowmelt season was the result of late-season snow and high temperatures, and our operations were managed in real time to address these phenomena. The shape of the runoff is dependent on precipitation and temperature patterns which are more difficult to predict. The risk of experiencing involuntary spill in any given year is small with either standard flood control or VARQ with fish flows, and given real-time management, the increase in risk of involuntary spill and exceedance of Montana's total dissolved gas standards with VARQ FC is not considered significant.
5. As of the time of release of the draft environmental assessment, VARQ had not been implemented at Libby Dam, and for Hungry Horse Dam, was previously documented with an EA. For information, the commenter is referred to the U.S. Bureau of Reclamation's "Voluntary Environmental Assessment and FONSI 02-02: Interim Operation of the VARQ Flood Control Plan at Hungry Horse Dam, MT" Pacific Northwest Region, Boise, Idaho at [www.pn.usbr.gov/project/salmon/pdf/VARQFONSI.pdf](http://www.pn.usbr.gov/project/salmon/pdf/VARQFONSI.pdf).

# Anheuser-Busch Companies Comment Letter

December 31, 2002

Mr. Evan R. Lewis  
Environmental Resources Section  
U.S. Army Corps of Engineers  
P.O. Box 3755  
Seattle, WA 98124-3755

Re: Comments on November 2002 Environmental Assessment for Upper Columbia  
Alternative Flood Control and Fish Operations

Dear Mr. Lewis:

Busch Agricultural Resources, Inc. (“BARI”), a subsidiary of Anheuser-Busch Companies, Inc. (“A-B”), is the owner and operator of Elk Mountain Farm in Bonners Ferry, Idaho. This letter contains BARI’s comments to the U.S. Army Corps of Engineers (“Corps”) and the U.S. Bureau of Reclamation (“Bureau”) on the November 2002 Draft Environmental Assessment for the Upper Columbia Flood Control and Fish Operations Interim Implementation for Libby and Hungry Horse Dams (“Draft EA”). As we stated in earlier correspondence regarding the April 8, 2002, Draft Environmental Assessment of the proposed spill test at Libby Dam in Lincoln County, Montana, operation of Libby Dam has significant impacts on Elk Mountain Farm. Elk Mountain Farm is a primary producer of hops for A-B, and is located in one of the few areas in the world where the climate and other conditions allow commercial cultivation of strains of hops necessary for A-B’s worldwide brewing operations and the kraeusening of key brands. In fact, Elk Mountain accounts for 14% of AB’s worldwide hop requirements.

1 Anheuser-Busch has a longstanding commitment to environmental protection and appreciates efforts to protect endangered species. Anheuser-Busch supports efforts to revive endangered anadromous and resident fish species in the Kootenai River. However, we have grave concerns over the implementation of VARQ (Variable Discharge). We are aware of the challenges facing the Corps and the difficulties inherent in satisfying the legal entitlements of stakeholders along the Kootenai River including flood control, hydropower, recreation, and more recently mitigating impacts to endangered species. As such, Anheuser-Busch strongly urges the Corps to seek ways to operate Libby Dam that continue to balance the multiple purposes of the dam without adversely impacting one sector over another. In the past several years, operation of Libby Dam has contributed to flood impacts at Elk Mountain Farm and we urge the Corps to evaluate, examine, fully study, and if necessary mitigate its effects, prior to making any decisions to implement VARQ. The Draft Environmental Assessment fails to adequately consider a range of alternatives that have the potential to benefit the species of concern without increasing the flood risk to Elk Mountain Farm.

The flood control regime at Libby Dam directly affects operations and productivity at the farm and, thus, A-B’s source for this vital crop resource. The Draft EA evaluates the proposed implementation of the program known as “variable discharge (VARQ, with Q representing engineering shorthand for discharge) flood control operation and fish flows,” which the Draft EA

1

says is “intended to benefit various fish stocks listed as threatened and endangered” (Abstract, Draft EA).

2

The Draft EA refers to VARQ as “VARQ FC,” with the “FC” presumably referring to flood control. While many questions remain about its presumed benefits to fish, it is evident that VARQ will increase groundwater seepage and flood risk at Elk Mountain Farm and directly or indirectly destroy crops on which BARI and A-B depend. The Draft EA also refers to the proposed action as the “interim” implementation of the VARQ flood control regime at Libby and Hungry Horse Dams. The Draft EA’s Executive Summary states that the document

considers effects that may occur if alternative operational actions are implemented prior to completion of an environmental impact statement, currently scheduled for late 2004, on long-term implementation of [VARQ].

(Emphasis added.) The reason for interim implementation is not explained, nor is its legal basis. The Corps already announced, in summer 2001, that it is going to prepare a full environmental impact statement (“EIS”) pursuant to the National Environmental Policy Act (“NEPA”) to evaluate implementation of VARQ at Libby Dam. Because it has already been determined that the environmental impacts of implementing VARQ are sufficiently significant to require an EIS, we do not believe it is appropriate to base any decisions regarding implementation (interim or otherwise) on this EA. The Draft EA does not evaluate or describe the substantial list of environmental effects VARQ will have, in part, because several studies crucial to the evaluation are just now getting underway. Implementing VARQ would be permissible only after the EIS is completed and a final, informed decision is made.

3

Indeed, your agency already has completed an environmental assessment of VARQ implementation for Libby Dam operations. This is the Corps’ August 20, 2001 “Environmental Assessment, Upper Columbia Basin Alternative Flood Control and Fish Operations” (“2001 EA”). It was prepared specifically to address “implementation of an alternative flood control strategy, called variable discharge (variable Q or VARQ), required at Libby and Hungry Horse Dams” (2001 EA at 1). The 2001 EA states:

If remaining studies of system flood control prove VARQ feasible and significant impacts can be mitigated, it would be implemented the winter following completion of NEPA documentation (EIS, Record of Decision), scheduled for completion in early 2004 (2001 EA at 2).

The 2001 EA gave rise to the agencies’ recognition that an EIS is required in this case. Implementing such an action only after the EIS is completed is exactly what NEPA mandates, not to mention the Corps’ and the Bureau’s own regulations. It appears that the agencies now intend to implement VARQ before the EIS is even in draft form. We believe that doing so would violate the

3 law.<sup>1</sup> We encourage the agencies to defer implementing VARQ at Libby Dam until they have completed the necessary studies and issued the EIS.

4 Furthermore, the 2001 EA identified four alternatives, including a “no action” alternative that would involve continuation of current flow releases for sturgeon, bull trout and salmon. Presumably, the EIS will evaluate at least these four, and perhaps others. The 2001 EA then identified a series of impacts associated with these alternatives (2001 EA at 3). This review of impacts led to the conclusion that an EIS is required. In contrast, the Draft EA considers only two alternatives, a “base case or No Action Alternative,”<sup>2</sup> and the interim implementation of VARQ at Libby (Draft EA at 41). We question whether the Draft EA’s limited evaluation of alternatives comports with NEPA.

In addition to these procedural problems, BARI believes, based on what information is currently available, that implementing VARQ will exacerbate an already-serious problem of land drainage at Elk Mountain Farm, will unduly increase the risk of land water logging and flooding at the farm and surrounding areas, and will have (at best) unknown benefits for the endangered fish. The Draft EA acknowledges that adverse agricultural drainage impacts occur when the river stage at Bonners Ferry exceeds 1,758 feet above mean sea level (msl) for more than 3 days, and that VARQ will result in higher river levels for longer durations than would occur under the existing flood control rules. The frequency analysis presented in the Draft EA shows that the annual peak stage at Bonners Ferry will exceed 1,758’ msl about 75% of the time under VARQ versus about 55% of the time under standard flood control rules.

5 We believe the agricultural drainage impacts associated with high river stage to be significant. The Draft EA cites a recent study by Harp and Darden (2001) concluding that the sturgeon and salmon recovery flows implemented in 1995 have led to an additional \$515,000 per year in damages to valley agriculture because of elevated ground water levels. That same study identified losses in excess of \$1.2 million in 1997. We believe these figures substantially underestimate damages just to Elk Mountain Farm (to say nothing of surrounding farms) because they do not include either the full value or overall amount of crops lost to these conditions.

To be specific, the cost of replanting can be reasonably estimated by using about \$2,000 per acre. However, production costs more than double that cost per acre, and it takes three years to reestablish a hop plant after it has been replanted. In the second year of production, hops growers can generally achieve only about half of normal production. Therefore, including the input costs during the year of actual flooding, plus the replanting cost, input costs in the 2 years after replanting, total dollars spent to replant 1 acre of hops over the 3 year reestablishment period are well in excess of \$10,000.

<sup>1</sup> We do not believe that any other statutory duty, such as one arising under the Endangered Species Act, compels action before NEPA compliance in this instance. In any event, the Corps has not explained how it would be impossible to comply with NEPA before implementing the action in this case.

<sup>2</sup>The No Action Alternative would continue VARQ at Hungry Horse but would not implement it at Libby. The Bureau began implementing VARQ at Hungry Horse in 2001 after completing an EA and concluding that doing so there would have no significant environmental impact; therefore, no EIS was required for VARQ in that instance. Obviously, the opposite is true for VARQ at Libby, as the Corps itself has found. “[T]he proposed alternative flood control and fish operations would significantly affect the quality of the human environment. A formal EIS in accordance with NEPA is required for this work” (2001 EA at 4).

Further, these high flows also result in tens of thousands of dollars in riverbank damage and extra pumping costs each year. Additionally, the longer the river is high the greater the chance of some kind of pump failure, (e.g., electrical or mechanical) resulting in the flooding of hundreds of additional acres.

5

BARI also suffers losses of hop acreage well beyond the acres actually experiencing water logging or flooding. This is because of the exacting cultivation and pest-control requirements for these crops, and the fact that the plants rely on trellis supports. Even if only part of a field is waterlogged, it usually means that the entire field is impassable by the equipment necessary to carry out these tasks. This leaves you, for example, with the potential for uncontrolled mildew infections that could wipe out your whole crop. The Harp and Darden study appears to have considered only those acres actually under water in determining crops lost due to high water conditions, and addressed only the replacement cost of the lost plants. We believe that the actual economic impact of high water and flood conditions actually is many times higher than the Draft EA's figure.

Even this higher monetary estimate understates the potential damage to Anheuser-Busch because monetary loss is not the paramount issue. What is of most concern is that the hops grown at Elk Mountain are a crucial piece of the complex brewing process for Anheuser-Busch. It would simply not be possible to go out and purchase other hops to make up for the 14% of Anheuser-Busch's total hop requirements produced at Elk Mountain Farm due to the unique nature of the harvest there.

6

The Draft EA acknowledges that groundwater seepage into agricultural lands between Bonners Ferry and Kootenay Lake will be higher under VARQ than under standard flood control rules. The EA also states that relationships between dam operations and river stage/duration are not well known and that further hydrologic and ground water modeling to be done for the EIS will shed more light on these issues. Until these depth and duration effects can be assessed with confidence, and until agricultural damages can be properly quantified and weighed against the benefits of VARQ, we believe the implementation of VARQ is premature.

7

River stage at Bonners Ferry and in the vicinity of Elk Mountain Farm is also substantially affected by backwater effects from Kootenay Lake downstream. Under a 1938 Order of the International Joint Commission ("IJC Order"), summer water levels at Kootenay Lake are not to exceed 1,745.32' msl (1928 Canadian datum) and that the lake is to be drawn down to 1,743.32' msl expeditiously to prevent damages to upstream agriculture.

The water levels specified in the IJC Order have been exceeded several times since sturgeon and salmon recovery releases from Libby Dam began in 1995. Furthermore, the frequency analysis of Kootenay Lake levels presented in the Draft EA shows that the annual peak lake levels will exceed 1,745' about 90% of the time under VARQ versus 68% of the time under standard flood control rules with sturgeon and salmon recovery releases. Therefore, it appears that implementing VARQ will make it even more difficult to comply with the requirements of the IJC Order. Again, VARQ will cause damage to agricultural lands in the Kootenai River basin.

8

We also have learned that, because of a 1988 change in the methodology for determining U.S. elevation data, the official U.S. and Canadian data in the area of Kootenay Lake may now differ by as much as 4 feet. This makes accurate determination of Kootenay Lake levels problematic and

8

underscores the question of whether the computer modeling in the Draft EA is adequate to accurately predict river stage at Bonners Ferry or in the vicinity of Elk Mountain Farm. The Draft EA states that relationships between dam operations and river stage/duration are not well known and will be studied for the EIS. While we agree that these subjects need to be studied further in connection with the EIS, at this point it appears clear that implementing VARQ at Libby Dam will increase flood risk to the detriment of farm operations and other interests in the Kootenai Valley. Accordingly, BARI believes that implementation of VARQ should be postponed until further studies are completed and the EIS is final and the scope and nature of these likely effects are better known.

9

The Draft EA acknowledges that implementation of VARQ with fish flows increases the magnitude and severity of flood risk, especially when early inflow forecasts underestimate runoff. Analyses presented in the Draft EA show that the peak stage at Bonners Ferry under 1948 hydrologic conditions will be 1,770' msl (6 feet above official flood stage) with VARQ versus 1,764' msl under standard flood control rules. Our analysis of inflow forecast error shows that, in the high-runoff years since Libby Dam began operating (1976, 1981, 1990, 1991, 1996, 1997 and 2002), inflows have been under-estimated most of the time, sometimes by as much as 23%. The Draft EA also acknowledges that implementation of VARQ increases the likelihood of involuntary spill at Libby and thus increases the likelihood that Total Dissolved Gas (TDG) concentrations will exceed the Montana limit of 110%. Because of the increases in flood risk and TDG concentrations, BARI believes that interim implementation of VARQ is premature.

10

The Draft EA acknowledges that other factors besides flow are critical to fish recovery, specifically noting sediment and temperature effects of logging in the Fisher River watershed and loss of rearing habitat because of levee construction. The effect of reservoir operation on white sturgeon was identified as a "critical uncertainty" in the 2001 Progress Report for the Federal Columbia River Power System submitted to National Marine Fisheries Service last May.

This uncertainty is exacerbated by the poorly understood relationships between releases, river stage and Kootenay Lake levels. If Kootenay Lake levels are high enough (and they are expected to be higher under VARQ), it may not be possible to successfully maintain clean gravel spawning beds in the Critical Habitat reach with any reasonable volumes of release from Libby Dam. Because the effectiveness of reservoir releases on sturgeon recovery is so uncertain, we believe it is premature to implement VARQ without the full evaluation that will be made in preparing the EIS.

We appreciate the opportunity to provide these comments.

Sincerely,

Rich Keating  
Vice President and Senior Government Affairs Officer  
Anheuser-Busch

## ***Response to Anheuser-Busch Companies Comments***

CENWS-PM-PL-ER

16 Dec 2002

Draft EA for Interim Implementation of Alternative Flood Control and Fish Operations Responses to Anheuser-Busch Comments, 15 Dec 2002

1. We always attempt to find operational solutions that will meet all needs including our legal requirements, without resulting in undue impact to any interest. The EA was prepared in response to the Corps' and the other Action Agencies' (Bonneville Power Administration and U.S. Bureau of Reclamation) responsibilities under the Endangered Species Act. The USFWS BiOp and Incidental Take Statement and the NMFS BiOp called for VARQ implementation for the 2002 fish migration season.
2. VARQ is an alternative flood control operation that helps store water considered necessary to the needs of threatened and endangered fish stocks. As such, VARQ itself is not the means by which flows are augmented for sturgeon reproduction in the spring, which appears to be the commenter's concern. We are evaluating the actual effects of river stage and duration on groundwater seepage in the Kootenai valley, but acknowledge the potential for impact.
3. We believe there is legal justification for considering VARQ on an interim basis while preparing an EIS that will inform a long-term decision. It is important to note that this EA was prepared in response to the Corps' and other the Action Agencies' (Bonneville Power Administration and U.S. Bureau of Reclamation) responsibilities under the Endangered Species Act. The USFWS BiOp and Incidental Take Statement and the NMFS BiOp called for VARQ implementation for the 2002 fish migration season, since the EIS being prepared will not be finished before 2004. The USFWS BiOp made a jeopardy determination for sturgeon in the absence of timely implementation of VARQ. The final EA has been clarified concerning the legal basis for interim implementation in Sections 2 and 8.1.
4. Again, the sole purpose of the EA is to determine whether to implement VARQ on an interim basis in order to meet the time requirements of the BiOps necessary toward unanticipated take and jeopardy to listed species. The EIS considers a wider range of related actions, and is scoped more broadly.
5. It is not VARQ itself, but rather the fish flows that it facilitates, that are being addressed as the source of concern for groundwater seepage and land drainage. Those are managed in real time during the spring. The commenter's concerns are noted and the specific information provided concerning impacts is appreciated. It will be included in the study being undertaken for the EIS that will attempt to better quantify the relationship between the fish flows and groundwater seepage.
6. VARQ makes more water available for fish flows, but the actual stages at Bonners Ferry and the effects on Kootenay Lake elevation depend on shaping of releases over time. Comment

that VARQ implementation is premature until groundwater seepage studies are completed is noted.

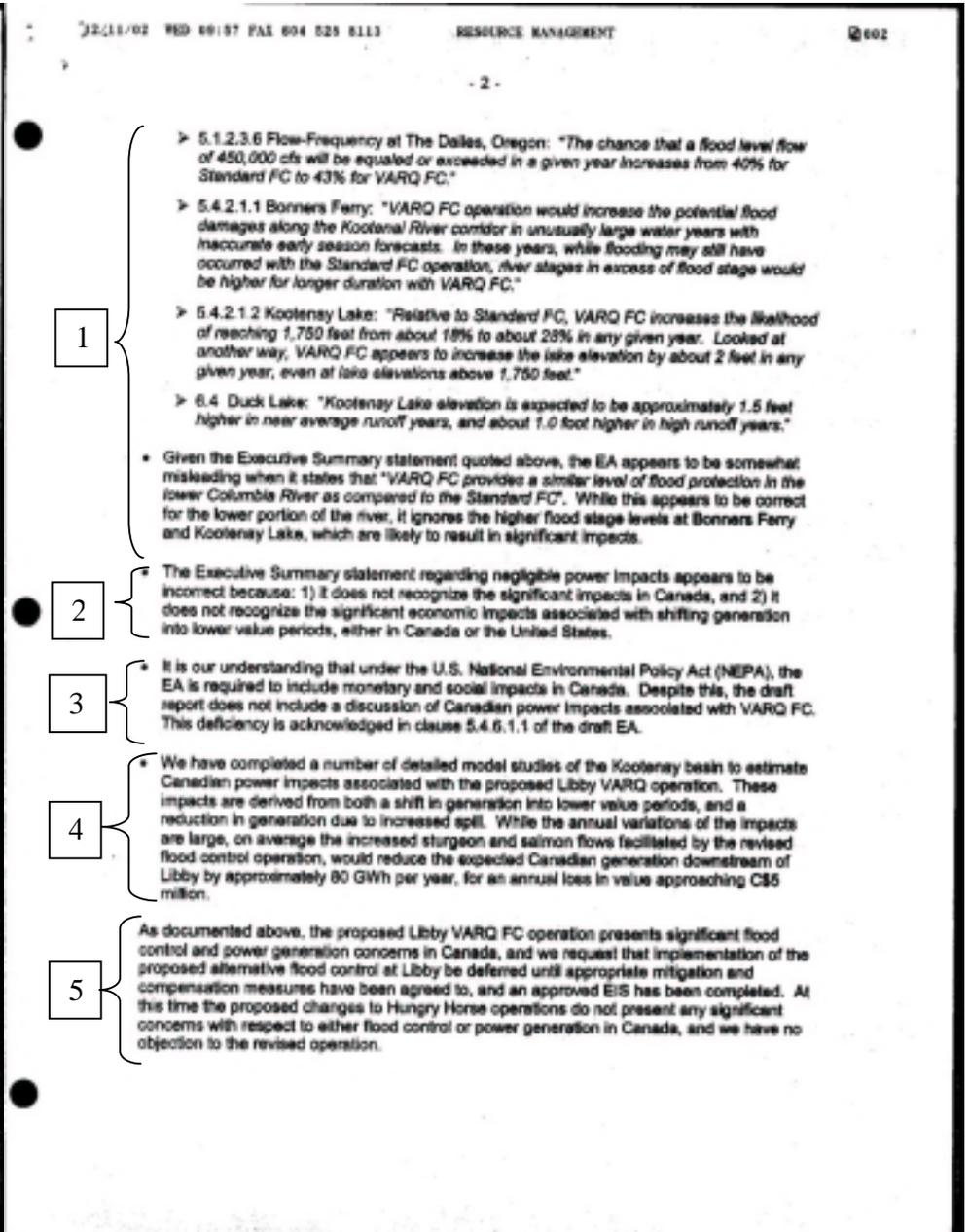
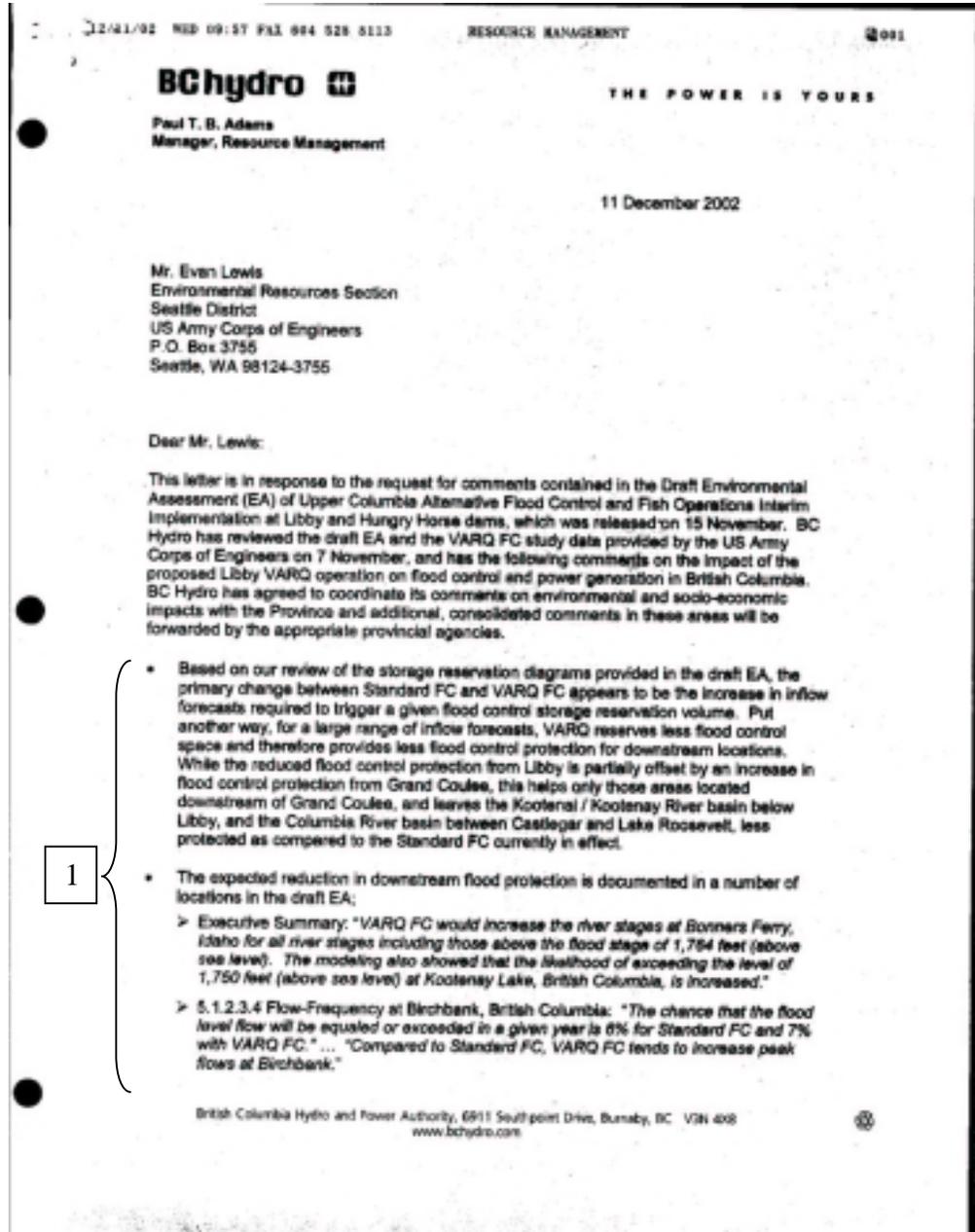
7. During the peak snowmelt runoff period, approximately from May through August, Kootenay Lake operates so as not to exceed the maximum lake level that is determined by the “lowering formula”. Flood stage at Kootenay Lake is elevation 1755 feet as described in the Columbia River Treaty Flood Control Operating Plan (FCOP) dated October 1999. The FCOP further acknowledges operation of Kootenay Lake under the 1938 IJC Order. By meeting the objectives of the lowering formula, the observed elevation of Kootenay Lake may be higher than 1755 feet provided the lake level is below the maximum elevation calculated using the lowering formula. Since the Corps began operating Libby Dam to meet the needs of the Biological Opinions there has been no exceedance of the lake level calculated using the lowering formula.

8. When the Libby project became operational in 1972, the US and Canada agreed to calculate the allowable lake level of Kootenay Lake using the regulated outflow from Libby and Duncan Dams as input to the formula, rather than an estimation of the “natural” flow into Kootenay Lake. The process of using regulated rather than natural inflow was reviewed in 1984 and again in 1998 and affirmed. Using regulated inflow to Kootenay Lake as an input to the lowering formula generally causes the upper limit of Kootenay Lake to be lower than it would have been using “natural” inflow. Since both the US and Canada use the same input data and calculation, there is no inconsistency in development of the maximum allowable lake level using the lowering formula. The modeling used by the Corps during development of the EA included a subroutine to simulate operation under the lowering formula as it is currently implemented.

9. The modeling performed for this EA indicates relative differences between alternatives but does not necessarily predict actual flow levels for specific events. We believe there is some increased flood risk to Bonners Ferry and Kootenay Lake for VARQ FC relative to Standard FC; however, the Corps believes real-time adaptive management will enable the Corps to manage this risk. We are revising the EA to reflect that modeling is only one tool used to evaluate flood control alternatives, and to more clearly show the benefit of real-time adaptive management operations on flood control (Section 5.1.2.1.1).

10. The EA was prepared in response to the Corps’ and the other Action Agencies’ (Bonneville Power Administration and U.S. Bureau of Reclamation) responsibilities under the Endangered Species Act. The USFWS BiOp and Incidental Take Statement and the NMFS BiOp called for VARQ implementation for the 2002 fish migration season. We do not feel that the relationships among water releases, river stages and Kootenay Lake levels are “poorly understood.” Additionally, habitat enhancement measures are being considered to allow reestablishment and maintenance of clean gravels in the Kootenai River, though they are not far advanced and are outside the scope of this environmental assessment.

# BC Hydro Comment Letter



6

Under the Columbia River Treaty Flood Control Operating Plan, October 1999, it is acknowledged that, "The purpose of including Libby Reservoir in the Flood Control Operating Plan is to meet the Treaty requirement to coordinate its operation for flood control protection in Canada." [emphasis added] Additionally, the Treaty requires the Entities to "cooperate on a continuing basis to coordinate the operation of [Libby] with the operation of hydroelectric plants on the Kootenay River... in accordance with the provisions of Article XI(5) and Article XII(8) of the Treaty." This coordination obligation is further acknowledged in the Libby Coordination Agreement signed in January 2002. In its capacity as the Canadian Entity under the Columbia River Treaty, BC Hydro is continuing to review the Treaty implications of the proposed reduction in flood control protection and the resulting power losses associated with the Libby VARQ operation, and will discuss these concerns with the U.S. Entity.

Please advise if additional background material or detail is required on any of the points raised above.

Yours truly,



Paul Adams, P.Eng.  
Manager, Resource Management  
Generation

- cc Rick Pendergrass, US Co-Chair CRTOC
- Dwight Burns, ACE Coordinator, CRT
- Bill Branch, US Co-Chair CTROC
- Greg Delwiche, BPA Coordinator, CRT
- Kelvin Ketchum, Canadian Chair, CRTOC
- Ken Spafford, BCH Coordinator, CRT
- Daymon Trachsel, Ministry of Water, Land and Air Protection

## ***Response to BC Hydro Comments***

CENWS-PM-PL-ER

30 Dec 2002

Draft EA for Interim Implementation of Alternative Flood Control and Fish Operations  
Responses to BC Hydro Comments, 11 Dec 2002

1. The modeling performed for this EA indicates relative differences between alternatives but does not necessarily predict actual flow levels for specific events. We believe there is some increased flood risk to Bonners Ferry and Kootenay Lake for VARQ FC relative to Standard FC; however, the Corps believes real-time adaptive management will enable the Corps to manage this risk. We are revising the EA to reflect that modeling is only one tool used to evaluate flood control alternatives, and to more clearly show the benefit of real-time adaptive management operations on flood control (Section 5.1.2.1.1).
2. The executive summary has been revised, and reflects information in the body of the EA, indicating that there is a net increase of 0.5% in average annual power generation for VARQ FC compared to Standard FC, and the seasonal shift in power generation from winter to spring. Canadian Treaty projects, Mica, Duncan and Arrow, will be on their 2003 Assured Operating Plan (AOP03) operations including changes agreed to by the U.S. and Canadian Entities as described in the 2003 Detailed Operating Plan (DOP03). The AOP and DOP are developed in accordance with the Columbia River Treaty, an agreement between the United States and Canadian governments to coordinate the operation of the Columbia River. The Canadian Treaty projects are fixed to the operation resulting from the 60-year DOP Treaty Storage Regulation.
3. We rely on the contribution of information from Canadian sources concerning potential impacts in Canada from the proposed action. The White House Council on Environmental Quality has provided guidance, dated July 1, 1997, on U.S. federal agencies' implementation of NEPA which states, "NEPA requires agencies to include analysis of reasonably foreseeable transboundary effects of proposed actions in the United States. Such effects . . . should be analyzed to the best of the agency's ability using reasonably available information." We have requested such input from Canadian sources and have included the available information. We intend to continue to coordinate and request information from the commenter and other Canadian interests concerning the evaluation of impacts in Canada in conjunction with our continued work on the EIS.
4. Input is noted. Analysis for the EA included power studies based on monthly time step models. The Corps recognizes that changed flow regimes in the Kootenai River affect the power operation in Canada. Power impacts vary based on the magnitude and timing of the water year. Discussions of power impacts in Canada may be undertaken under the Columbia River Treaty and the Columbia River Treaty Operating Committee (CRTOC).
5. Please refer to the response to comment 1 above. The EA was prepared in response to the Corps' and the other Action Agencies' (Bonneville Power Administration and U.S. Bureau of

Reclamation) responsibilities under the Endangered Species Act. The USFWS BiOp and Incidental Take Statement and the NMFS BiOp called for VARQ implementation for the 2002 fish migration season.

6. Pursuant to the Columbia River Treaty, the United States Entity has been coordinating with the Canadian Entity with respect to the status of ongoing activities during development of the Environmental Assessment. Consistent with the Treaty and Paragraph V of the Protocol Annex to the Exchange of Notes, the United States may from time to time as conditions warrant adjust the flood control operation at Libby. The Columbia River Treaty Operating Committee (CRTOC) may undertake discussions of potential impacts in Canada under the Treaty. Environmental impacts will be given consideration during the decision of this EA when making the decision concerning interim implementation of VARQ. We believe interim implementation of VARQ is consistent with existing project authorization and releases under VARQ are within the limits of the authorization. The U.S. Entity has coordinated the Libby Operating Plan (LOP) with the Canadian Entity and will continue to coordinate with the Canadian Entity in accordance with the Treaty and the Libby Coordination Agreement (LCA). The LCA was signed February 16, 2000. The LCA outlines a process to coordinate operation of Libby Dam with Canada. Appendix B of the LCA is the Libby Operating Plan (LOP). The LOP describes proposed operation at Libby; it was updated November 13, 2002 to reflect potential implementation of VARQ in 2003.

# British Columbia Ministry of Water, Land, and Air Protection Comment Letter



Reference: 71041

December 18, 2002

Evan Lewis  
 Environmental Resources Section  
 Seattle District  
 US Army Corps of Engineers  
 PO Box 3755  
 Seattle WA 98124-3755

Dear Evan Lewis:

Thank you for your letter from Mark Zimnske dated November 13, 2002, addressed to the Honourable Joyce Murray, Minister of Water, Land and Air Protection. Minister Murray has requested that I respond on her behalf. The letter requested comments on the draft Environmental Assessment (EA) for the Interim Implementation of Alternative Flood Control and Fish Operations at Libby and Hungry Horse dams in Montana, which is known as VARQ.

I am writing to express concerns regarding environmental and social issues related to the VARQ operation on behalf of the Province of British Columbia (the Province). BC Hydro is the Canadian Entity under the Columbia River Treaty. BC Hydro has reviewed the draft EA and the VARQ study data provided by the US Army Corps of Engineers on November 7, 2002, and will be providing comments on the impact of the proposed Libby VARQ operation on flood control and power generation in British Columbia.

The VARQ data provided by the Corps on November 7, 2002, was originally expected by July 2002. This data contained VARQ flows on a monthly basis, and had to be remodelled by BC Hydro engineers into daily flow data to facilitate the determination of the impacts of VARQ by provincial officials, a process that took until November 26, 2002, to complete. As a result, it was only on Friday, December 6, 2002, that our technical working group was able to conduct a preliminary review of the remodelled data. They have so far concluded that:

Ministry of Water, Land and Air Protection	Office of the Deputy Minister	Mailing: PO Box 8339 Stn Prov Govt, Victoria BC V8W 9M1	Location: 5 - 2875 Jutland Road, Victoria
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- 2 -

- 1 } There are still significant data gaps concerning VARQ. Further details on the data gaps will be provided as the technical analysis continues.
- 2 } Not enough time has been provided to fully identify the impacts on British Columbia. First Nations and other civic and corporate organisations have expressed concerns with VARQ. The data and analysis have not been available for sufficient time to allow for British Columbians affected by the proposal to review and respond to this issue.
- 3 } Based on a preliminary analysis of VARQ, British Columbia has significant concerns with the possible negative impacts of VARQ.
- 4 } While monitoring will be set up in the US to determine the effects of VARQ, no mention has been made about obtaining and co-ordinating data from Canada.
- 5 } The province is concerned about the lack of a coordinated approach to monitoring and evaluating the impacts on Canada, the limited opportunity to organize an appropriate monitoring program and the cost of such a program.
  
- 6 } It is understood that a decision will be made shortly whether or not to proceed with interim implementation of VARQ in January 2003, well ahead of the results of the Environmental Impact Statement (EIS) due in summer 2004. I understand that the December 2002 Libby runoff volume forecast for April-August 2003 runoff is 75.5 percent of normal, and this may mean that there will not be sufficient flow next year for VARQ to be of benefit to fish. This brings into question the need to implement VARQ in January 2003, in advance of full analysis and consultation.
  
- 7 } As mentioned in my letter to Colonel Graves dated April 16, 2002, the province wants to ensure that any environmental, economic and community impacts within British Columbia are well understood, and that plans will be developed to satisfactorily address any impacts prior to implementation of the VARQ proposal or interim operations. This would require completion of the EIS, provision of opportunities for stakeholder consultation on findings affecting both sides of the border and adjustments to VARQ to mitigate impacts identified by the EIS.
  
- 8 } As there has not been sufficient time to attend to the foregoing, I reiterate my earlier request that the USACE not implement alternative VARQ flood control and fish operations, even on an interim basis. VARQ should not be implemented until it has been established that there is no risk of impacts that cannot be mitigated, or for which appropriate compensation cannot or will not be provided. A copy of my letter dated April 16, 2002, in this regard is attached for your reference.

.../3

a) The province remains prepared to work with USACE to evaluate the VARQ proposal and to develop measures to mitigate or compensate for its impacts, and would be prepared to meet with the Corps to discuss.

Yours sincerely,



Derek Thompson  
Deputy Minister

Attachment

- cc: Larry Bell, Chair, Canadian CRT Entity, B.C. Hydro
- Dan Whelan, Chair, Columbia River Treaty Permanent Engineering Board
- Bruce Levy, Director, US Transboundary Division, Foreign Affairs
- The Honourable Gordon Campbell, Premier
- The Honourable George Abbott, Minister of Community,  
Aboriginal and Women's Services
- The Honourable Joyce Murray, Minister of Water, Land and Air Protection
- Bill Bennett, MLA (East Kootenay)
- Jack Ebbels, Deputy Minister, Ministry of Energy and Mines
- Jon O'Riordan, Deputy Minister, Ministry of Sustainable Resource Management
- Andrew Wilkinson, Deputy Minister, Intergovernmental Relations Secretariat
- Bill Valentine, CEO, Land and Water British Columbia Inc.

## ***Response to British Columbia Ministry of Water, Land, and Air Protection Comments***

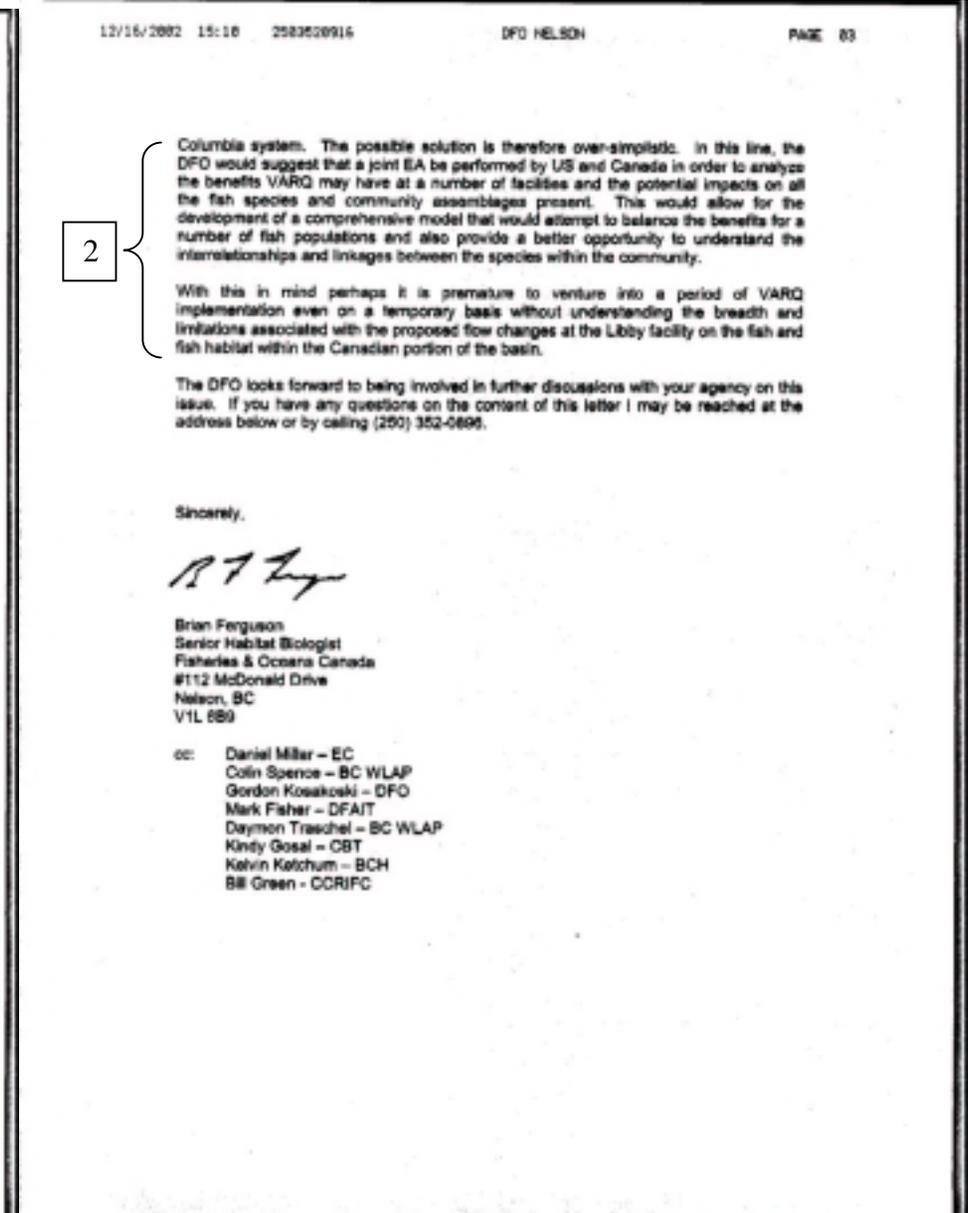
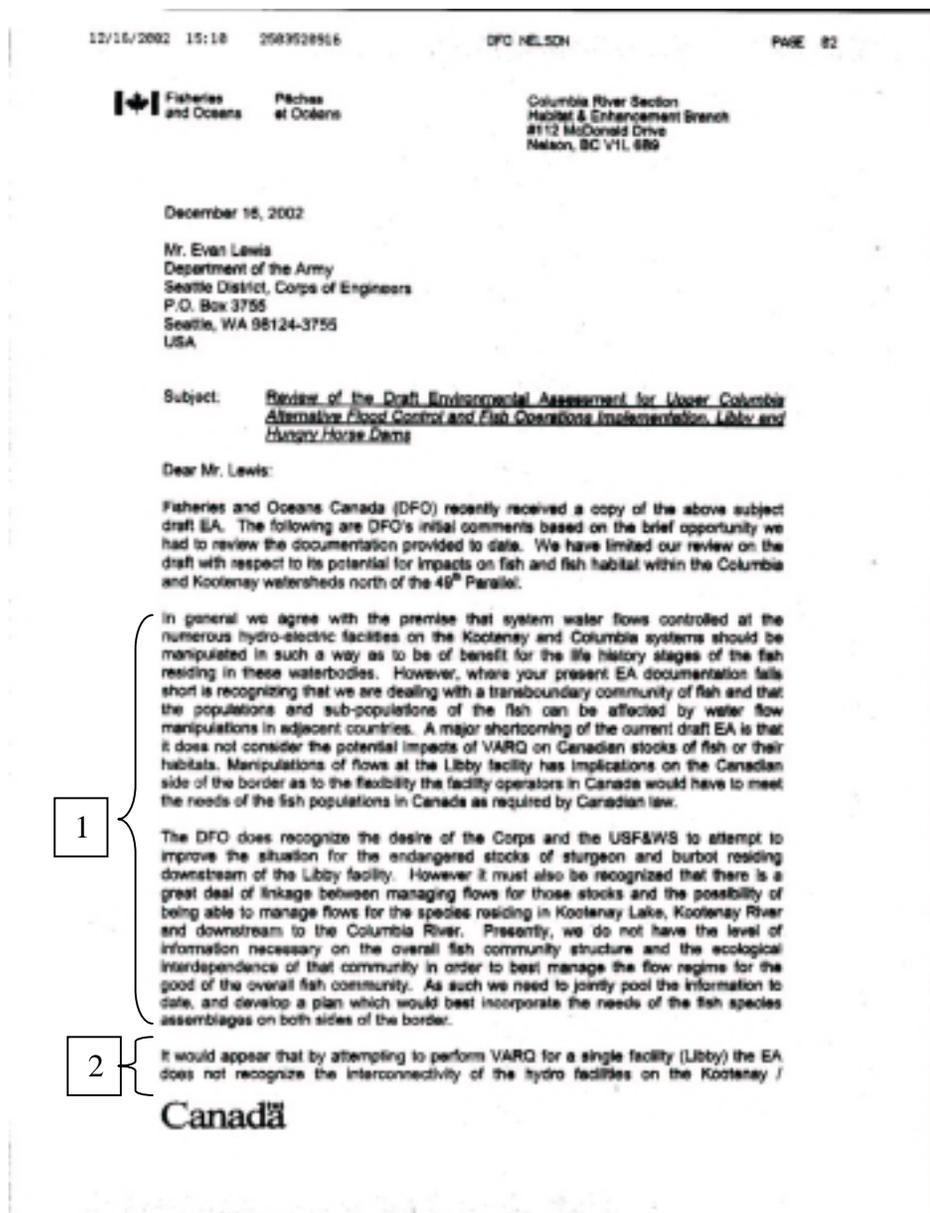
CENWS-PM-PL-ER

23 Dec 2002

Draft EA for Interim Implementation of Alternative Flood Control and Fish Operations Responses to BC Ministry of Water, Land and Air Protection Comments, 18 Dec 2002

1. Comment noted. Further studies will be developed for the EIS.
2. The studies needed for consideration of the interim implementation of VARQ for this EA took considerable time due to their complex nature. The public was provided a draft interim EA for review consistent with NEPA regulations.
3. Comment noted.
4. We intend to continue to coordinate and request information from the commenter and other Canadian interests concerning the evaluation of impacts in Canada in conjunction with our continued work on the EIS.
5. Comment noted. See response to previous comment.
6. It is too early to forecast runoff for the 2003 season, and it is possible that little if any extra water will be available for storage under the VARQ flood control regimen.
7. Comment noted. See response to comment 4. The EA was prepared in response to the Corps' and the other Action Agencies' (Bonneville Power Administration and U.S. Bureau of Reclamation) responsibilities under the Endangered Species Act. The USFWS BiOp and Incidental Take Statement and the NMFS BiOp called for VARQ implementation for the 2002 fish migration season.
8. Comment noted. Please refer to the response to comment 7.
9. Comment noted. We share the commenter's desire to work cooperatively on this issue.

# Canada Department of Fisheries and Oceans Comment Letter



## ***Response to Canada Department of Fisheries and Oceans Comments***

CENWS-PM-PL-ER

20 Dec 2002

Draft EA for Interim Implementation of Alternative Flood Control and Fish Operations  
Responses to Canada Dept. of Fisheries and Oceans Comments, 16 Dec 2002

1. We intend to continue to coordinate and request information from the commenter and other Canadian interests concerning the evaluation of impacts in Canada in conjunction with our continued work on the EIS.
2. The EA was prepared in response to the Corps' and the other Action Agencies' (Bonneville Power Administration and U.S. Bureau of Reclamation) responsibilities under the Endangered Species Act. The USFWS BiOp and Incidental Take Statement and the NMFS BiOp called for VARQ implementation for the 2002 fish migration season. We suggest the commenter present conceptual information on modifying VARQ flood control to the USFWS and NMFS for future discussion.

# Jim Carney Comment Letter

12/12/2002 20:01

509-445-1143

JIM CARNEY

PAGE 01

December 12, 2002

Mr. Evan Lewis  
DEPARTMENT OF THE ARMY  
Seattle District, Corps of Engineers  
P.O. Box 3755  
Seattle, Washington 98124-3755

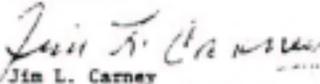
Dear Mr. Lewis;

This letter is written to address questions that have arisen after going over the draft of the Interim Implementation of Alternative Flood Control and Fish Flows. The questions and oppositions I have are as follows:

1. This Interim plan greatly reduces the flood control in the Pend Oreille Valley, especially in the Cusick area. We need the low river flow during March and April- the very months that VARQ indicates that the river flow will be increased.
2. Nowhere in the draft do I see any provision for compensation for damages incurred if the proposed process does not work as planned and, as a result, farmers and other residents are damaged.
3. I strongly believe that it is unlawful to initiate this Interim program when the environmental impact statement is not scheduled for completion until the Fall of 2003.
4. It is very significant to note that the existing flood control worked effectively for fifty (50) years. It was not until the Army Corps of Engineers began experimenting that we did flood out--dramatically. Since then, we have flooded out two times.

I am hoping that you will consider the above statements and address the issues which have been raised. So far, I have had the opinion that your agenda is already set and the public input is only a formality.

Sincerely,



Jim L. Carney  
1691 Cusick Meadow Road  
Cusick, Washington 99119  
PH/FAX #509-445-1143

cc: Rep. George Nethercutt  
Sen. Maria Cantwell  
Pend Oreille FUD  
Northwest Power Council

## ***Response to Jim Carney Comments***

CENWS-PM-PL-ER

30 Dec 2002

Draft EA for Interim Implementation of Alternative Flood Control and Fish Operations Responses to Jim Carney Comments, 12 Dec 2002

1. Water storage would still be occurring in March-April at Hungry Horse, during the time of local runoff that affects those areas. Relatively higher flows would be more likely to occur during May-June when Hungry Horse refills, and because of less drafting, more water can be released. We understand that this is later than when pumping of fields is needed as a result of higher tributary flows in the Cusick area. For information, the commenter is referred to the U.S. Bureau of Reclamation's "Voluntary Environmental Assessment and FONSI 02-02: Interim Operation of the VARQ Flood Control Plan at Hungry Horse Dam, MT" Pacific Northwest Region, Boise, Idaho at [www.pn.usbr.gov/project/salmon/pdf/VARQFONSI.pdf](http://www.pn.usbr.gov/project/salmon/pdf/VARQFONSI.pdf), page 8.
2. It is not clear what effects concerning agriculture along the Pend Oreille River in the Box Canyon Reservoir reach can be predicted from implementation of VARQ at Hungry Horse Dam, for the reason stated above.
3. The current EA on interim implementation of VARQ is intended primarily to analyze the effects of a combined interim operation of VARQ at both Libby and Hungry Horse, and analyzes effects of Hungry Horse operations alone (such as along the Pend Oreille River) only insofar as new information has become available since Reclamation's voluntary EA (see response to comment 1) was released.
4. In recent years, there were two high water years, 1996 and 1997, in which standard flood control operations were in effect. Several factors combined to create the conditions observed in those years, including wetter weather patterns.

# Center for Biological Diversity Comment Letter

December 9, 2002

Mr. Evan Lewis  
Department of the Army  
Seattle District, Corps of Engineers  
Seattle, WA 98124-3755

Dear Mr. Evans,

We are writing to provide comments on the Corps draft environmental assessment on “interim implementation of alternative flood control and fish flows at Libby and Hungry Horse Dams in Montana” (referred to herein as the EA). We support the Corps in moving forward with implementation of “Variable Q flood control” (VARQ) beginning January 1, 2003. In the following comments, we discuss the necessity of immediate implementation of VARQ, inadequacies in the EA concerning modeling the effects of VARQ, and other measures necessary to avoid jeopardy and take of the Kootenai River White Sturgeon.

## **The necessity of immediately implementing VARQ:**

The U.S. Fish and Wildlife Service’s (USFWS) biological opinion (BiOp) on “effects to listed species from operations of the Federal Columbia River Power System,” issued December 20, 2000, concluded that operation of Libby Dam is likely to jeopardize the continued existence of the Kootenai River White Sturgeon, adding that:

“this conclusion is based upon the probability that, under the proposed action, continuing high levels of mortality of fertilized eggs, and the resulting lack of significant recruitment to the only extant population of Kootenai River white sturgeon, will continue” (USFWS 2000)

To alleviate jeopardy, the USFWS established a series of reasonable and prudent alternatives related to water storage, increasing the amount of water (typically in cubic feet/second of cfs) that can be released from the dam, and understanding constraints to releasing larger flows related to human endeavor in the Kootenai Valley below the dam. On the issue of water storage, the BO mandated that:

“By January 2001, the action agencies shall develop a schedule of all disclosures, NEPA compliance and additional Canadian coordination necessary to implement VarQ flood control/storage at Libby Dam. The action agencies shall complete coordination with Canada and NEPA compliance, and implement VarQ by October 2001” (USFWS 2000)

The Corps has failed to implement VARQ and is just now issuing NEPA documentation to implement VARQ January 1, 2003, fifteen months late. On July 11, 2002, the USFWS sent the Corps a letter in which they concluded:

1

“If the Corps proceeds with VARQ in December 2002, the change in implementation schedule will not reduce the ability to meet the intent of the RPA contained in the FCRPS BiOp. However, if the Corps delays the decision beyond 2002 or decides not to proceed with VARQ, this modification of the action could reduce the ability to meet the intent of the RPA.” (Letter to Brigadier General David Fastabend, Army Corps, from William Shake, Special Assistant to the Regional Director, USFWS).

1

We disagree with this conclusion and maintain that the Corps is currently in violation of the BiOp and is thus jeopardizing the continued existence of the Kootenai River White Sturgeon in violation of the Endangered Species Act section 7(a)(2). Regardless of our disagreement with the conclusions of the USFWS letter, the Corps must now implement VARQ or according to both the BiOp and July 11, 2002 letter, the agency will jeopardize the continued existence of the Kootenai River white sturgeon in violation of the ESA.

### **Inadequacies in Army Corps modeling of the impacts of VARQ:**

The EA bases its analysis of the socioeconomic effects of implementation of VARQ on a modeling effort presented in “Hydrologic Analysis of Upper Columbia Alternative Flood Control and Fish Operations On Columbia River System including the VARQ Flood Control Plan at Libby and Hungry Horse Projects.” The EA acknowledges:

“The daily time step model results may be used to develop frequency curves or exceedence curves, yet they are not representative of what may actually occur during real-time operation. For instance, the forecasts used in Libby Dam operations are more conservative than those used in the modeling discussed below. Also, the modeling scenarios do not incorporate the project operator’s real-time adaptive management decision-making that may change outflow from Libby Dam, nor do they include other system operations such as fish or power operations that would result in different project releases.”

2

This statement indicates that the Army Corps has presented a representation of Kootenai River flows that is skewed upwards, meaning the EA presents a worst-case scenario. The EA concludes that “VARQ FC with fish flows appears to increase the risk of flooding magnitude and severity along the Kootenia River, particularly if early season runoff volume forecasts substantially underestimate the actual runoff volume.” Given that the Army Corps’ analysis tends to overestimate flows, the veracity of this conclusion is difficult to assess.

The importance of providing accurate information on flows cannot be stressed enough. By using a model that overestimates flows the Corps has very likely raised undue concern among landowners in the Kootenai Valley. For the final EA, the Corps must redo the modeling, using the same models used to operate the dam, and including real-time operations of the project operator (possibly through including rules in the model that mimic operator judgement) and other system operations, such as fish flows and power drafts.

Failure to redo the modeling is a clear violation of the National Environmental Policy Act (NEPA). NEPA’s implementing regulations require that “agencies shall insure the professional integrity, including scientific integrity, of the discussions and analyses in environmental impact

2 statements” (Sec. 1502.24, 43 FR 55990, Nov. 28, 1978). More broadly, the regulations require that information provided in NEPA documents must “be of high quality,” and that “accurate scientific analysis, expert agency comments, and public scrutiny are essential to implementing NEPA” (Sec. 1500.1(b), 43 FR 55990, Nov. 28, 1978).

**Other reasonable and prudent alternatives to avoid jeopardy:**

3 As discussed above, water storage under VARQ is just one component of the reasonable and prudent alternatives the Corps must take to avoid jeopardy. Water storage in and of itself will do little to benefit the sturgeon.<sup>3</sup> Rather, the whole purpose of water storage is to ensure that there is sufficient water to release large flows in the spring when they are needed to induce sturgeon spawning. The sturgeon last successfully reproduced in 1974 when flood stage was at 1765.5 ft. above sea level and discharge was at 40,000 cfs at Bonners Ferry, ID. The Corps has since limited operation of Libby Dam to 1764 ft at Bonners Ferry. The BiOp included a number of RPAs to reconcile this discrepancy, including measures to increase the release capacity of the dam and studies to determine what if any damage may occur from larger releases.

The BiOp calls for increasing the release capacity of the dam by 10,000 cfs to 35,000 cfs in two 5,000 cfs increments. The first step in achieving this goal is a spill test with the BiOp stating:

“The proposed spillway test in 2001 shall be conducted under sufficiently high turbine discharge levels during the sturgeon conservation operation to reliably estimate the maximum spillway flow dilution capability and compliance with the state water quality standard of 110 percent gas saturation, with up to six (6) turbines operating at full capacity, and/or a total release capacity of 35,000 cfs through a combination of spillways and a turbine. Possible changes in dissolved gas concentrations throughout the Kootenai River shall be evaluated. This test shall also include monitoring of effects of the spill on bull trout and other fish in the Kootenai River.”

4 The spill test was conducted in 2002 with the Corps concluding that only 1,000 cfs, rather than 5,000 cfs, can be passed over the spillway:

“The USFWS 2000 FCRPS BiOp calls for an increase in the routine dam discharge capacity during the spring and early summer to up to 35,000 cfs, well above current powerhouse capacity... Monitoring completed during spill events in June and July, 2002 indicate spill way flow above 1,000 cfs could increase total dissolved gas above 110% as measured at the tailrace. Therefore all alternatives in this EA assumes the maximum controlled flow for sturgeon flows is 26,000 cfs (25,000 cfs powerhouse discharge plus 1,000 cfs spillway flow)” (EA)

In the event that 5,000 cfs could not be passed over the spillway, the BiOp established an additional RPA, which stated:

“If, by December 30, 2001, it is determined that at least 5,000 cfs can not be routinely passed over the spillway within the total dissolved gas criteria of 110 %, or VarQ or some

<sup>3</sup> Reduced winter flows associated with storage under VARQ will benefit burbot.

other flood control/storage procedure has not been adopted, the action agencies shall immediately begin preparation of NEPA documentation and seek funding for installation of one turbine or spillway flow deflectors, which are to be operational by spring 2004. (Note: This will also increase the probability of storage for reservoir refill to the benefit of other listed fish including bull trout, resident fish, and recreation, it will hasten the date in which the reservoir reaches the spillway and fills, and it will reduce the risk of harm to fish in the Kootenai River through dissolved gas supersaturation in the event of forced spill.)”

4

As it has now been determined that 5,000 cfs cannot be routinely passed over the spillway, this condition has been met and the Corps should initiate NEPA to install a turbine or flow deflectors that will be operational by spring 2004. Both the scoping letter and the present draft EA indicate that the current NEPA process is only focused on implementation of VARQ and will not be fully completed until the end of 2004 (FR: October 1, 2001, V. 66, No. 190, Page 49943-49944). Thus, the Corps must either expand the purpose of the current NEPA process and speed up the timeline, or initiate a new NEPA process specifically for increasing flow capacity.

The BiOp further requires that “the action agencies shall immediately reinitiate consultation with the Service if at any point it is determined either of the above two 5,000 cfs (10,000 cfs total) increased release increments scheduled for spring of 2002, or 2004 and 2007, is not achievable.” According to this RPA, the Corps must also reinitiate consultation.

5

In addition, the BiOp requires a number of studies to determine the impacts of increased flows on socioeconomic concerns in the Kootenai Valley, including:

“By spring 2001, the Corps shall evaluate flood levels and public safety concerns along the banks of the Kootenai River below Libby Dam, and the feasibility of increasing releases above any identified channel capacity constraints through structural or non-structural means. A report shall be provided to the Service by December 1, 2001.”

“By December 1, 2001, the action agencies shall quantify the effects of groundwater seepage associated with the magnitude and duration of sturgeon flows on crops in the Kootenai Valley relative to all other types high flow/stage events which occur in the Kootenai River. The effects of direct precipitation and runoff from small tributaries within the Kootenai Valley on both surface and ground water levels shall also be accounted for in this study. This shall include delineation of specific sites affected and identification of all feasible remedies specific to those sites such as, drainage, willing seller land purchases, and enrollment in the Department of Agriculture's Wetland Reserve Program.”

6

“By December 1, 2001, the action agencies shall report specifically on the effects of load following on levee integrity throughout the Kootenai Valley over the last 26 years. This may be incorporated into the ongoing flood damage reduction study.”

6

According to information obtained from a Freedom of Information Act request to the USFWS, these studies have not been conducted and the relevant reports not submitted to USFWS. To comply with the BiOp, the Corps needs to immediately initiate these studies.

**Conclusions:**

To avoid jeopardizing the continued existence of the Kootenai River white sturgeon, the Corps must immediately implement VARQ, initiate NEPA to install additional turbines or flow deflectors in order to increase the release capacity of the dam, and initiate the above studies. Failure to take any of these actions will constitute a violation of the ESA. The Corps also needs to more accurately model the potential effects of VARQ in their final EA. If you have any questions about these matters, please do not hesitate to contact me concerning these matters at [ngreenwald@biologicaldiversity.org](mailto:ngreenwald@biologicaldiversity.org) or 406-556-1423.

Sincerely,

D. Noah Greenwald  
Conservation Biologist  
PO Box 5101  
Bozeman, MT 59717

## ***Response to Center for Biological Diversity Comments***

CENWS-PM-PL-ER

23 Dec 2002

Draft EA for Interim Implementation of Alternative Flood Control and Fish Operations Responses to Center for Biological Diversity Comments, 9 Dec 2002

1. This EA was prepared in response to the Corps' and the other Action Agencies' (Bonneville Power Administration and U.S. Bureau of Reclamation) responsibilities under the Endangered Species Act. The USFWS BiOp and Incidental Take Statement and the NMFS BiOp called for VARQ implementation for the 2002 fish migration season.
2. The modeling performed for this EA indicates relative differences between alternatives but does not necessarily predict actual flow levels for specific events. We believe there is some increased flood risk to Bonners Ferry and Kootenay Lake for VARQ FC relative to Standard FC; however, the Corps believes real-time adaptive management will enable the Corps to manage this risk. We are revising the EA to reflect that modeling is only one tool used to evaluate flood control alternatives, and to more clearly show the benefit of real-time adaptive management operations on flood control (Section 5.1.2.1.1).
3. We acknowledge that water storage under VARQ is intended to address flow needs for listed species of fish, and that flood stage at Bonners Ferry has been revised to 1,764' above mean sea level. We agree that VARQ is intended to provide water for listed stocks of fish. Other studies called for in the USFWS BiOp, including channel capacity, flow needs and flood levels, are in progress for use in the EIS on long-term implementation of VARQ and related operations.
4. The purpose of this environmental assessment is to make a decision, by the end of December 2002, on short-term implementation of VARQ. It was not possible to complete a NEPA assessment on effects or means of implementing increased flow capacity at Libby Dam in that time, and it is not in the scope of this environmental assessment. The effects of the increased flow capacity are being evaluated in the environmental impact statement currently being prepared for a long-term decision on VARQ implementation. We are conducting technical evaluations on the means to provide such increased flow capacity, but it is not yet clear if we will be prepared to address those as part of that EIS or whether that evaluation will need to be addressed separately from the EIS, possibly in a supplement.
5. Consultation with the Services on increased flow capacity is not considered in the scope of this environmental assessment. The Corps is involved in ongoing coordination and consultation activities with the USFWS on these matters.
6. The studies listed in the commenter's letter are not part of the scope of this environmental assessment, in part because of the need for timely decisionmaking specifically regarding VARQ implementation. However, the channel capacity study and the groundwater seepage study are

underway and the results of them will be used in the EIS for long-term implementation of VARQ and related operations.

# Columbia Basin Trust Comment Letter

December 16, 2002

Mr. Evan Lewis  
Environmental Resources Section  
Seattle District  
US Army Corps of Engineers  
P.O. Box 3755  
Seattle, WA 98124-3755  
USA

Dear Mr. Lewis,

This letter provides the Columbia Basin Trust's response to your request for comments on the draft Environmental Assessment (EA) for interim Implementation of Alternative Flood Control and fish flows at Libby and Hungry Horse Dams in Montana.

The Columbia Basin Trust prepared this letter in the context of our organizations Water Initiatives mandate to play a leadership role in ensuring that residents' interests are taken into account regarding water issues in the Columbia River Basin. The Columbia Basin Trust established a Water Initiatives Committee in 2001 as part of its goal to fulfill the wishes of the residents as outlined in the Columbia Basin Trust Management Plan.

1 { The CBT believes implementation of the VARQ flood control operations strategy at Libby and Hungry Horse dams (Section 9.6.1.2.3, Action 19, 2000 FCRPS Biological Opinion) has the potential for negative impacts in the British Columbia portions of the Pend O'reille and Kootenay River drainages. Given the potential for impacts in Canada on private property, key ecological areas, endangered and threatened species, power generation and industry, this proposed flood control alternative does not appear to be a "reasonable and prudent alternative" as described by the US National Marine Fisheries Service (USNMFS) and US Fish and Wildlife Service (USFWS) in their 2000 Biological Opinion.

The CBT further notes that the draft EA did not adequately address the following:

## Consultation Process

The consultation process that was carried out by the USACE and Bureau of Reclamation, which lead up to the development of the draft EA, did not involve many of the Canadian parties that may potentially be impacted by the proposed alternatives. The consultation process did not, in any way, meet what we would describe as the minimum level of public consultation that could be expected considering the potential impacts.

More specifically:

- The USACE and Bureau of Reclamation held only one public meeting in Canada (Creston, BC, January 2002), which was to introduce the scoping process for the Environmental Impact Statement. Before proceeding further, CBT requests that a series of public consultation meetings be held in British Columbia in a number of locations where potential impacts may occur due to the proposed alternatives.
- The distribution of the pertinent information on this initiative was limited, and the time frame for comment on the actual EA document was extremely short (four weeks). Given the limited distribution and the technical nature of the document, and the short time frame for response, most community groups from Canada were not able to participate in the consultation process. There are very few of the possible impacted stakeholders in Canada who have the technical capacity to review the information that was put forward. The CBT believes the USACE and Bureau of Reclamation have a responsibility to make information more readily accessible, and at a less technical level, whereby a wide variety of groups can effectively engage in this process.

2

## Information Gaps

The draft EA does not represent a comprehensive list of potential social, economic and environmental impacts that may occur in Canada as a result of implementing the proposed alternatives. Of the potential impacts that are listed, there is very little analysis done on the level of impact, or costs associated with the impacts.

The CBT has participated in a collaborative process with Canadian agencies, groups and organizations to help identify additional areas of potential impacts, and these comments will be forwarded to you by the appropriate agency. Before proceeding further, we would request that the USACE and Bureau of Reclamation provide further detail on both the range and degree of potential impacts in Canada as a result of the proposed alternatives.

3

## Compensation/Mitigation and Liability as a Result of Impacts

The EA does not address compensation and/or mitigation issues that would arise as a result of the potential impacts in Canada. Given that this process is being directed by the USNMFS and USFWS under the US Endangered Species Act (ESA), and being implemented by the USACE and Bureau of Reclamation, all of these agencies will be held accountable by the people of this region for any negative impacts in our area.

4

## Biological Benefit of Flow Augmentation for Salmon

5

It is our understanding that one of the main objectives of implementing the Alternative Flood Control Operation is to provide flow augmentation to listed stocks of salmon for downstream migration. However, there is considerable scientific debate over the relative merits of such water management practices. It is also our understanding that other hydrosystem management alternatives have been proposed to assist in the recovery of listed species in the United States that may have less impact on Canadian interests. Until such time as the relative biological merit of this proposed alternative and others can be assessed, it would not be prudent to implement the proposed course of action.

6

In summary, the CBT understands that there are a number of significant social, economic and environmental impacts in Canada that may potentially result from the implementation of the proposed Alternative Flood Control Operations. However, the concerns/issues of most of the residents and community groups in our region have not been gathered or addressed. We request that the United States Army Corps of Engineers, US National Marine Fisheries Service and US Fish and Wildlife Service not unilaterally proceed with implementing the VARQ operations at Libby or Hungry Horse on either an interim or a long-term basis until:

- There is an appropriate consultation process carried out in the Canadian portion of the affected areas that is inclusive of all groups and communities, and information is provided in a less technical nature.
- The range and degree of potential impacts in Canada are more completely assessed.
- The appropriate mitigation and/or compensation issues related to the impacts in the Canadian area are addressed.
- The relative biological merit of this proposed alternative is compared to other existing water management alternatives that may meet the same biological objectives.

7

We would also note that the USACE can expect to receive more information and comment related to the Draft EA and the proposed alternatives past the deadline for submission of comments on the draft EA. We would request that the USACE accept these comments and incorporate them into the next steps of this process.

Yours truly,

Garry Merkel  
Chair  
Columbia Basin Trust Water Initiatives Committee

## ***Response to Columbia Basin Trust Comments***

CENWS-PM-PL-ER

23 Dec 2002

Draft EA for Interim Implementation of Alternative Flood Control and Fish Operations  
Responses to Columbia Basin Trust Comments, 16 Dec 2002

1. Comment noted.
2. It is important to note that this EA is for the interim implementation of VARQ and that the EA was prepared in response to the Corps' and the other Action Agencies' (Bonneville Power Administration and U.S. Bureau of Reclamation) responsibilities under the Endangered Species Act. The USFWS BiOp and Incidental Take Statement and the NMFS BiOp called for VARQ implementation for the 2002 fish migration season. The studies needed for consideration of the interim implementation of VARQ for this EA took considerable time due to their complex nature. The public was provided a draft interim EA for review consistent with NEPA regulations. The EIS scoping process for long-term VARQ implementation is separate from this interim implementation EA process. Scoping for the EIS has already included some public process in Canada, and will continue to do so.
3. For purposes of the interim implementation EA, we believe the information is adequate. We intend to continue to coordinate and request information from the commenter and other Canadian interests concerning the evaluation of impacts in Canada in conjunction with our continued work on the EIS.
4. The Corps operates its projects under the respective authorities provided by Congress. The Corps' Libby Dam is authorized for multiple uses, including flood control, and will continue to be operated within its normal authorized operating range. Further, consistent with the Columbia River Treaty and Paragraph V of the Protocol Annex to the Exchange of Notes, the United States may from time to time, as conditions warrant, adjust the flood control operation at Libby.
5. We are aware of the debate over the merits of the flow augmentation recommended in the BiOps. However, the Corps and the other Action Agencies have made a decision to implement the actions called for in the BiOps. We recommend the commenter share any concerns about the biological merits of flow augmentation with the NMFS and USFWS.
6. Comments are noted and addressed in the preceding responses. We intend to continue to coordinate and request information from the commenter and other Canadian interests concerning the evaluation of impacts in Canada in conjunction with our continued work on the EIS.
7. Comments received past the deadline may be considered if postmarked by the deadline, or received in time to allow consideration; however, a final decision is anticipated prior to January 1, 2003.

# Columbia Power Corporation Comment Letter



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244 Courtnay Street, 3rd Floor  
Victoria, British Columbia  
Canada V8W 9R5  
Tel: (250) 953-5179  
Fax: (250) 380-0819

December 20, 2002

Mr. Evan Lewis  
Environmental Resources Section  
Seattle District  
US Army Corps of Engineers ("USACE")  
P.O. Box 3755  
Seattle, WA 98124-3755

Dear Mr. Lewis:

This letter is in response to the November 15, 2002 USACE request for comments on the Draft Environmental Assessment ("EA") of Upper Columbia Alternative Flood Control and Fish Operations ("VARQ") Interim Implementation at Libby and Hungry Horse dams, and to the VARQ flow data provided by the USACE to BC Hydro on November 7, 2002. This letter is further to Columbia Power Corporation ("CPC") letters to Colonel Graves of April 30, 2002 and to you of October 23, 2002 (attached).

As explained in more detail in CPC's letter to Colonel Graves of April 30, 2002, the interests and concerns of CPC and its joint venture partner CBT Energy Inc. ("CBTE") are primarily related to our power projects and development rights on the Kootenay, Columbia and Pend d'Oreille rivers. CPC/CBTE hold a number of water licences for the diversion and use of water on the Kootenay and Columbia rivers, and a water licence for storage on Kootenay Lake.

CPC's comments supplement the ongoing comments of BC Hydro, the Canadian Entity under the Columbia River Treaty (the "Treaty"), regarding Treaty flood control and power issues. In addition, our comments complement the interests and concerns of the Columbia Basin Trust ("CBT") regarding the ongoing economic, environmental and social impacts of the Treaty on the Columbia Basin Region (the "Region") in British Columbia. CBT is writing separately to the USACE in this regard.

- 1 { Our general concerns and questions include: whether the proposed VARQ changes are consistent with the Treaty; who is responsible for evaluating impacts in Canada resulting from changes in the U.S.; whether the comments and concerns of Canadian interested parties are incorporated in the current EA and the future Environmental Impact Statement ("EIS") prepared under the U.S. National Environmental Policy Act ("NEPA"); whether impacts and concerns in Canada are given the same weight as impacts and concerns in the U.S. in scoping, preparing and assessing the draft EA and the draft and final EIS; and, whether appropriate mitigation and compensation measures are agreed to prior to implementation of VARQ.
- 2 { }
- 3 { }
- 4 { }
- 5 { }

- 6 { We are concerned that insufficient time has been provided to review the draft EA and the VARQ flow data provided by the USACE to BC Hydro. This flow data was originally expected by July 2002. After being provided on November 7th, the VARQ flow data had to be converted by BC Hydro from monthly to daily average flows. This took until November 26, 2002 to complete. Thus, we have had about four weeks to review and evaluate the proposed VARQ flow data and the draft EA.
- 7 { Our review to date indicates that impacts and concerns in Canada have not been adequately considered and have not been given the same weight as impacts and concerns in the U.S. This is despite our understanding that, under NEPA, the EA is required to include monetary and social impacts in Canada.  
  
More specifically, we are concerned that the draft EA does not adequately take into account impacts of Libby VARQ on the lower Canadian reaches of the Kootenay and Columbia rivers and on Kootenay Lake.
- 8 { We do not agree with the statement in the EA Executive Summary that:  
  
*VARQ FC provides a similar level of flood protection to the lower Columbia River as compared to the Standard FC.*  
  
This statement appears to ignore significant impacts from Libby VARQ due to increases in the magnitude and severity of flooding on the lower reaches of the Kootenay and Columbia rivers in Canada downstream of the Libby Dam<sup>3</sup> and increases in Kootenay Lake elevations<sup>2</sup>. Insufficient analysis has been undertaken regarding the impact of flow frequency changes, increased peak flows, increased Kootenay Lake elevations, the loss of flood control protection, and the resulting negative impacts on the magnitude and severity of floods, erosion and water quality.
- 9 { Similarly, insufficient analysis has been undertaken regarding the impact of increased spills with VARQ, including resulting negative impacts in Canada downstream of Libby Dam due to increased dissolved gas levels,<sup>4</sup> particularly negative impacts on fish<sup>4</sup>.
- 10 { Under the terms of the Treaty, Treaty storage reservoirs are to be operated to provide downstream flood control and incremental power and energy benefits to both parties. We believe that: Treaty storage reservoirs must operate in accordance with the terms of the Treaty; flood control operations for Canadian Treaty Dams and the Libby Dam must be consistent with the October 1999 Columbia River Treaty: Flood Control Operating Plan and the January 2000 Libby Coordination Agreement; and, appropriate mitigation and compensation measures must be agreed to before alternative operating regimes are implemented.

<sup>1</sup> See draft EA references 5.1.2.1.2.2, 5.1.2.1.2.3, 5.1.2.1.3.3, 5.1.2.1.3.4, 5.2.2.1, 5.2.4.3.1 and 5.4.2.1.1.  
<sup>2</sup> See draft EA references 5.1.2.1.2.4, 5.1.2.1.3.4 and 5.4.2.1.2.  
<sup>3</sup> See draft EA references 5.1.2.1.3.1 and 5.1.2.1.3.5.  
<sup>4</sup> See draft EA reference 5.2.2.1.

11

As noted in CPC's April 30, 2002 letter to Colonel Graves, potential effects on CPC/CBTE power projects and development rights include changes to: total generation, generation profiles, operating flexibility, optimum project scale and project economics.

We do not agree with the statement in the EA Executive Summary that:

*VARQ FC redistributes average monthly power generation ... with a negligible effect on average annual power generation.*

11

This statement appears to ignore both the expected loss of power production in Canada downstream of the Libby Dam due to increased spill, and the significant financial and economic loss from shifting power production from higher to lower valued periods. Indeed, the draft EA states that: "*the analysis of hydropower generation does not include effects to projects in Canada*" [from VARQ].

As noted in BC Hydro's letter to the USACE of December 11, 2002, on average, the implementation of Libby VARQ would reduce the expected Canadian generation downstream of Libby by about 80 GWh per year, or by about C\$5 million per year.

The October 1, 2001 U.S. Federal Register Notice of Intent ("NOI") to prepare an EIS of VARQ stated that:

*If remaining studies of system flood control prove VARQ feasible, and other impacts are either not significant or can be mitigated, then it would be implemented the next winter following completion of NEPA documentation. ... The draft EIS is scheduled for release in Fall, 2003.*

12

Despite this, the draft EA notes that interim implementation of VARQ is being considered for January 2003; that is, prior to completion of the associated EIS, without appropriate review of the flood control, power and other economic, environmental and social impacts in Canada, and prior to appropriate mitigation and compensation measures being agreed to.

Accordingly, we request that implementation of Libby VARQ be deferred until appropriate mitigation and compensation measures have been agreed to, and until an EIS has been approved under NEPA.

Sincerely,



Bruce Duncan  
Vice President  
Columbia Power Corporation

<sup>2</sup> See draft EA reference 5.4.4.1.1.

cc: Lorene Sivertson, President, Columbia Power Corporation  
Josh Srotenk, Chair, Columbia Basin Trust  
Ken Epp, President CBT Energy Inc.  
Paul Adams, Manager Resource Management Generation, BC Hydro  
Kelvin Ketchum, Canadian Chair, Columbia River Treaty Operating Committee  
Ken Spafford, BC Hydro Coordinator, Columbia River Treaty  
Daymon Truchsel, Water, Land and Air Protection  
Shelley Murphy, Senior Advisor, Ministry of Energy and Mines  
Les MacLaren, Director, Crown Agencies Secretariat  
Wally Koschik, Power Supply, Aquila Networks Canada (BC) Ltd.  
Margaret Troms, Environmental Coordinator, Aquila Networks Canada (BC) Ltd.

Attachments



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 644 Courtenay Street, 3rd Floor  
 Victoria, British Columbia  
 Canada V8W 1R6  
 Tel: (250) 843-0179  
 Fax: (250) 386-8819

*China*

**RAISED**

April 30, 2002

Colonel Ralph H. Graves  
 District Engineer  
 United States ("U.S.") Army Corp of Engineers ("USACE")  
 Seattle District  
 PO Box 3735  
 Seattle  
 Washington 98124-2255

Dear Colonel Graves:

**Re: Upper Columbia Basin Alternative Flood Control and Fish Operations Variable Discharge ("VARQ"); the October 1, 2001 U.S. Federal Register Notice of Intent ("NOI") to Prepare a U.S. Federal Environmental Impact Statement ("EIS"); and the Draft EIS ("DEIS") and EIS Process**

I am writing in response to the January 2, 2002 USACE letter to interested parties, the January 24, 2002 meeting in Creston, BC, between representatives of the USACE and the U.S. Bureau of Reclamation ("USBR") and Canadian stakeholders, and the USACE follow-up letter to interested parties of March 1, 2002. The purpose of this letter is to register the interests and the concerns of Columbia Power Corporation ("CPC") and our joint venture partner CBT Energy Inc. ("CBTE") regarding the proposal to implement alternative VARQ flood control and fish operations procedures for the Libby Dam, in Montana, and related changes in drawdowns at Grand Coulee Dam, in Washington; the associated NOI to prepare an EIS pursuant to the U.S. National Environmental Policy Act ("NEPA"); and the DEIS and EIS process.

As explained in more detail below, the interests and concerns of CPC/CBTE are primarily related to our power projects and development rights and related commercial and environmental issues. Accordingly, our comments supplement the ongoing comments of BC Hydro, the Canadian Entity under the Columbia River Treaty (the "Treaty"), regarding Treaty issues. Our comments also complement the interests and concerns of the Columbia Basin Trust ("CBT") regarding the ongoing economic, environmental and social impacts of the Treaty and related issues affecting the people of the Columbia Basin Region (the "Region") in BC. CBT will be writing separately to the USACE in this regard.

This letter has three sections: (1) background regarding CPC/CBTE and CBT interests; (2) a description of CPC/CBTE power projects and related development rights; and, (3) a summary of CPC/CBTE concerns and questions to date regarding the VARQ proposal as we understand it, the NOI to prepare an EIS, and the DEIS and EIS process, timetable and information base.

**1. Background Regarding CPC/CBTE and CBT Interests**

The construction of the Treaty storage dams brought current and future financial benefits to the Province, but also significant economic, environmental and social costs to the residents of the Region, both at the time and on an ongoing basis. Twenty three hundred residents were displaced, communities were lost, lands expropriated and properties flooded. There continue to be ongoing negative effects from reservoir and facilities operations.

In 1995, following negotiations with representatives of the Region, the Province of British Columbia (the "Province"), through legislation and contractual arrangements, created a unique model to:

- compensate the Region for the costs borne because of the Treaty storage dams and related ongoing Treaty operations; and,
- give the people of the Region a greater voice in decisions affecting the Region and their future.

Legislation was passed creating the CBT, and the Province agreed to allocate a share of the value of the future Canadian Entitlement under the Treaty to the Region (the "Regional Allocation").

CBT's purpose is to manage and invest the Regional Allocation for the ongoing economic, environmental and social benefit of the Region. CBT is also directed to prepare and keep current a long term Columbia Basin Management Plan (the "CBMP"), with input from the people of the Region. The CBMP must be considered in any water licensing decisions made under the provincial Water Act.

CPC is a Crown corporation, wholly owned and controlled by the Province. CPC undertakes power project investments in the Region, as agent of the Province, on a joint venture basis with CBTE, a wholly owned subsidiary of CBT.

Under a 1995 Financial Agreement, as part of the Regional Allocation, CBT and CPC receive \$250 million each over ten years to provide equity for qualifying power project developments in the Region.

**2. CPC/CBTE Power Projects and Related Assets and Rights**

In 1996, CPC/CBTE purchased the 125 MW Brilliant Dam and Generating Station ("BRD") on the Kootenay River 2 km northeast of Castlegar, BC. As part of the purchase CPC/CBTE acquired related lands, foreshore rights, and provincial water licences for diversion on Kootenay River and storage on Kootenay Lake. CPC/CBTE also became signatories to the Carol Plant Agreement, along with Teck Cominco Metals Ltd. ("TCM"), West Kootenay Power - now UtilCorp Networks Canada ("UNC") - and BC Hydro. UNC manages and operates BRD for CPC/CBTE, and BRD power is sold to UNC under a long term power purchase agreement.

In addition, CPC/CBTE have four core projects:

- **Keenleyside – Arrow Lakes – Generating Station ("ALJF").** This project involves developing a two-unit, 185 MW powerplant on the Columbia River adjacent to BC Hydro's Keenleyside Treaty storage dam (development rights having been acquired from BC Hydro in 1998). The first unit was commissioned in February 2002. The second unit is scheduled to be commissioned this spring.
- **BRD Upgrade.** This project involves upgrading the four BRD turbines for an additional 20 MW of capacity. The BRD upgrade program commenced in 2000 and is scheduled to be completed by December 2002.
- **Brilliant Expansion Generating Station ("BRX").** This project involves developing an 80 to 120 MW powerplant on the Kootenay River adjacent to BRD. The Province issued the key environmental permit, a Project Approval Certificate, for BRX on October 16, 2001, as well as a Conditional Water Licence on April 11, 2002. A competitive design, evaluate and build process is underway and construction is expected to commence as early as December 2002, for start-up in 2005.
- **Waneta Expansion Generating Station ("WAX").** This project involves developing a powerplant by 2008 of up to 380 MW on the Pend d'Oreille River adjacent to TCM's Waneta Dam (development rights having been purchased from TCM in 1994). The final project scale, design and capital cost are to be determined through a competitive design, evaluate and build bidding process.

In fulfilling this mandate, CPC/CBTE monitor and participate in water use planning and related assessments to ensure that our rights are recognized, impacts on our projects are minimal and we are compensated when the value of our assets or rights is negatively affected.

An important provincial public policy objective for CPC/CBTE is to make maximum beneficial use of existing storage capabilities and regulated streamflows in a manner consistent with the Treaty and the Province's environmental stewardship objectives. ALJ, BRD upgrades and BRX rely on Treaty regulation, and WAX relies on non-Treaty regulated flows.

### 3. CPC/CBTE Concerns and Questions

As noted, CPC/CBTE concerns and questions regarding the proposed VARQ flood control and fish operations procedures, and the associated DEIS and EIS process, relate primarily to our joint venture power projects and development rights, and associated commercial and environmental issues.

Our general concerns and questions include: whether the proposed VARQ changes are consistent with the Treaty; who is responsible for evaluating impacts in Canada resulting from changes in the U.S.; how will the comments and concerns of Canadian interested parties be incorporated in the EIS process; and, whether impacts and concerns in Canada

will be given the same weight as impacts and concerns in the U.S. In scoping, preparing and assessing the associated DEIS and EIS.

The U.S. Federal Register NOI lists the following issues that have been identified to date to be analyzed in depth in the EIS:

- (1) *flood control impacts on a local and a system-wide basis;*
- (2) *fisheries and other aquatic ecosystem impacts and benefits in affected reservoirs and downstream in the Kootenai and Flathead systems and on the mainstem Columbia;*
- (3) *effects of the potential increase in frequency of spill and impacts from dissolved gas on aquatic organisms;*
- (4) *groundwater seepage in lands from prolonged high spring flows along the Kootenai River in Idaho;*
- (5) *levee integrity concerns from prolonged high spring flow along the Kootenai River in Idaho and British Columbia;*
- (6) *potential for increased suspension of sediments due to increased drawdown of Lake Roosevelt (Grand Coulee);*
- (7) *potential aerial transport of contaminants (mainly heavy metals) from exposed Lake Roosevelt sediments;*
- (8) *exposure looting and vandalism of prehistoric artifacts and human remains along Lake Roosevelt;*
- (9) *recreational impacts on affected reservoirs;*
- (10) *Columbia system power generation impacts; and,*
- (11) *power generation impacts at Canadian projects downstream of Libby Dam, a treaty issue.*

In addition to the identified impacts on the Kootenay and Columbia rivers and Roosevelt Lake, we believe that impacts on Kootenay Lake must be adequately assessed. Examples of specific concerns for Kootenay Lake are set out in UNC's letter to the USACE of February 11, 2002. These include "increased Kootenay Lake levels may impact on LHD Corp's management of the LIC Order [Kootenay Lake Order 1958, November 11, 1958]". As noted, CPC/CBTE hold a water licence for storage on Kootenay Lake.

We are concerned that current USACE studies do not adequately model flows along the lower Canadian reaches of the Kootenay or Columbia rivers. It is unclear at this time whether the frequency of flooding along this reach of river will increase or not due to VARQ. We are also concerned that the USACE has indicated that there would be no funding available under the EIS to evaluate impacts on the Canadian side of the border.

Since CPC/CBTE projects rely on Treaty regulation, we believe that Treaty storage reservoirs must operate in accordance with the terms of the Treaty; flood control operations for Canadian Treaty dams and the Libby Dam must be consistent with the "Columbia River Treaty: Flood Control Operating Plan" prepared in 1999; and, appropriate mitigation and compensation measures must be agreed to before alternative operating regimes are implemented. Under the terms of the Treaty, Treaty storage reservoirs are to be operated to provide downstream flood control and incremental power and energy benefits to both parties.

In this regard, we are concerned that the impact of VARQ on Kootenay and Columbia River power operations in Canada has yet to be determined. We understand that the Canadian Entity reviewed a preliminary USACE (Seattle Office) VARQ report in 1997/98; the review identified flaws in the analyses, as well as potential power and non-power impacts in Canada; and, the Canadian Entity subsequently asked the U.S. Entity (USACE, Portland Office) to re-run the studies and to assess potential impacts in Canada from the VARQ operations. We understand that the preliminary results indicate reductions in generation at BRD with VARQ. We further understand that revised study results may not be available until June/July 2002. Once received, the Canadian Entity has indicated it will have to carry out a further analysis of the study results to determine potential impacts on generation and flood control at key BC locations, including at BRD and BRX and downstream of ALH. We will also need to carry out our own analysis to determine potential effects on CPC/CBTE projects and development rights, as well as related non-power issues. Potential effects include changes to: total generation, generation profiles, operating flexibility, optimum project scale and overall project economics, as well as related non-power issues such as total gas pressure levels and water quality for fish.

Finally, we are very concerned about the timetable for the EIS process and the proposed implementation of alternative VARQ flood control and fish operation procedures.

The U.S. Federal Register NOI states that:

*If remaining studies of system flood control prove VARQ feasible, and other impacts are either not significant or can be mitigated, then it would be implemented the next winter following completion of NEPA documentation. ... The draft EIS is scheduled for release in Fall, 2003.*

Materials attached to the USACE letter to interested parties of January 2, 2002 stated in response to the Frequently Asked Question: When will the EIS process be completed?

*The agencies expect to complete a Draft Environmental Impact Statement (DEIS) by the fall of 2003. Public meetings would be held at that time as part of a review process of the DEIS. A Final EIS would be completed by the spring or summer of 2004. Implementation of a preferred alternative would occur by the winter of 2005.*

However, the USACE has now advised the Canadian Entity, in a letter dated February 14, 2002, and interested parties, in a letter of March 1, 2002, that interim implementation of

an alternative VARQ flood control and fish operation is being considered for January 2003, prior to completion of the associated EIS and two years earlier than previously stated. We are particularly concerned that consideration is being given to implementing alternative VARQ operation procedures at Libby Dam, without appropriate review of the power, flood control and related economic, environmental and social impacts in Canada, prior to completion of the associated EIS and prior to appropriate mitigation and compensation measures being in place. We are also concerned that this consideration was not disclosed in the U.S. Federal Register NOI and in other supporting materials provided with the USACE letter to interested parties of January 2, 2002, so that concerns related to the potential early implementation of VARQ flood control and fish operation procedures could have been properly canvassed at the January 24, 2002 meeting in Croston, BC, and in follow-up correspondence from Canadian interested parties.

#### 4. Concluding Comments

Thank you for seeking CPC/CBTE's input regarding Canadian interests and concerns related to the alternative VARQ flood control and fish operation. We appreciate being consulted and having the opportunity to meet with officials from the USACE and the USBR as part of the DEIS and EIS process. CPC/CBTE trust that the USACE and the USBR will include information on Canadian concerns and data on potential impacts in Canada in the DEIS and EIS, and will take these concerns and potential impacts into account in decisions regarding whether or not to proceed with VARQ.

We look forward to the creation of a streamlined, formal process for providing Canadian interested parties with the data and analyses required to adequately assess potential impacts from the proposed VARQ changes, available alternatives and mitigation and compensation measures.

We will provide additional comments as additional information is provided to clarify potential power and non-power impacts of VARQ on CPC/CBTE. In this regard, we look forward to reviewing the USACE revised flow study report regarding the impact of VARQ on Kootenay Lake, Kootenay River and Columbia River operations in Canada.

We would expect that, if there were potential power and non-power impacts that are not resolved through mitigation or compensation, including impacts on CPC/CBTE power projects and development rights, then a decision would be made not to implement VARQ.

Sincerely,

  
Lorne E. Siverton  
President, Columbia Power Corporation

cc: Larry I. Bell, Chair, Canadian Entity, BC Hydro  
Josh Smierck, Chair, Columbia Basin Trust  
Stephen J. Wright, Chair, U.S. Entity – Bonneville Power  
BG David A. Fastabend, Member, U.S. Entity – U.S. Army Corp  
Jack Ehbels, Deputy Minister, Energy and Mines  
Jon O'Riordan, Deputy Minister, Sustainable Resource Management  
Derek Thompson, Deputy Minister, Water, Land and Air Protection  
Bill Valentine, CEO, Land and Water BC Inc.  
Dan Whelan, CRT Permanent Engineering Board, Natural Resources Canada  
Andrew Wilkinson, Deputy Minister, Intergovernmental Relations Secretariat  
James S. Mattison, Director, Lands and Water BC Inc.  
Les MacLaren, Director, Crown Agencies Secretariat  
Chris Oakley, Director, Power Supply, UtiliCorp Networks Canada (BC) Ltd.

**October 23, 2002 letter contained citations of  
technical references related to Upper Columbia  
River Alternative Flood Control and Fish  
Operations**

## ***Response to Columbia Power Corporation Comments***

CENWS-PM-PL-ER

30 Dec 2002

Draft EA for Interim Implementation of Alternative Flood Control and Fish Operations  
Responses to Columbia Power Comments, 20 Dec 2002

1. Pursuant to the Columbia River Treaty, the United States Entity has been coordinating with the Canadian Entity with respect to the status of ongoing activities during development of the Environmental Assessment. Consistent with the Treaty and Paragraph V of the Protocol Annex to the Exchange of Notes, the United States may from time to time as conditions warrant adjust the flood control operation at Libby. The Columbia River Treaty Operating Committee (CRTOC) may undertake discussions of potential impacts in Canada under the Treaty. Environmental impacts will be given consideration during the decision of this EA when making the decision concerning interim implementation of VARQ. We believe interim implementation of VARQ is consistent with existing project authorization and releases under VARQ are within the limits of the authorization.
2. The CRTOC is expected to take the lead in discussion of power impacts that may accrue in Canada. We intend to continue to coordinate and request information from the commenter and other Canadian interests concerning the evaluation of impacts in Canada in conjunction with our continued work on the EIS.
3. See response to comments 1 and 2.
4. The White House Council on Environmental Quality has provided guidance, dated July 1, 1997, on U.S. federal agencies' implementation of NEPA which states, "NEPA requires agencies to include analysis of reasonably foreseeable transboundary effects of proposed actions in the United States. Such effects . . . should be analyzed to the best of the agency's ability using reasonably available information."
5. See response to comment 1.
6. The studies needed for consideration of interim implementation of VARQ for this EA took considerable time due to their complex nature. The public was provided a draft EA for interim implementation of VARQ for review, consistent with NEPA regulations. We believe the review time was adequate due to the limited nature of the action – interim implementation of VARQ. We do not have the flexibility of providing additional time due to limited time in which to make a decision.
7. See responses to comments 2 and 4. We believe our EA adequately addresses Canadian impacts. Note that the EIS for long-term implementation will also address these concerns.

8. The modeling performed for this EA indicates relative differences between alternatives but does not necessarily predict actual flow levels for specific events. We believe there is some increased flood risk to Bonners Ferry and Kootenay Lake for VARQ FC relative to Standard FC; however, the Corps believes real-time adaptive management will enable the Corps to manage this risk. We are revising the EA to reflect that modeling is only one tool used to evaluate flood control alternatives, and to more clearly show the benefit of real-time adaptive management operations on flood control (Section 5.1.2.1.1).

9. See response to comment 8. The same information applies to the chance of involuntary spill. We believe the EA addresses impacts to fish from spill.

10. See response to comment 1. The proposed operation is consistent with the 1999 Flood Control Operating Plan. The U.S. Entity has coordinated the Libby Operating Plan (LOP) with the Canadian Entity and will continue to coordinate with the Canadian Entity in accordance with the Treaty and the Libby Coordination Agreement (LCA). The LCA was signed February 16, 2000. The LCA outlines a process to coordinate operation of Libby Dam with Canada. Appendix B of the LCA is the Libby Operating Plan (LOP). The LOP describes proposed operation at Libby; it was updated November 13, 2002 to reflect potential implementation of VARQ in 2003.

11. See responses to comments 1 and 10.

12. See responses to comments 1 and 10. The Corps and Reclamation are jointly preparing an EIS to evaluate long-term flood control and other long-term operational strategies at Libby and Hungry Horse Dams to provide recommended flows and habitat conditions for threatened and endangered anadromous and resident fish. The Corps issued an EA on September 18, 2001 announcing a decision to do an Environmental Impact Statement (EIS), in conjunction with the Bureau of Reclamation, on the effects associated with long-term implementation of VARQ FC as recommended in the USFWS and NMFS BiOp RPA's referenced above. The September 2001 EA included a list of environmental impacts that required further analysis and that the Corps viewed as important to the decision making process for long-term implementation of VARQ FC. The Notice of Intent (NOI) to prepare the EIS was published in the Federal Register on October 1, 2000.

Formal scoping of issues and alternatives for the EIS analysis has been completed. The EIS will analyze the coordinated and cumulative impacts of proposed long-term flood control operational changes at both dams as well as other operational actions at Libby and Hungry Horse Dams called for in the 2000 FCRPS BiOps. Completion of the EIS is scheduled for 2004 with possible long-term implementation of a VARQ FC operation and fish flows, or other preferred alternative, starting in 2005.

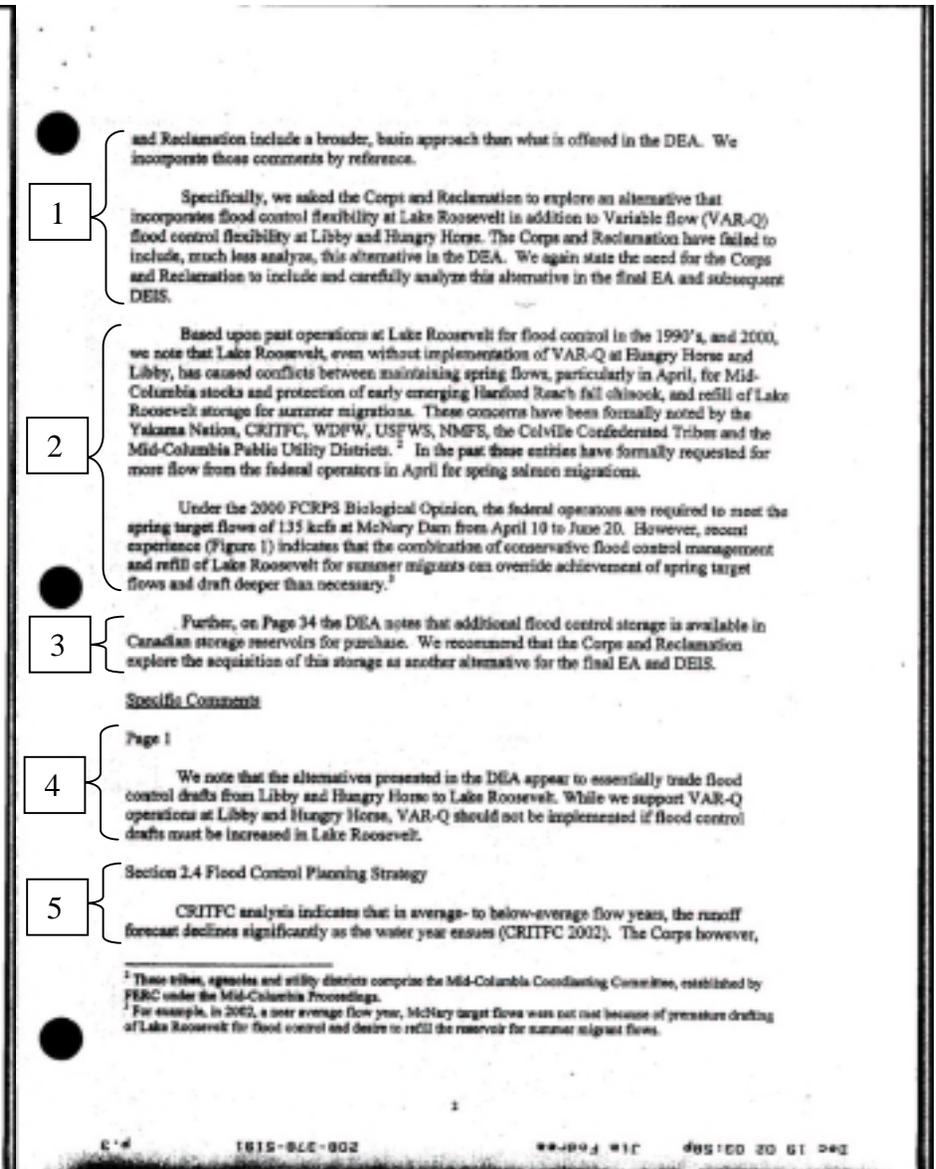
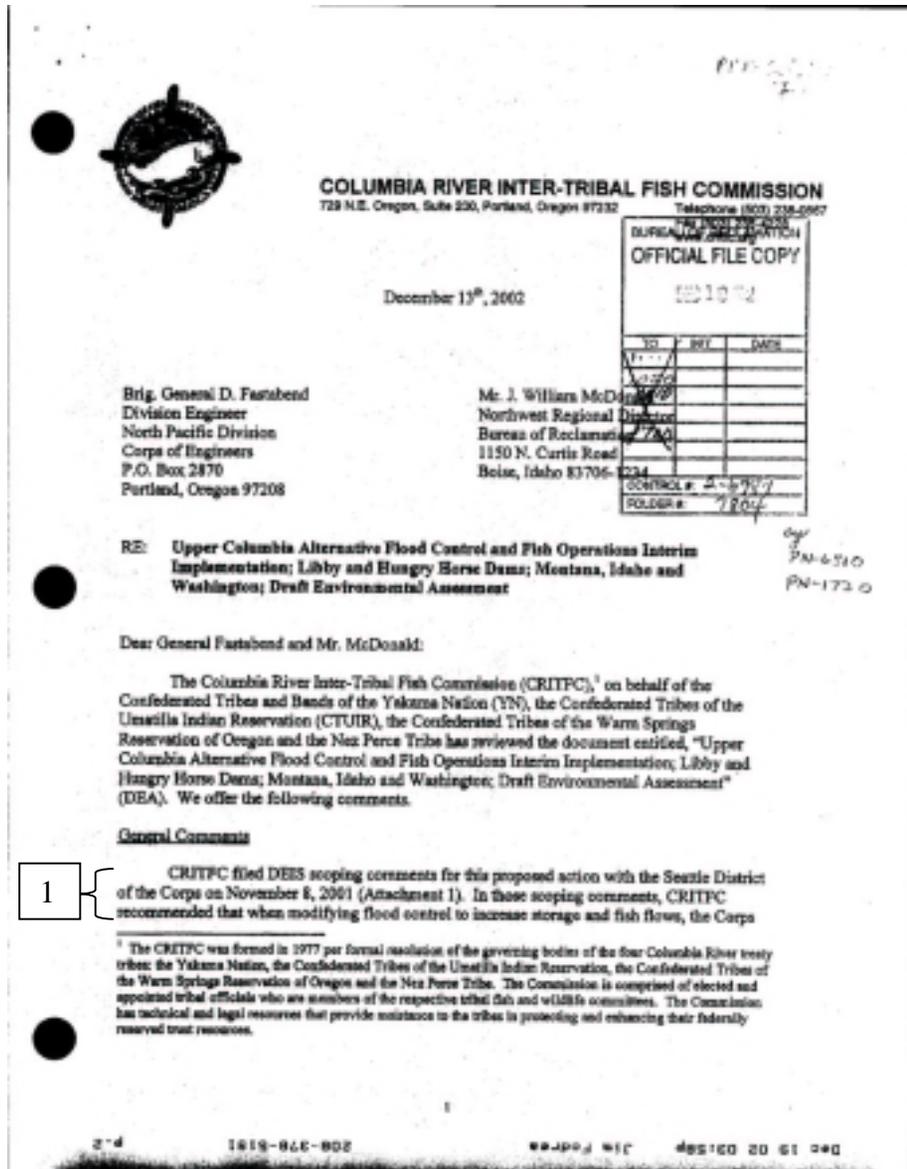
Since the issuance of the September 2001 EA, the Corps, with the assistance of others, has obtained information and conducted studies and modeling analyses that provide sufficient information on environmental effects associated with an interim VARQ FC operation, including those to listed resident and anadromous fish species, to make a decision by the end of 2002,

while continuing further analyses for a long-term decision in the EIS scheduled for completion sometime late 2004.

In this EA, the Corps and Reclamation evaluate the potential impacts of interim implementation of VARQ FC and fish flow implementation at Hungry Horse and Libby Dams. The EA provides an evaluation of potential environmental impacts that will support decisions by late 2002 on whether to proceed with short-term interim implementation of VARQ FC at both projects in January 2003 and extending until the completion of the EIS and a decision on possible long-term implementation of a VARQ FC operation and fish flows (currently scheduled for late 2004).

The USFWS and NMFS have indicated that failing to implement VARQ FC at both Hungry Horse and Libby Dams prior to 2005 may result in an unanticipated take of threatened and endangered species.

# Columbia River Inter-Tribal Fish Commission Comment Letter



assumes that even a below-average water year will maintain the volume of early runoff projections, thus, the Corps evacuates storage to meet a higher level of flood control risk than is necessary. For example, the Corps is currently draining storage out of Libby with an aggressive preemptive draft assuming a 100% of normal forecast when the Corps own forecasting tools show that the current forecast is only 82% of normal (TMT, 2002).

In the CRITFC analysis (CRITFC 2002), storage volumes would be increased by modifications to flood control rule curves, some of which were specified in the 1995-1998 Biological Opinion, but never realized. For example, about 500 KaF of flood control storage could be obtained from shifting flood control space from Arrow Reservoir to Mica Reservoir.

In CRITFC's analysis (CRITFC 2002), modified VAR-Q would be implemented.<sup>4</sup> The flood control rule curves for Lake Roosevelt would be modified, as per CRITFC specifications, but VAR-Q at Hungry Horse and Libby would be used.

For example (Figure 1), as of March 1, 2002, the Corps drafted Lake Roosevelt down to elevation 1257 feet—versus a CRITFC draft of 1289 feet. That volume difference, 2360 KaF, would be difficult to regain later in the season if storm tracks alter unexpectedly—an increased risk during global warming. The Corps follows a rule curve that would take the reservoir down to elevation 1245 feet by April 30, 2002. In contrast, if CRITFC's altered flood control rule curve had been followed, Lake Roosevelt would only have drafted to elevation 1272 feet on April 30, thereby saving 17 feet of storage, or 1860 KaF, for fish migrations.

We recommend that the Corps and Reclamation carefully consider our analyses when crafting additional alternatives for the final EA on this proposed action.

Page 36

Hydropower was not intended to be, "[a]n important export product for the region." The Federal Columbia River Power System was created to meet regional power loads or Firm Energy Load Carrying Capacity, not to market power outside the region. The final EA should correct the statement on this page.

Page 37 Columbia River Treaty

CRITFC filed formal recommendations to the federal operators on 2002-2003 PNCA Non-Power Submittals on February 1, 2002. While the federal operators implemented VAR-Q at Hungry Horse, VAR-Q at Libby and flood control modification at Lake Roosevelt were not implemented. We have incorporated our PNCA recommendations in our DEA comments.

Page 43-50

Section 5.1.2.1, Libby Dam Hydrology Modeling Procedure

<sup>4</sup> The Variable-Q operation is specified in the 2000 PCRPS Opinion for Libby and Hungry Horse. In 2002, Reclamation implemented VAR-Q operations for Hungry Horse. The Corps has not implemented VAR-Q operations for Libby.

The DEA states, "[T]he models do not necessarily represent actual conditions that would occur in real-time operations." Although the Corps' HYSSR (monthly) model is used, there is no mention of the daily time-step model used, so it is uncertain as to what tools and/or methodologies were used to derive the modeling values. It is important that these methods are carefully presented, otherwise the results displayed in Figures 11 – 15 of the DEA are scientifically questionable and of limited value. Was the SSARR model (a daily model) used? Were the HYSSR monthly results disaggregated into pseudo daily data (if so, then how)?

The Corps' HYSSR model uses a 60-year adjusted-modified flow record whereas the region only has a 50-year record to use in hydrologic modeling. We request that the Corps' Northwest Division Hydraulic Engineering Branch release their 60-year flow record data to the CRITFC and the Northwest Power Planning Council to allow verification of results on the Council's GENESYS model.

Figures 13 – 15 display very poor curve fitting for the VAR-Q study and strongly suggest that the frequency for higher flood flow or exceedance of flood stage at Bonners Ferry is higher than is supported by the data. For example, a properly drawn curve on Figure 14 for VAR-Q at elevation 1764.5 ft (slightly above flood stage at Bonners Ferry) would have a percent exceedance of 5% instead of 10%. In fact, the curves for the Corps standard flood control are poorly drawn at those higher and critical levels. For the final EA, the Corps should attempt to better fit the data using standard statistical regression techniques and display correlation coefficient values.

Page 54

Section 5.1.2.1.3.4, Libby Dam – Bonners Ferry River Stage

DEA analysis neglects to mention that the modeling assumes all current dams are in place for the 1948 extremely high water year and excessive flooding is implied. An event of this magnitude only happens once every 100 or 500 years, is the worst-case scenario, and is not representative. Only selecting 10 years of the 61 year record appears subjective, the final EA should incorporate at least half of the flow years of record for modeling.

Page 68 –71

Section 5.1.2.3.10, Lake Roosevelt Elevation

Table 7 (p. 69) appears misleading. The DEA fails to illustrate the elevation effects for low, medium, and high water years.

The DEA analysis fails to consider the Alternative Flood Control (AFC) plan advocated by CRITFC. GENESYS hydro studies conducted by CRITFC (Martin 2002a) show that 9.25 MaF from the Snake-Columbia could be annually reclaimed from AFC operations without significantly increasing flood risk to the Vancouver-Portland harbors and provide major benefits to anadromous and resident fish. AFC operations combine (1) Modified upper rule curves for

13

Grand Coulee, Brewster, Dworshak, Hungry Horse, and Libby dams in the U.S., plus Arrow, Mica, and Duncan dams in British Columbia, and (2) earlier cutoff by May 31<sup>st</sup>, instead of June 30<sup>th</sup>, which is key to restoring the normative hydrograph. The CRITFC approach also takes advantage of global warming in its flood control operations whereas the Corps does not. The University of Washington Climate Impacts Group has strongly recommended that the region's managers actively incorporate climate change concepts into their planning and operations (UW-CIG, 2002). From our analyses, current flood control operations prematurely drain about 4.5 Maf annually that could be used for anadromous fish passage and reservoir storage.

14

An independent scientific and/or engineering review should be conducted on the feasibility and the consequences of altering flood control operations to achieve both additional storage in all basin reservoirs and increased spring flows water. The results of this review, with respect to Libby, Hungry Horse and Lake Roosevelt should be included in the final EA.

15

The DEA analysis appears to rely on the Water Supply Forecast (WSF) information too early in the season. This drives excessive prescriptive system storage drafts. If the WSF volumes decline, historical data indicates that federal operators are very unlikely to replenish that water in the reservoirs for spring salmon flows. Recent analysis by CRITFC indicates how a trending analysis can value-enhance the WSFs and save water in basin storage in medium-low and low water year classes (Martin 2002b). Implementing this method could retain more water in the reservoirs in low and drought-prone El Niño water years.

16

The DEA fails to discuss adapting more of a natural-peaking (normative) hydrological regime (Figure 2) for the mainstem Columbia and Snake. An increasing number of scientists advocate this approach (Williams et al. 1994 and others; Transboundary Conference 2002; Burn and Arthington, 2002).

17

The DEA fails to address the use of advanced weather and climate diagnostic tools to help decision makers. Many tools from NOAA-NCEP now exist: 30 day (up to 12 months) probabilistic climate forecasts, multivariate ENSO (El Niño Southern Oscillation) index, SOI values, ENSO Risk Model, and sea-surface temperature departure analysis. Other forecast tools include long-range models from Canada and the European Centre for Medium-Range Weather Forecasts. The University of Washington is researching ways to incorporate ENSO signals into mainstem flow models (Leung et. al. 1999) and now produce 1-year lead-time streamflow forecasts for the Columbia at The Dalles (Hamlet, 2002, 1999). A comprehensive package of the above climate forecast tools is needed to better manage all Columbia basin reservoirs, instead of continued reliance on outdated procedures. Nichols (1999) suggests that policy-makers and resource managers are unable, or unwilling, to utilize weather and climate forecasts in the decision-making process. The Corps needs to utilize all new tools for better water management.

Page 72

5.1.3 Water Quality

10

The DEA is misleading with studies regarding gas bubble disease. While Backman et al. (1999) did find symptoms in juvenile salmon as TDG levels approached 120%, these symptoms

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were very minor and were of the least significant harm category. Backman et al. (in press) found that only 1.4% of all sampled juvenile salmon had signs of gas bubble disease and that most of these occurred when TDG levels were above 120%. They found that only TDG levels approaching 130% exceeded the 15% gas bubble disease biological criteria. Backman and Evans (2002) and Backman et al. (in press) noted that adult and juvenile salmon achieve compensation for possible effects of TDG by swimming lower in the river and TDG levels up to 126% were not harmful to fish in the river. This level is also supported by NMFS (2000) in the 2800 PCRPS Biological Opinion as being appropriate to protect fish in the river. The final EA should correct these deficiencies.

19

The DEA does not offer any discussion or analysis of the potential temperature reduction benefits that would occur from additional summer flows that would be generated with VAR-Q operations. The final EA should contain these analyses.

Page 89

20

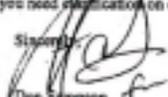
Table 14 illustrates the significant difference in storage in Lake Roosevelt at the end of April between the VAR-Q and existing operation. With the VAR-Q operation, additional flood control drafts at Lake Roosevelt would bring end of April elevations at Lake Roosevelt to mean sea level (msl) 1260. As stated above, this operation would increase conflicts between uses of water for spring and summer anadromous fish migrations and increase the risk of flow fluctuations and mortality of fall chinook fry in the Hanford Reach. The final EA should include and analyze these impacts.

Summary

21

We find the DEA inadequate in several key areas. We support the VAR-Q operations without additional flood control drafts at Lake Roosevelt. We recommend that the final EA and DEIS incorporate two additional alternatives: 1) analysis of implementing VAR-Q at both Libby and Hungry Horse without additional flood control drafts at Lake Roosevelt and; 2) analysis of purchasing additional flood control storage in Canadian reservoirs to compensate for reduction of flood control space in Libby and Hungry Horse and Lake Roosevelt.

We appreciate the opportunity to comment on the DEA. Please contact our Hydro Program Coordinator, Bob Heinich, at (503) 238-0667, if you need clarification on our analysis.

  
Don Simpson,  
Executive Director

Attachment 1

#### References

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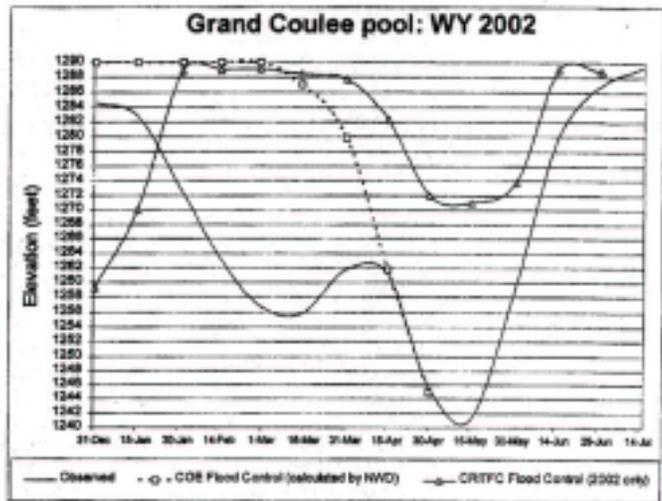


Figure 1. Effect of Corps flood control on Lake Roosevelt during Water Year 2002.

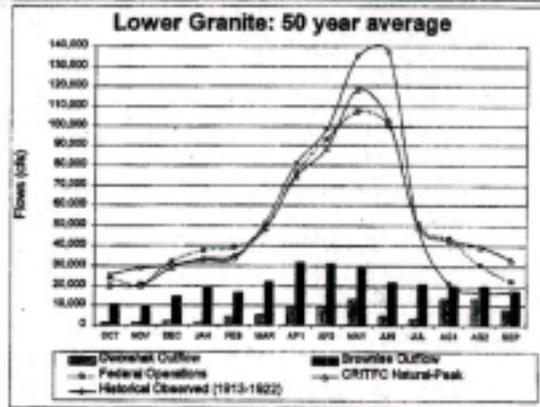
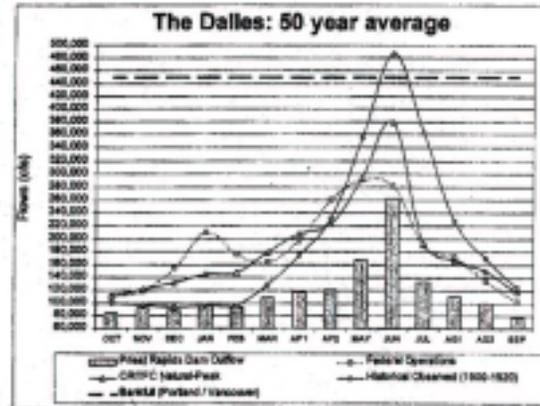


Figure 2. Natural-peaking (normative) flow regimes, as proposed in Martin 2002a.

ATTACHMENT I

CRITFC's DEIS scoping comments filed November 8<sup>th</sup>, 2001



COLUMBIA RIVER INTER-TRIBAL FISH COMMISSION  
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November 8, 2001

Dr. Stephen Martin  
Corps of Engineers  
Seattle District  
Environmental Resource Section  
P.O. Box 3755  
Seattle, Washington  
98124-3755

RE: Scoping Comments on Draft Environmental Impact Statement (DEIS) for Upper  
Columbia Basin Alternative Flood Control and Fish Operations at Libby Dam,  
Montana; Hungry Horse Dam, Montana, and Grand Coulee Dam, Washington

Dear Dr. Martin:

The Columbia River Inter-Tribal Fish Commission (CRITFC) has reviewed the scoping materials for the above DEIS. We have provided the following comments.

Scope of DEIS

CRITFC believes the scope of the DEIS is too limited. The Corps and Reclamation should include an alternative that incorporates flood control flexibility at Grand Coulee/Lake Roosevelt as well as Hungry Horse and Libby. We have serious concerns that the flood control flexibility loss at Lake Roosevelt from maintaining higher elevations at Libby and Hungry Horse will seriously impact anadromous fish, including Hanford Reach fall chinook, that are treaty reserved resources for our member tribes. CRITFC recommends that the Corps and Reclamation incorporate the following elements into a third alternative for DEIS consideration. These elements have been included in regional discussions and were formally submitted to the Northwest Power Planning Council's 2000 Fish and Wildlife Program.

Natural-Peaking Hydrograph Alternative

- Incorporate projections of increased global/regional warming to the alternatives analysis and to system flood risk. Global warming will influence runoff and refill since the spring freshet would occur earlier in the spring.

- Shift refill priority for Libby, Hungry Horse and Grand Coulee June 30<sup>th</sup> to May 31<sup>st</sup>. Pass all inflow in June through September, and start refill in October. Strategy will generate higher peaks, faster passage speeds, and mitigate for increasing global warming. The June peak is 375 kcfs (similar to June 1996) versus the Federal peak of 280 kcfs (50-year average).
- Lake Roosevelt fluctuations are minimized during spring and summer. Pool fills to 1280 feet during spring and to 1283 feet during summer.
- Modify the upper rule curves for Lake Roosevelt to draft less water, rather than more, across all water years. For Lake Roosevelt, pool elevational changes should be minimized from spring through summer. The pool should be maintained at 1280 feet in spring, then at 1283 feet through summer.
- Incorporate the VARQ rule curves for Hungry Horse and Libby.
- Utilize the Northwest Power Planning Council's GENESYS Hydro model to simulate river changes resulting from the above management alternative. Use water years 1928-1978.
- Modified flood control plus altered timing of refill are key to conserving water for spring and summer salmon migrations.
- All DEIS alternatives should incorporate advanced climate-forecasting tools in analyses of their merits. Advanced forecast tools (e.g., UW-DHSV, NWS-RFS) can minimize pre-mature flood control drafts or prepare the region for drought-level flows.

Additional Comments

The DEIS alternatives should consider the impacts to all non-ESA treaty reserved resources. These include, but are not limited to, Mid-Columbia summer chinook, coho, Pacific Lamprey, sockeye and sturgeon. Further, the DEIS alternatives should consider the economic consequences of implementing the alternative on tribal cultural values including living standards. The DEIS alternatives should also consider impacts to treaty fishing from flood control releases, including premature releases, and lack of appropriate flows to conduct treaty fisheries from these releases. Finally, the alternatives should consider opportunities to meet water quality standards for temperature and total dissolved gas. A recent Seattle District Environmental Assessment for gas abatement alternatives for Chief Joseph noted several Grand Coulee operational management alternatives that would allow for reductions in temperature and dissolved gas into the Mid-Columbia region, if flood control management in Lake Roosevelt was modified. We incorporate by reference our comments to that Environmental Assessment for inclusion in these scoping comments (Attachment).

CRITPC appreciates the opportunity to comment on scoping for the DEIS, and we look forward to working with the Seattle District to assure that a full range of alternatives are considered in the DEIS to provide flood control flexibility at Grand Coulee/Lake Roosevelt as well as Hungry Horse and Libby. Implementing such flexibility will greatly improve flow

conditions for anadromous fish, tribal cultural resources and tribal opportunities to engage in treaty fisheries. Please contact Kyle Martin (509) 238-0667 of our staff for further information about our recommended alternative for the DEIS.

Sincerely,

Robert Heinrich  
Hydro Program Coordinator

Attachment: May 8, 2000 CRITPC Comments on Draft EA for Chief Joseph Dam Gas Abatement

Cc: Bureau of Reclamation

## ***Response to Columbia River Inter-Tribal Fish Commission Comments***

CENWS-PM-PL-ER

30 Dec 2002

Draft EA for Interim Implementation of Alternative Flood Control and Fish Operations Responses to Columbia River Intertribal Fish Commission, 13 Dec 2002

1. The EA was prepared in response to the US Fish and Wildlife Service and NMFS 2000 BiOps issued December 2000 Corps' and the other Action Agencies' (Bonneville Power Administration and U.S. Bureau of Reclamation) which called for VARQ implementation for the 2002 fish migration season.
2. Operations called for in the USFWS and NMFS BiOps issued December 2000 at Federal projects are coordinated through the NMFS Regional Forum Technical Management Team process. The NMFS 2000 BiOp recognized the objective of the FCRPS to meet flood control requirements. In 2002 Grand Coulee met its flood control objective at the end of April. Reclamation then chose to draft Lake Roosevelt more deeply that needed for flood control to augment flow at Priest Rapids and McNary.
3. Under the Columbia River Treaty, the US Entity may purchase flood control storage in Canada for extremely high runoff conditions. This is not something that is used in routine operations.
4. Maintenance of system flood control requires compensating at Lake Roosevelt for reduced drafting at Libby and Hungry Horse.
5. The Corps will continue to develop flood control operating strategies consistent with the 1999 Flood Control Operating Plan taking into account operations called for in USFWS and NMFS BiOps issued December 2000. Ongoing coordination of operation is discussed at the NMFS Regional Forum Technical Management Team (TMT). Regional water supply forecasts are also discussed at the TMT. Water year 2002 was an example of a water supply forecast that began below average and increased across the runoff season to become above average. This emphasizes the need for continued updates and coordination through the season, since the water supply did not decline significantly as suggested by the CRITFC analysis.
6. This comment is taken out of context. There are occasions when hydropower is an important export product for the region. For more information please refer you question to the Bonneville Power Administration.
7. Comment noted.
8. Modeling procedures are described in Section 5.1.2.1.2.

9. The 60-year adjusted modified flow dataset was developed under contract to BPA for use by all PNCA parties. The data may be requested from BPA.

10. The curves shown are a result of hydrologic model simulations of regulated flow. The model results shown are a representation of the output from a particular set in put assumptions. It is recognized the information they provide is limited. In the EIS the Corps will more fully examine the models and the curves developed from regulated flow based on a) evaluation of previous work (particularly the final frequency curves or curves which formed the basis for the project authorization); b) assessment of unregulated events; and c) consideration of the standard project flood (SPF).

11. Years to model with fish flows were selected according to criteria described in Appendix E, Hydrologic Analysis of Upper Columbia Alternative Flood Control and Fish Operations On Columbia River System Including the VARQ Flood Control Plan at Libby and Hungry Horse Projects.

12. During low and high water years, there will be no effect on the elevation of Grand Coulee reservoir due to implementation of VARQ at Libby and Hungry Horse. Lake Roosevelt elevation will be affected only during slightly below to slightly above average water years as illustrated with this table.

13. The Corps will continue to develop flood control operating strategies consistent with the 1999 Flood Control Operating Plan. The Corps is currently evaluating a new forecast procedure for the inflow to Libby Dam, which uses new methods including an index relating to the Southern Oscillation Index of ocean temperature climate effects. Comparison of this method to the existing forecasts currently looks favorable. More comparison and testing of the procedure will be completed, and then any implementation of a new forecast procedure would be coordinated with regional interests, including Canada, BPA, and USBR.

14. The Corps is interested in undertaking a comprehensive review and update of system flood control requirements. We are currently seeking funding for the "Reconnaissance Phase" of the review, which will prepare a Project Management Plan to specifically identify the scope of such a review, products, costs, human resources, and address the federal interest of carrying out the full review. Regional coordination will occur as work is undertaken by the Corps. A Feasibility Study (the next step after reconnaissance) would incorporate independent technical review of all analyses and products. If funding is secured, the review could begin in fiscal year 2003.

15. Comment noted; please see responses to comments 5 and 13 above.

16. The Corps is operating the FCRPS in accordance with the USFWS and NMFS BiOps issued December 2000. Spring flow augmentation from Libby and Hungry Horse should help achieve a more normative hydrograph. Summer releases of water from upstream storage reservoirs in the Snake and Columbia Basins were established to increase flows in these rivers to assist migrating juvenile fall chinook during the summer when flows are generally low. The

timing of the releases is based on fish timing, most of the fish passing through the hydrosystem by the end of August.

17. Comment noted; please see response to comment 13 above.

18. Comment noted. We are aware that many factors affect susceptibility of fish to gas bubble disease, but a comprehensive study of effects to fish in the Kootenai River system has not been performed. We have no indication that the State of Montana will provide a variance from the 110% total dissolved gas saturation water quality limit as measured a short distance downstream of the Libby spillway. The USFWS BiOp RPA 8.2.a.1 calls for adherence to that limit.

19. Our flow releases from Libby Dam are temperature-controlled and adhere to a range of temperatures agreed upon with the State of Montana. That is not expected to change.

20. Comment noted; please see response to comments 1 and 13 above.

21. Comments noted. Please see specific responses above.

# Randall Day Comment Letter

Randall W. Day  
P.O. Box 358  
Bonners Ferry, ID 83805

December 13, 2002

Mr. Evan R. Lewis  
Environmental Resources Section  
U.S. Army Corps of Engineers  
P.O. Box 3755  
Seattle, WA 98124-3755

RE: November 2002 Environmental Assessment for Upper Columbia  
Alternative Flood Control and Fish Operations

Dear Mr. Lewis:

I am a general partner in Day Farms, a family farming operation, which raises cereal grains and grass seed in Drainage Districts No. 2, No. 3, No. 6, and No. 8, in Boundary County, Idaho. Additionally we farm a small parcel of land near Bonners Ferry. We cultivate and farm approximately 3200 acres. I also own farm land in Drainage District No. 2 and pasture cattle outside the diked land of Drainage District No. 2.

As I understand the Draft EA, the annual peak stage at Bonners Ferry will exceed 1258 feet about 75% of the time under VARQ. I understand under standard flood control rules, the flow would exceed 1758 feet approximately 55% of the time.

Day Farms suffers damage whenever the river level at Bonners Ferry exceeds 1758 feet.

Land drainage throughout our farming operation is always a serious problem. VARQ will only make this problem worse, flooding our farming operation and surrounding areas.

VARQ should not be implemented until the agricultural damages can be properly studied and determined.

The Draft EA makes it clear that VARQ with fish flows not only increases the risk

of flood but also the severity of the flood. In such instances the damages to property and human life is obvious. It appears the risk of flood is especially pronounced when early inflow forecasts are underestimated. It also appears that under estimating occurs most of the time.

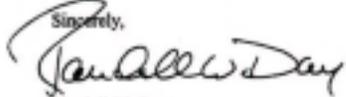
I understand that the environmental impacts of VARQ requires an EIS. The EA clearly demonstrates that further studies are necessary to fully understand the relationships between Libby Dam operation and the river elevation and duration before the EIS could be completed. Deferring implementation of VARQ at Libby Dam until completion of the EIS is the appropriate course for all agencies to follow.

VARQ will increase ground water flooding and flood risk and will directly destroy our crops and will make remaining farm operations much more costly.

To implement VARQ at this time without sufficient studies would be an act in deliberate indifference to the property damage and safety of the public.

Consideration of implementing VARQ should be delayed until completion of the EIS.

I hope that these comments will be helpful. Thank you for this opportunity to be of assistance.

Sincerely,  
  
Randall W. Day

RWD:nc

# Roy E. Day Comment Letter

Roy E. Day  
P.O. Box 885  
Bonners Ferry, ID 83805

December 13, 2002

Mr. Evan R. Lewis  
Environmental Resources Section  
U.S. Army Corps of Engineers  
P.O. Box 3755  
Seattle, WA 98124-3755

RE: November 2002 Environmental Assessment for Upper Columbia  
Alternative Flood Control and Fish Operations

Dear Mr. Lewis:

I am a general partner in Day Farms, a family farming operation, which raises cereal grains and grass seed in Drainage Districts No. 2, No. 3, No. 6, and No. 8, in Boundary County, Idaho. Additionally we farm a small parcel of land near Bonners Ferry. We cultivate and farm approximately 3200 acres.

As I understand the Draft EA, the annual peak stage at Bonners Ferry will exceed 1758 feet about 75% of the time under VARQ. I understand under standard flood control rules, the flow would exceed 1758 feet approximately 55% of the time.

1 { Day Farms suffers damage whenever the river level at Bonners Ferry exceeds 1758 feet.

2 { Land drainage throughout our farming operation is always a serious problem. VARQ will only make this problem worse, flooding our farming operation and surrounding areas.

2 { VARQ should not be implemented until the agricultural damages can be properly studied and determined.

3 { The Draft EA makes it clear that VARQ with fish flows not only increases the risk of flood but also the severity of the flood. In such instances the damages to property and human life is obvious. It appears the risk of flood is especially pronounced when early inflow forecasts are underestimated. It also appears that under estimating occurs most of

3 { the time.

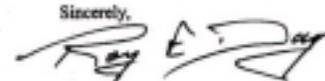
4 { I understand that the environmental impacts of VARQ requires an EIS. The EA clearly demonstrates that further studies are necessary to fully understand the relationships between Libby Dam operation and the river elevation and duration before the EIS could be completed. Deferring implementation of VARQ at Libby Dam until completion of the EIS is the appropriate course for all agencies to follow.

5 { VARQ will increase ground water flooding and flood risk and will directly destroy our crops and will make remaining farm operations much more costly.

6 { To implement VARQ at this time without sufficient studies would be an act in deliberate indifference to the property damage and safety of the public.

6 { Consideration of implementing VARQ should be delayed until completion of the EIS.

I hope that these comments will be helpful. Thank you for this opportunity to be of assistance.

Sincerely,  
  
Roy E. Day

RED:nc

# R. Steven Day Comment Letter

R. Steven Day  
Rt. 4, 6617 Buchanan  
Bonners Ferry, ID 83805

December 13, 2002

Mr. Evan R. Lewis  
Environmental Resources Section  
U.S. Army Corps of Engineers  
P.O. Box 3755  
Seattle, WA 98124-3755

RE: November 2002 Environmental Assessment for Upper Columbia  
Alternative Flood Control and Fish Operations

Dear Mr. Lewis:

I am a general partner in Day Farms, a family farming operation, which raises cereal grains and grass seed in Drainage Districts No. 2, No. 3, No. 6, and No. 8, in Boundary County, Idaho. Additionally we farm a small parcel of land near Bonners Ferry. We cultivate and farm approximately 3200 acres.

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Day Farms suffers damage whenever the river level at Bonners Ferry exceeds 1758 feet.

Land drainage throughout our farming operation is always a serious problem. VARQ will only make this problem worse, flooding our farming operation and surrounding areas.

VARQ should not be implemented until the agricultural damages can be properly studied and determined.

The Draft EA makes it clear that VARQ with fish flows not only increases the risk of flood but also the severity of the flood. In such instances the damages to property and human life is obvious. It appears the risk of flood is especially pronounced when early inflow forecasts are underestimated. It also appears that under estimating occurs most of

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the time.

I understand that the environmental impacts of VARQ requires an EIS. The EA clearly demonstrates that further studies are necessary to fully understand the relationships between Libby Dam operation and the river elevation and duration before the EIS could be completed. Deferring implementation of VARQ at Libby Dam until completion of the EIS is the appropriate course for all agencies to follow.

VARQ will increase ground water flooding and flood risk and will directly destroy our crops and will make remaining farm operations much more costly.

To implement VARQ at this time without sufficient studies would be an act in deliberate indifference to the property damage and safety of the public.

Consideration of implementing VARQ should be delayed until completion of the EIS.

I hope that these comments will be helpful. Thank you for this opportunity to be of assistance.

Sincerely,



R. Steven Day

RSD:mc

## ***Response to Comments from Randall, Roy E., and R. Steven Day***

CENWS-PM-PL-ER

30 Dec 2002

Draft EA for Interim Implementation of Alternative Flood Control and Fish Operations  
Responses to R. Steven Day, Roy E. Day and Randall Day (Day Farms) Comments, 13 Dec 2002

1. Commenters' assertion of agricultural damage for river stages above 1,758' at Bonners Ferry is noted. That condition is an issue related to groundwater seepage, not flooding. Flooding is defined as overtopping of banks and levees, for emergency management purposes. Flood stage at Bonners Ferry is 1764 feet.
2. The EA was prepared in response to the Corps' and the other Action Agencies' (Bonneville Power Administration and U.S. Bureau of Reclamation) responsibilities under the Endangered Species Act. The USFWS BiOp and Incidental Take Statement and the NMFS BiOp called for VARQ implementation for the 2002 fish migration season. Environmental and public safety impacts must be analyzed in order to make a decision to implement VARQ on an interim basis. Further evaluation of seepage-related agricultural damage is being performed pursuant to the EIS we are preparing for a decision on long-term implementation of VARQ.
3. The modeling performed for this EA indicates relative differences between alternatives but does not necessarily predict actual flow levels for specific events. We believe there is some increased flood risk to Bonners Ferry and Kootenay Lake for VARQ FC relative to Standard FC; however, the Corps believes real-time adaptive management will enable the Corps to manage this risk. We are revising the EA to reflect that modeling is only one tool used to evaluate flood control alternatives, and to more clearly show the benefit of real-time adaptive management operations on flood control (Section 5.1.2.1.1).
4. Please see response to comment 2.
5. Please see response to comment 3.
6. Please see response to comment 2.

# Environment Canada Comment Letter

12/12/02 16:18 ☎904 864 4055

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Environnement  
Canada

700 – 1200 West 73<sup>rd</sup> Avenue  
Vancouver, BC V6P 6H9  
Canada

December 12, 2002

Mr. Evan Lewis  
Department of the Army  
Seattle District, Corps of Engineers  
P.O. Box 3755  
Seattle, WA 98124-3755  
USA

Dear Mr. Lewis:

Thank you for your letter of November 13, 2002, requesting comment on the draft environmental assessment for Upper Columbia Alternative Flood Control and Fish Operations Interim Implementation, Libby and Hungry Horse Dams. I am pleased to provide the following comments on the draft with respect to the Kootenay and Columbia River systems. Environment Canada has reviewed the draft from the perspective of the Department's environmental mandate, and has not commented on factors such as historical culture and changes to energy production. I anticipate other Canadian agencies will address such issues.

Overall, we find that your assessment of the impacts of the flow modification has some shortcomings with respect to effects in Canada. The assessment lacks detail on the impacts on species frequenting the Creston Valley Wildlife Management Area (CVWMA), and on the effect of flooding on development around Kootenay Lake. We also have serious concern about a few of the impacts you do describe: the forecast increase in water levels on Kootenay Lake and the related potential for increased flooding; the likelihood of increased pumping costs on Duck Lake and the agricultural lands in the Creston Valley due to higher water levels on the Kootenay River; and finally, the possible harm or extirpation of endangered animals in British Columbia.

Much of the northern end of the Kootenay River delta forms the Creston Valley Wildlife Management Area. Designated under the Ramsar Convention as a wetland of international importance, over 100,000 waterbirds may be supported here during migration. Two hundred fifty species of birds, alone, are known to frequent the area. Several species, birds and others, like the Forster's Tern, are listed under either Canada's or BC's species at risk programs. Unfortunately, your report devoted only one paragraph [5.2.3.1] to the risk of flow alteration to any of the species in this area.

Perhaps our most serious concern is the endangered Northern Leopard Frog. This amphibian finds its last home in British Columbia in the

Canada



12/12/02 16:18 ☎904 864 4055

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CVWMA. Fish flow releases from Libby Dam have already been seen to inundate parts of the wildlife area. Further flooding under the VarQ option could potentially disrupt the egg masses of this frog, or allow the entry of predators. Before further flow alteration is implemented, it is essential that a full assessment be conducted to ensure this species will not be extirpated nor others harmed. We believe that it is counterproductive to potentially pit one endangered species against another. Other wetlands around the river and lake deserve similar examination.

2

Your report describes Libby Dam as having been built under your Flood Control Act and in accordance with the Columbia River Treaty between Canada and the United States [2.1.1]. However, it goes on to state that VarQ flood control will increase the elevation of Kootenay Lake by about two feet in any given year [5.4.2.1.2]. We would add that the VarQ flood control option further increases the downstream flood risk since an increased level in the Libby reservoir effectively decreases the resilience of the reservoir to error in the inflow forecasts. So we are concerned by the likely increase in water level during years that would have high water without VARQ, and cognizant of the heightened risk of a forced spill that would compound this impact.

Your assessment incorrectly states that the 1938 Kootenay Lake Order allows water levels up to 1755 feet [6.3]. In fact, during the freshet (i.e., generally April through much of August) the Order offers no set maximum lake elevation; only an elevation computed in proportion to inflow. (Regulated inflow is currently used to calculate the "lowering" in lake levels required by the International Joint Commission's 1938 Order, which pre-dates the Columbia River Treaty facilities.) While we understand local community codes now limit the elevation of new lakeside development to 1761 feet ("200-year flood construction level"), there are private properties, buildings and businesses that were previously developed below this level, having taken advantage of the flood control benefits of the Columbia River Treaty and Libby Dam. VarQ flood control puts that protection in jeopardy. As with the wildlife area, your assessment does not determine the full and specific impact of heightened water levels on people and property around the lake.

3

Our governments have allowed the Kootenai Flats and Creston Valley to be "reclaimed" from the river for the purpose of agriculture. Dykes have been built to protect this rich agricultural land. But the nature of the soil and drainage in the area makes it necessary to pump surplus water out of the fields and into the river at certain times of year. The seepage of water under and through the dykes compounds this problem and increases the pumping cost. Your assessment predicts an annual increase in river water levels from one-half foot to six feet [5.1.2.1.3.4], and further suggests an average increase in pumping costs (presumably estimating only costs in the U.S.) of half-a-million dollars [5.4.1.1]. For Duck Lake, which is part of the CVWMA, you predict a 40% increase in pumping costs [6.4]. These additional costs will come out of the Wildlife Area's conservation effort, making protection of fish on

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the Kootenay and Columbia come at the expense of other wildlife. On this point, we note that the Northwest Power Planning Council's Draft Mainstem Amendments aim to protect, mitigate and enhance all fish and wildlife in the basin.

4

In summary, the assessment of the VarQ flood control has not considered some important components, and some impacts that will adversely affect people and the environment have not been sufficiently assessed.

Therefore, we request that the Corps complete and strengthen the environmental assessment prior to an implementation decision. We have identified the areas of our particular concern in this letter. Further, the completed assessment should go beyond simply serving as a tool to weigh the pros and cons of alternative flow implementation. If the flow modification option is chosen, the assessment can provide a basis for designing mitigation measures for the negative effects of the proposal. Unfortunately, the interim timetable appears to have usurped a complete assessment and due consultation with the affected parties. If flow alterations are implemented in January, appropriate and timely mitigation will be difficult. As a result, several other species and Canadian and American citizens adversely impacted by VarQ may end up paying a high price for this initiative.

I trust that the Corps will take appropriate measures to modify the environmental assessment so that Canadian habitat, species and property will receive due consideration in the interim implementation decision.

Sincerely,



Paul Kluckner  
Regional Director  
Environmental Conservation Branch  
Pacific & Yukon Region  
Environment Canada

## ***Response to Environment Canada Comments***

CENWS-PM-PL-ER

23 Dec 2002

Draft EA for Interim Implementation of Alternative Flood Control and Fish Operations  
Responses to Environment Canada Comments, 12 Dec 2002

1. The Corps operates its projects under the respective authorities provided by Congress. The Corps' Libby Dam is authorized for multiple uses, including flood control, and will continue to be operated within its authorized operating range. Further, consistent with the Columbia River Treaty and Paragraph V of the Protocol Annex to the Exchange of Notes, the United States may from time to time, as conditions warrant, adjust the flood control operation at Libby.
2. Pursuant to the Columbia River Treaty, the United States Entity has been coordinating with the Canadian Entity with respect to the status of ongoing activities during development of the Environmental Assessment. Consistent with the Treaty and Paragraph V of the Protocol Annex to the Exchange of Notes, the United States may from time to time as conditions warrant adjust the flood control operation at Libby. The Columbia River Treaty Operating Committee (CRTOC) may undertake discussions of potential impacts in Canada under the Treaty. Environmental impacts will be given consideration during the decision of this EA when making the decision concerning interim implementation of VARQ. We believe interim implementation of VARQ is consistent with existing project authorization and releases under VARQ are within the limits of the authorization.
3. Comment noted. See response to comment 2.
4. The EA was prepared in response to the Corps' and the other Action Agencies' (Bonneville Power Administration and U.S. Bureau of Reclamation) responsibilities under the Endangered Species Act. The USFWS BiOp and Incidental Take Statement and the NMFS BiOp called for VARQ implementation for the 2002 fish migration season. The studies needed for consideration of the interim implementation of VARQ for this EA took considerable time due to their complex nature. The public was provided a draft interim EA for review consistent with NEPA regulations.

# Flathead Lakers Comment Letter

From: Robin Steinkraus [mailto:lakers@cyberport.net]  
Sent: Friday, December 13, 2002 4:40 PM  
To: Evan R. Lewis, USACE  
Subject: Upper Columbia Flood Control DEA-Comments

Mr. Lewis-

Following, and as an attachment, is a letter from the Flathead Lakers commenting on the November, 2002 Draft Environmental Assessment for the Upper Columbia Alternative Flood Control and Fish Operations Interim Implementation for Libby and Hungry Horse Dams. A hard copy will be mailed today also. Thank you.

Robin Steinkraus  
Executive Director  
Flathead Lakers  
PO Box 70  
Polson, MT 59860

December 13, 2002

Evan R. Lewis  
Environmental Resources Section  
U.S. Army Corps of Engineers  
PO Box 3755  
Seattle, WA 98124-3755

Re: Comments on the November, 2002 Draft Environmental Assessment for Upper Columbia Alternative Flood Control and Fish Operations Interim Implementaton at Libby and Hungry Horse Dams, Montana, Idaho and Washington (DEA)

Dear Mr. Lewis:

The Flathead Lakers support the U.S. Army Corps of Engineers<sup>1</sup> and Bureau of Reclamation's proposal for interim alternative flood control operations at Hungry Horse Dam. We also wish to raise some questions about its downstream impacts on Flathead Lake that we believe need clarification.

The Flathead Lakers is a nonprofit, grassroots organization working for clean water, healthy ecosystems and lasting quality of life in the Flathead Basin of Northwest Montana. The Flathead Lakers was formed in 1958 and currently has over 1,000 members.

1 { We support this proposal because of its benefits to threatened fish species in the Flathead Basin, its attempt to create a more natural flow regime in the Flathead River, and its purported potential benefits for improving <sup>3</sup>the probability of refill at Flathead Lake by moving releases from Hungry Horse from winter to the spring refill period<sup>2</sup> (p. 98, DEA).

The Flathead Lakers are pleased to see the federal agencies taking a

1 } broader look at basin-wide impacts, including giving more attention to headwaters areas such as the Flathead River. We favor dam operations that balance the requirements for resident, upper basin fish with those for anadromous fish in the mainstem Columbia River. A high priority should be given to filling headwaters storage reservoirs in the spring. The Flathead  
2 } Lakers also support incorporating a sliding scale for the date of required refill of Hungry Horse Dam. A sliding refill date based on reservoir inflow forecasts will reduce the potential for uncontrolled spill and fisheries impacts downstream.

3 } The Flathead Lakers have for many years strongly encouraged a basin-wide perspective and improved coordination between Hungry Horse and Kerr Dams. The DEA, however, provides very little information about potential impacts on Flathead Lake and opportunities for coordination between these dams. In fact, there is no mention of Flathead Lake in the discussion of outdoor recreation in section 3.4.4.2 (p. 35). Flathead Lake provides significant recreational, scenic and economic benefits to the Flathead Basin and State of Montana as well as being a major natural feature in a unique ecosystem.

4 } As you are aware (Section 6.1), the Bureau of Indian Affairs (BIA) is in the process of preparing an Environmental Impact Statement on a drought management plan for Flathead Lake and Kerr Dam. A drought management plan is required by the Kerr Dam license issued by the Federal Energy Regulatory Commission. A copy of the Flathead Lakers<sup>1</sup> comments for the scoping stage of the EIS is enclosed.

5 } Refill of Flathead Lake is only a problem during drought conditions, when lake level targets and lower Flathead River minimum flow requirements can conflict. The DEA indicates that during drought conditions VARQ won't make any difference as Hungry Horse Reservoir would already be drafted below flood control requirements. The March 2002 Voluntary Environmental Assessment (FONSI 02-02) on Interim Operation of the VARQ Flood Control Plan at Hungry Horse Dam, MT states that <sup>3</sup>VARQ operations were initiated in January 2001, but did not produce any benefits because of severe drought<sup>2</sup> (p. 3, emphasis added). If this is the case, how and when could VARQ at Hungry Horse improve the probability of Flathead Lake refill during drought conditions? The National Marine Fisheries Service Biological Opinion has changed the way water is released from Hungry Horse in dry years. It should not be assumed that power drafts will be greater than flood control drafts as the Biological Opinion limits drafts.

5 } Jeff Loman, Chief of Natural Resources for the Office of Trust Responsibilities for the BIA said in a meeting in Polson on October 23 that <sup>3</sup>We're going to go to the Bureau of Reclamation and say you need to be a part of this plan.<sup>2</sup> He said Hungry Horse Reservoir should do what it can to support Flathead Lake and River needs during drought years. Clarification is needed about how and when the VARQ would improve Flathead Lake refill and lake level maintenance in dry years (p. 8) and a more thorough discussion is needed about the impacts of VARQ on Flathead Lake and Kerr Dam operation.

5 } The Flathead Lakers believe there is historic precedent for water from the South Fork of the Flathead River being used to help maintain near-full pool lake levels in Flathead Lake during the recreation season. In fact, during the 2001 drought, negotiations among the Confederated Salish and Kootenai Tribes, PPL Montana, the Bureau of Reclamation and other agencies resulted in additional water being released from Hungry Horse Reservoir for the purpose of maintaining lake levels and lower river flows in addition to

flow augmentation for salmon downstream on the Columbia River.

Shortly after Kerr Dam began operating, most docks on Flathead Lake were converted from floating to fixed structures, indicating some assurance of a constant full pool summer lake level. Reliance on this precedent has now existed for nearly 60 years. After Hungry Horse Dam began operating, the South Fork's summer flows increased greatly (albeit with large short-term fluctuations). Whether intentional or not, we believe it is likely that water released from Hungry Horse Dam has masked some of the effects of low summer streamflow in the Flathead. Stable summer flows from Hungry Horse can help maintain the level of Flathead Lake during droughts as well as provide benefits for bull trout in the river.

5

Where there are options for flexibility in management of Hungry Horse Dam, we believe Flathead Lake should be given high priority. The Flathead Lakers encourage the Bureau of Reclamation to evaluate in the Final Environmental Assessment how VARQ water releases from Hungry Horse Dam during drought conditions can help maintain recreational lake levels at Flathead Lake and minimum flows on the lower Flathead River. We hope that Hungry Horse Dam management can help achieve these goals in most drought years without significant effect on flows for bull trout in the Flathead River system or for salmon in the Columbia River.

We encourage adoption and implementation of the proposal. Thank you for the opportunity to comment.

Sincerely,

Robin Steinkraus  
Executive Director

cc: Senator Conrad Burns  
Senator Max Baucus  
Representative Dennis Rehberg  
Governor Judy Martz  
Bureau of Reclamation  
Confederated Salish & Kootenai Tribes  
Jeffery Loman, BIA, Department of Interior

Enclosures: Flathead Lakers scoping comments on a drought management plan for Flathead Lake

## ***Response to Flathead Lakers Comments***

CENWS-PM-PL-ER

23 Dec 2002

Draft EA for Interim Implementation of Alternative Flood Control and Fish Operations Responses to Flathead Lakers, 13 Dec 2002

1. Comment noted.
2. Comment noted. NMFS BiOp Action 19 calls for a sliding refill date at Hungry Horse Dam to avoid involuntary spill.
3. The implementation of VARQ at Hungry Horse will have no significant impact on recreation at Flathead Lake. For information on potential impacts to Flathead Lake, the commenter is referred to the U.S. Bureau of Reclamation's "Voluntary Environmental Assessment and FONSI 02-02: Interim Operation of the VARQ Flood Control Plan at Hungry Horse Dam, MT" Pacific Northwest Region, Boise, Idaho at [www.pn.usbr.gov/project/salmon/pdf/VARQFONSI.pdf](http://www.pn.usbr.gov/project/salmon/pdf/VARQFONSI.pdf). The coordination opportunities between Hungry Horse and Flathead Lake are being addressed in the Kerr Drought Management Plan (DMP) EIS which is currently being prepared by the Bureau of Indian Affairs (BIA).
4. Comment noted.
5. VARQ is intended to improve flows for bull trout and Columbia River salmon and steelhead. The coordination of operations at Hungry Horse to improve Flathead Lake will be addressed in the DMP EIS which is currently being prepared. According to Reclamation's Voluntary EA, during extreme drought, Hungry Horse would not improve probability of refill. However; during marginal years of about 70% to 80% of average water supply, Hungry Horse can potentially improve refill probabilities at Flathead Lake by moving increasing Hungry Horse releases in May and June. During the 2001 drought, water was released from Hungry Horse for salmon augmentation as required by the FCRPS NMFS 2000 Biological Opinion. There was no additional water released for Flathead Lake level. The negotiations between Reclamation, PPL Montana and others determined how to shape and temporarily retain that water in Flathead Lake.

# Idaho Delegation Comment Letter



December 12, 2002

Mr. Evan Lewis  
US Army Corps of Engineers  
Seattle District  
P.O. Box 3755  
Seattle, WA 98124-3755

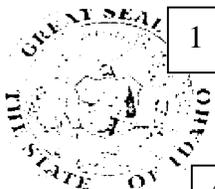
Larry E. Craig  
United States  
Senator  
520 Hart Senate Office  
Bldg.  
Washington, D.C. 20510

RE: Comments on November 2002 Environmental Assessment for Upper  
Columbia Alternative Flood Control and Fish Operations

Dear Mr. Lewis:

The community of Bonners Ferry, Idaho has partnered with tribal, state and federal resource agencies, as well as constituent organizations, to work toward collaborative management outcomes. It is our hope that this process will provide sound, scientific outcomes for enhancing existing natural resources and to recover threatened and/or endangered resources while maintaining the existing custom, culture and economic base upon which its citizens depend. We appreciate the level of cooperation we have received to this point from the U.S. Army Corps of Engineers.

Mike Crapo  
United States  
Senator  
111 Russell Senate Office  
Bldg.  
Washington, D.C. 20510



1

To that extent, we respectfully request that you not implement "VARQ" at Libby Dam at this time. An increase in the probability of a flood event occurring at Bonners Ferry, combined with a lack of certainty surrounding improvements in fish habitat, among other issues, makes implementation unreasonable at this time. The impact of increased flooding on the quality of life in Bonners Ferry would be devastating to this community, and is completely unacceptable.

DIRK KEMPTHOR  
GOVERNOR

2

We also request a response to the following concerns and questions:

3

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- What modeling system was used and why?
- How do you plan to update and improve the accuracy of forecasting?
- Relationships between dam operations and river stage/duration are not well known and further hydrologic and groundwater modeling needs to be done.
- When and how will this be accomplished?
- The actual economic impact of high water and flood conditions may be many times greater than the draft EA states.
- The difference in methodology between the U.S. and Canadian data concerning Kootenai Lake levels may now differ as much as four feet, questioning the ability of computer modeling in the EA to accurately predict the river stage at Bonners Ferry. How do you intend to address this problem?

7

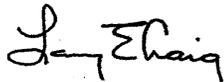
- The EA acknowledges that implementation of VARQ, with fish flows, increases the magnitude and severity of flood risk. This is clearly unacceptable.

- 8. The EA acknowledges that implementation of VARQ increases the likelihood of involuntary spill at Libby Dam and thus increases the likelihood that total dissolved gas concentrations will exceed the Montana limit of 110%.
- 9. The EA acknowledges that other factors besides flow are critical to fish recovery, specifically noting sediment and temperature.
- 10. Uncertainty in the understood relationships between releases, river stage, and Kootenai Lake levels calls into question success in maintaining clean gravel spawning beds.
- 11. VARQ, as we originally understood, was to both provide the water for fisheries as well as maintain existing or improved flood protection. This relationship has not been shown by the EA, and has caused confusion among our partners.

As a result, we look forward to working closely with you, and other agencies and stakeholders, during the ongoing formal environmental impact statement (EIS). We believe that the proposed alternative flood control and fish operations would harm the quality of the human environment, and that the EIS will provide the best opportunity to resolve these important and essential questions that are raised through the EA.

Again, we urge you to not implement VARQ until a full EIS can be completed and our above questions and concerns are addressed. Thank you for your consideration, and please contact us with any questions. We look forward to your timely response.

Sincerely,



LARRY E. CRAIG  
United States Senator



MIKE CRAPO  
United States Senator



BUTCH OTTER  
United States Representative



DIRK KEMPTHORNE  
Governor of Idaho



DARRELL KERBY  
Mayor of Bonners Ferry



MURRELEEN SKEEN  
Chairman, Boundary County Commission



DAN DINNING  
Boundary County Commissioner



ROBERT OLSEN  
Secretary/Treasurer, Boundary County Soil &  
Conservation District



ROBERT OLSEN  
President, Kootenai Valley  
Reclamation Association

cc: Col. Ralph Graves  
Anne Badgley  
Susan Martin  
The Honorable Judy Martz  
The Honorable Burt Stevenson  
The Honorable Laird Noh  
The Honorable Shawn Keough  
The Honorable John L. Campbell  
The Honorable George E. Eskridge  
Judy Danielson  
Jim Kempton  
John Ogan  
Doug Marker  
Michael Bogert  
Jim Yost  
Kerry Berg  
Steve Huffaker  
Greg Tourtlotte

## ***Response to Idaho Delegation Comments***

CENWS-PM-PL-ER

24 Dec 2002

Draft EA for Interim Implementation of Alternative Flood Control and Fish Operations Responses to Idaho Delegation Comments, 12 Dec 2002

1. The EA was prepared in response to the Corps' and the other Action Agencies' (Bonneville Power Administration and U.S. Bureau of Reclamation) responsibilities under the Endangered Species Act. The USFWS BiOp and Incidental Take Statement and the NMFS BiOp called for VARQ implementation for the 2002 fish migration season. We believe there is some increased flood risk to Bonners Ferry and Kootenay Lake for VARQ FC relative to Standard FC; however, the Corps believes real-time adaptive management will enable the Corps to manage this risk. We are revising the EA to reflect that modeling is only one tool used to evaluate flood control alternatives, and to more clearly show the benefit of real-time adaptive management operations on flood control (Section 5.1.2.1.1).
2. Three modeling studies were used to develop information for this EA and are discussed in Sections 5.1.2.1.1 and 5.1.2.3.1. Further documentation on the modeling studies is provided in three technical appendices titled:
  - Hydrologic Analysis of Upper Columbia Alternative Operations: Local Effects of Alternative Operations at Libby Dam
  - Hydrologic Analysis of Upper Columbia Alternative Flood Control and Fish Operations On Columbia River System including the VARQ Flood Control Plan at Libby and Hungry Horse Projects
  - Hydropower Impacts Analysis of Upper Columbia Alternative Flood Control and Fish Operations and Detailed Operating Plan Scenarios including Hydropower Considerations and VARQ On the Columbia River System
3. The Corps is currently evaluating a new forecast procedure for the inflow to Libby Dam, which uses new methods including an index relating to the Southern Oscillation Index of ocean temperature climate effects. Comparison of this method to the existing forecasts currently looks favorable. More comparison and testing of the procedure will be completed, and then any implementation of a new forecast procedure would be coordinated with regional interests, including Canada, BPA, and USBR. There are no other forecast procedures being evaluated at this time.
4. Relationships between dam operations and river stages at Bonners Ferry are documented in the water control manual for Libby Dam, and included in real-time operations. The effects of river stage on groundwater seepage in the Kootenai Flats area are being studied and will be included in the EIS.
5. We believe there is some increased flood risk to Bonners Ferry and Kootenay Lake for VARQ FC relative to Standard FC; however, the Corps believes real-time adaptive management

will enable the Corps to manage this risk. We will, however, do a detailed economic analysis as part of the EIS.

6. When the Libby project became operational in 1972, the US and Canada agreed to calculate the allowable lake level of Kootenay Lake using the regulated outflow from Libby and Duncan Dams as input to the formula, rather than an estimation of the “natural” flow into Kootenay Lake. The process of using regulated rather than natural inflow was reviewed in 1984 and again in 1998 and affirmed. Using regulated inflow to Kootenay Lake as an input to the lowering formula generally causes the upper limit of Kootenay Lake to be lower than it would have been using “natural” inflow. Since both the US and Canada use the same input data and calculation, there is no inconsistency in development of the maximum allowable lake level using the lowering formula. The modeling used by the Corps during development of the EA included a subroutine to simulate operation under the lowering formula as it is currently implemented.

7. Please refer to the response to comment 5.

8. There is some increased risk of involuntary spill with VARQ flood control over standard flood control, but we believe it can be managed using real-time adaptive management. Involuntary spill is possible with any operational strategy.

9. It is true that other factors besides flow are likely to affect sturgeon population viability. However, we must consider flow as a part of recovery planning for sturgeon, which is the intent of this EA. The EA was prepared in response to the Corps’ and the other Action Agencies’ (Bonneville Power Administration and U.S. Bureau of Reclamation) responsibilities under the Endangered Species Act. The USFWS BiOp and Incidental Take Statement and the NMFS BiOp called for VARQ implementation for the 2002 fish migration season.

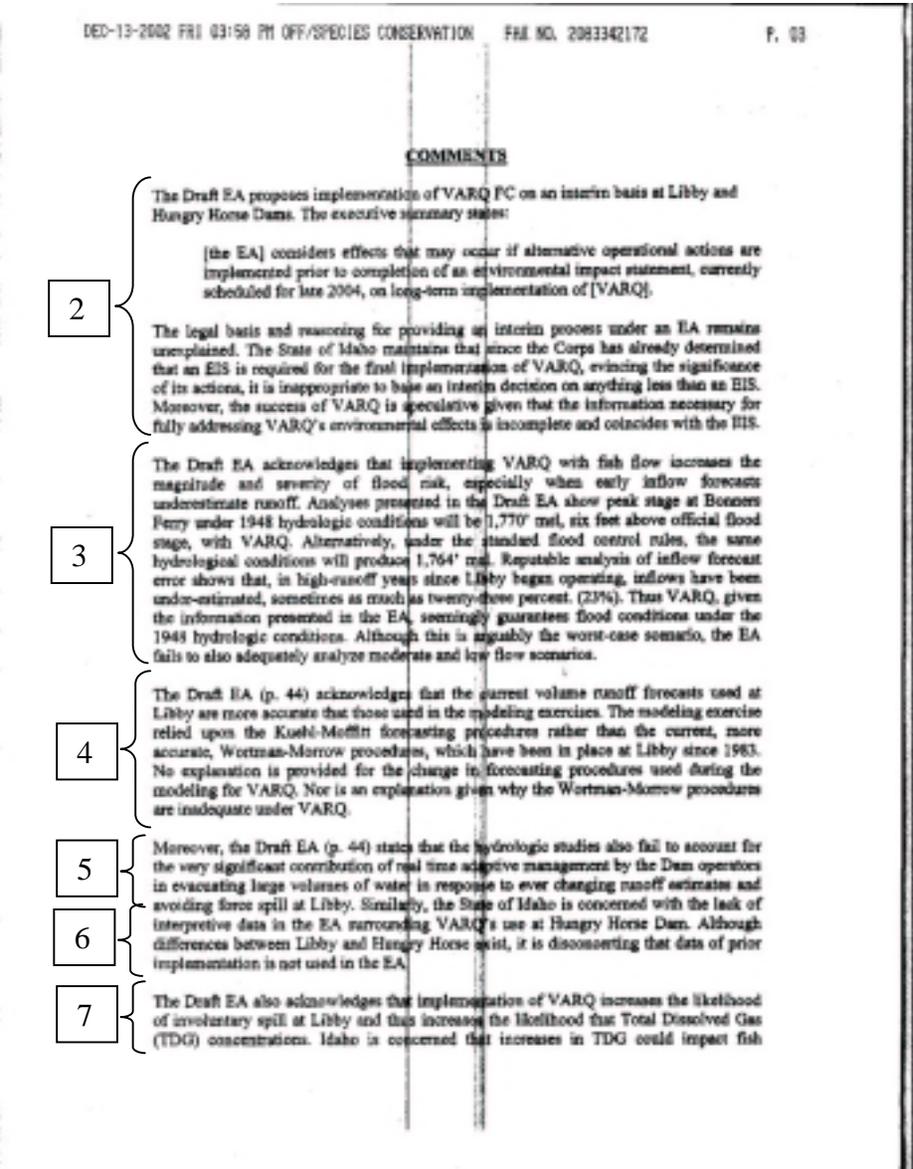
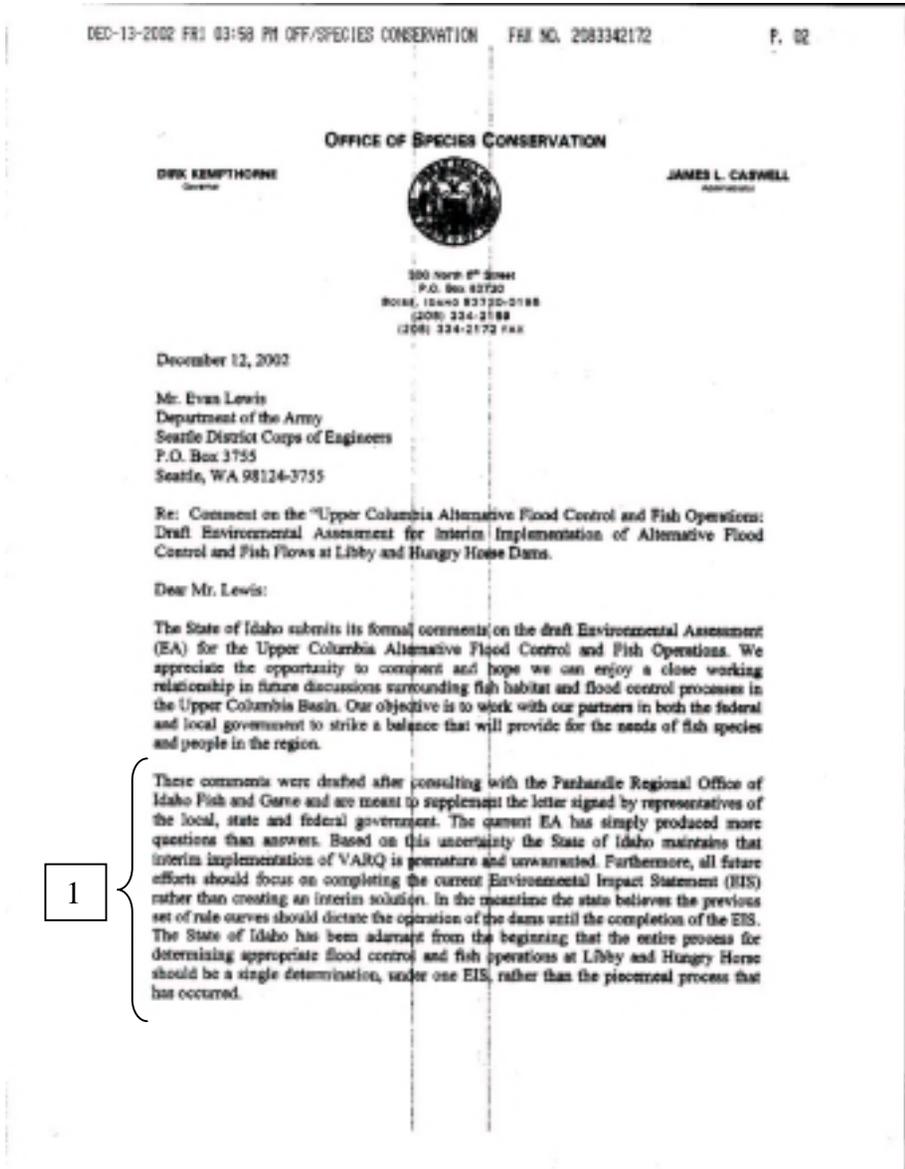
10. Maintenance of clean gravel beds probably cannot be accomplished within current flood control limits without changing the hydraulics in the critical habitat area for Kootenai River white sturgeon to increase water velocities. Geomorphic studies to address that issue have not been completed, and are not in the scope of this EA. However, there will likely be a need for flow augmentation as part of such an effort if and when it does come about. Relationships between dam operations and river stages at Bonners Ferry are documented in the water control manual for Libby Dam, and included in real-time operations.

11. The commenters are correct about the intent of using VARQ flood control to help provide flow augmentation for fish, while maintaining flood protection. We believe that VARQ meets those needs. We are revising the EA to clarify intent—see Section 2.4.1.

12. We share the commenters’ desire to work together on this and other issues of mutual concern.

13. Comment noted. Again, the USFWS BiOp and Incidental Take Statement and the NMFS BiOp called for VARQ implementation for the 2002 fish migration season.

# Idaho Office of Species Conservation Comment Letter



7

populations and negate the perceived benefits that interim VARQ presents for fish species. Thus, Idaho encourages the Corps not to implement and instead devote further study to the potential of TDG increases to ensure that fish populations are not negatively impacted by VARQ.

8

Another factor to consider is the potential listing of the burbot. If the burbot is indeed afforded Endangered Species Act (ESA) protection, VARQ as it is presently envisioned may be altered. If the decision is made to list the burbot, ESA §7 consultation will be initiated and a new Biological Opinion (BiOp) will be completed to include the burbot. The new BiOp may promote a different flow regime than the current BiOp, which in turn may alter the VARQ regime. Thus given the status of the burbot, as a petitioned species, it is premature to implement a regime that may be detrimental to the species.

Thank you for the opportunity to comment. Please contact my office if you have any questions or desire clarification.

Respectfully Yours,



James L. Carwell  
Administrator

dlv

## ***Response to Idaho Office of Species Conservation Comments***

CENWS-PM-PL-ER

20 Dec 2002

Draft EA for Interim Implementation of Alternative Flood Control and Fish Operations  
Responses to Idaho Office of Species Conservation Comments, 12 Dec 2002

1. Commenter's opinion is noted. The EA was prepared in response to the Corps' and the other Action Agencies' (Bonneville Power Administration and U.S. Bureau of Reclamation) responsibilities under the Endangered Species Act. The USFWS BiOp and Incidental Take Statement and the NMFS BiOp called for VARQ implementation for the 2002 fish migration season.
2. See response to first comment.
3. The modeling performed for this EA indicates relative differences between alternatives but does not necessarily predict actual flow levels for specific events. We believe there is some increased flood risk to Bonners Ferry and Kootenay Lake for VARQ FC relative to Standard FC; however, the Corps believes real-time adaptive management will enable the Corps to manage this risk. We are revising the EA to reflect that modeling is only one tool used to evaluate flood control alternatives, and to more clearly show the benefit of real-time adaptive management operations on flood control (Section 5.1.2.1.1).
4. All the models conducted for this EA were for the Columbia River System, and not limited to local modeling of individual basins. We used the Kuehl-Moffit forecasting procedure instead of the Wortman-Morrow procedure because the Kuehl-Moffit forecasts have been calibrated and used for system flood control modeling. We are revising the EA to clarify the use of forecast procedure in the modeling, and to provide an example of the impact forecast choice can have on the model results (Section 5.1.2.1.1).
5. See responses to comments 3 and 4. There is some increased risk of involuntary spill with VARQ flood control over standard flood control, but we believe it can be managed using real-time adaptive management and other tools.
6. The U.S. Bureau of Reclamation published a Voluntary Environmental Assessment and FONSI 02-02: Interim Operation of the VARQ Flood Control Plan at Hungry Horse Dam, MT in March 2002 to analyze the effects in the Pend Oreille valley from operation of Hungry Horse. The current EA on interim implementation of VARQ is intended primarily to analyze the effects of a combined interim operation of VARQ at both Libby and Hungry Horse, and analyzes effects of Hungry Horse operations alone (such as along the Pend Oreille River) only insofar as new information has become available since Reclamation's voluntary EA was released.
7. Please see the response to comment 5.

8. The Corps believes that VARQ flood control operations will complement a low flow operation that has been requested for burbot in winter, and thus would likely provide a net benefit to burbot. If the burbot are listed under ESA, the consultation process will address the burbot needs in coordination with the other listed fish species implicated by recommended burbot operations.

# Kootenai Tribe of Idaho Comment Letter

December 11, 2002

Mr. Evan Lewis  
Environmental Resources Section  
Seattle District, US Army Corps of Engineers  
P.O. Box 3755  
Seattle, WA 98124-3755

Dear Mr. Lewis:

The Kootenai Tribe of Idaho appreciates the opportunity to respond to the Draft Environmental Assessment for the Upper Columbia Alternative Flood Control and Fish Operations Interim Implementation on Libby and Hungry Horse Dams. After review of the document, several concerns come to our attention.

- 1 { We are concerned that there is too much confusion and uncertainty around the modeling as related in the EA; specifically the Corps currently utilizes the Wortman-Morrow forecasting for modeling operations at Libby Dam. In the EA the Kuehl-Moffit forecasting (utilized for the rest of the Columbia basin) is depicted. This does not allow us to fully understand or evaluate the outcome of implementation of VARQ specifically for Libby Dam.
- 2 { Considering the magnitude of the action proposed in the document, adequate time has not been allowed to fully pursue questions and gather additional information to aide in our analysis and response to the EA.
- 3 { Because of the uncertainty described above and potential impacts to our community, we respectfully request that the Corp not implement VARQ as proposed in the Draft EA. Rather the Tribe strongly urges the Corps to focus on continued development of the EIS to analyze potential effects of alternative flood control and fish operations at Libby Dam, scheduled for completion by early 2004.

4

In the EIS process, we urge the Corps to interface with the Tribe, the City of Bonners Ferry, and Boundary County to specifically address our concerns and bring clarity to the issues discussed above and others that may arise as an outcome of working together in this process.

Our main focus is to work jointly to develop a solution that is beneficial to fish and adequately ensures safety for our community. It is of the utmost importance that we have a process that is objective, fair and produces a quality product for decision-making in order to achieve the best for our community, the fish, and the big picture of the Columbia basin.

Thank you in advance for addressing our concerns; your prompt response is appreciated.

Sincerely,

Gary Aitken Sr.  
Tribal Council Chair

## ***Response to Kootenai Tribe of Idaho Comments***

CENWS-PM-PL-ER

23 Dec 2002

Draft EA for Interim Implementation of Alternative Flood Control and Fish Operations  
Responses to Kootenai Tribe of Idaho Comments, 11 Dec 2002

1. All the models conducted for this EA were for the Columbia River System, and not limited to local modeling of individual basins. We used the Kuehl-Moffit forecasting procedure instead of the Wortman-Morrow procedure because the Kuehl-Moffit forecasts have been calibrated and used for system flood control modeling. We are revising the EA to clarify the use of forecast procedure in the modeling, and to provide an example of the impact forecast choice can have on the model results (Section 5.1.2.1.1).
2. The studies needed for consideration of the interim implementation of VARQ for this EA took considerable time due to their complex nature. The public was provided a draft interim EA for review consistent with NEPA regulations.
3. The EA was prepared in response to the Corps' and the other Action Agencies' (Bonneville Power Administration and U.S. Bureau of Reclamation) responsibilities under the Endangered Species Act. The USFWS BiOp and Incidental Take Statement and the NMFS BiOp called for VARQ implementation for the 2002 fish migration season.
4. We acknowledge the commenter's desire for coordination with the Kootenai Tribe of Idaho, the City of Bonners Ferry, and Boundary County, and as with other affected communities, we will do our best to maintain communication and address concerns. We share the desire to develop a solution that meets the needs of listed species of fish and also the communities that are affected by dam operations.

# Kootenai Valley Trout Club Comment Letter #1

Dear Mr. Lewis,

Thank you for allowing me to make comments to the draft EA for interim Implementation of Alternative Flood Control and Fish Flows at Libby and Hungry Horse Dams on behalf of the Kootenai Valley Trout Club of Libby and Troy, Montana. The comments are listed in numerical section order. I'm sure you can appreciate the fact that there are only a few comments in comparison to the length of the original document.

1

The basic premise of our group thought is that a more normal Kootenai River hydrograph needs to be achieved in order for all river organisms to benefit. This river cannot be managed as a single species stream because it is clearly resulting in even further degradation of what was once considered an excellent habitat for a multiplicity of species, several of which were and are still eagerly sought by local and visiting sports persons and recreationists. Simply stated, what is good for the sturgeon, the bull trout, and the burbot has got to be good for the cutthroat and rainbow trout and the mountain whitefish and kokanee salmon.

Comment to Section 2.3, Purpose:

2

There is no incontrovertible proof that the summer salmon augmentation flows or lack thereof from Libby dam have **significantly** improved or inhibited the downstream movement of salmon smolts in the lower Columbia River Basin. In fact, Bryan Marotz with Montana FWP has stated that the additional waters from the Kootenai watershed will have dissipated into the surrounding environment and atmosphere by the time they should have reached any returning smolts. The few thousand cfs that Lake Koocanusa can contribute may only amount to less than 5% of the entire Columbia flow, but it would increase flows in the Kootenai River immediately below Libby Dam by as much as 50 to 100% of a normal instream rate. This has proven to be extremely detrimental to the resident fish including the native bull trout and cutthroat trout. Current electroshocking surveys in one section six (6) miles downstream of Libby Dam show an 80 to 90% reduction during the last three years in the number of trout older than 3-3 ½ years old.

3

Comment to Section 2.4, Flood Control Strategy Planning in the Columbia River Basin:

4

It is obvious that "water supply forecasting" needs to be performed sooner than January. Your attention should have been drawn to the events that led up to the extreme runoff conditions that developed in the early winter (2001-2002) in the Kootenai watersheds. The residents of this area were well aware of the ever increasing snow pack, yet the Reservoir Control Center did not acknowledge this higher than average snow pack until well into the spring. The Spill event of June and July is excellent testimony to the fact that there was some level of human error involved in the extremely fast buildup of runoff waters in the upper Kootenai.

Comment to Section 3.2.2.1, Fish, Libby Dam:

5

The term, “Blue Ribbon”, has rightfully been used in the past to describe the rainbow and cutthroat trout fishery in the Kootenai River immediately below Libby Dam to the Kootenai Falls area. However, this section has experienced a steady decline through the last 4-5 years in the numbers of trout 3-4 years old and older. The same section has also experienced a significant decrease in the size and duration of major aquatic insect “hatches” for the same time period. The primary reasons are inordinately low temperature of spring water releases from Lake Koocanusa, the fluctuating nature of power generation flows, higher than normal summertime flows (e.g., summer salmon augmentation), and the trapping of pass-through nutrients in Lake Koocanusa. You can no longer call this section of the Kootenai a Blue Ribbon or world class trout fishery.

Comment to Section 3.2.4.1, Kootenai River White sturgeon:

6

Vaughn Paragamian with the Idaho Fish and Game Department in Bonners Ferry, Idaho said that there are 1,500 naturally reared sturgeon and about 5,500 hatchery reared sturgeon in the Kootenai to and including Kootenai Lake. Of these fish, there are an estimated 1,500 adult sturgeon capable of spawning in the Kootenai River.

Comment to Section 3.4.4.1, Recreation, Libby Dam:

7

The Kootenai River should not be considered an excellent trout fishery. It can be considered to be a better year-round fishery than pre-dam days due to the absence of ice resulting from the tail-water flows from Libby Dam. However, the cutthroat and rainbow trout fishing before the construction of the dam, though seasonally limited to the late summer and fall, was far better than present day. The burbot were also so plentiful year-round that many people set out what were referred to as “ling lines” in the spring. It is felt by many that the pass-through nutrient flow inhibited by Lake Koocanusa has caused a drastic decrease in the large aquatic invertebrates such as the stone fly and food fish such as minnows and sculpins that these fish depended on year-round.

Comment t to Section 4.2, Libby Dam Sturgeon Flow:

8

Today, December 10<sup>th</sup>, 2002, the release from Libby Dam is nearly 25,000 cfs from a reservoir level of 2,428 feet. This flow rate hardly seems conducive to the safety and survival of any sturgeon egg sacs or larvae that may have been spawned during the spring of 2002. Couple this with the inordinately high summer flow rates that averaged above 20,000 cfs far into August and there should be no wonder that spawned sturgeon survival is unlikely. These high December rates are certainly of no benefit to burbot.

Comment to 5.2.2.1, Fish, Libby Dam:

9

Your document statement leading into the last paragraph of this section reads: “Releasing water from Lake Koocanusa for Columbia River Salmon deviates from natural conditions for the Kootenai River.” In addition, the last sentence of the paragraph alludes to more study being

9

necessary for the EIS (for long term VARQ) regarding the effect summer salmon discharges from the Kootenai have on resident fish. Your document also states that there have never been anadromous fish above Kootenay Lake. These statements, in and of themselves, should be reason enough to implement a more “normative” summer flow regime in the Kootenai River. Especially since there is no definitive information that flows or lack thereof from the Kootenai **significantly** increase or decrease summer salmon downstream movement.

10

Comment to Section 5.2.4.5, Kootenai River Burbot:

The current reservoir level is 2,428 feet and the Corps will draft to 2,411 feet via the present flow rate of 25,000 cfs. The Kootenai Tribe and the Idaho Fish and Game have declared that the burbot are very weak swimmers and need very low flows in order to migrate upriver to their January and February spawning areas. 25,000 cfs is not a low flow in December!

11

Comment to Section 8.8, Pacific Northwest Electric Power Planning and Conservation Act:

The Northwest Power Planning Council (NWPPC) is currently seeking comment on their new plans regarding restoration and protection of fish and wildlife populations in the Columbia River Basin. This writer has presented testimony to the NWPPC at a meeting in Kalispell Montana December 4<sup>th</sup>, 2002. The USACE should give a great deal of attention to the output from the NWPPC because it represents a return to operating the region’s facilities and rivers to benefit all species.

Again, thank you for the opportunity to contribute.

Sincerely,  
Michael S. Rooney  
President, Kootenai Valley Trout Club

## ***Response to Kootenai Valley Trout Club Comments #1***

CENWS-PM-PL-ER

23 Dec 2002

Draft EA for Interim Implementation of Alternative Flood Control and Fish Operations  
Responses to Kootenai Valley Trout Club Comments, 11 Dec 2002

1. Comment noted. We encourage the commenter to provide supporting information. We are making note of the commenter's input, and as appropriate, are revising the text of the EA to reflect factual information.
2. We are aware of the debate over the merits of the flow augmentation recommended in the BiOps. However, the Corps and the other Action Agencies made a decision to implement the actions called for in the BiOps. We recommend the commenter share any concerns about the biological merits of flow augmentation with the NMFS and USFWS.
3. As stated in comment response 1 above, specific support for this contention would be useful. Citation of an information source would be desirable, but in addition, simply stating that adult trout populations have declined in one reach of the river below the dam does not establish an impact from dam operations. We do not dismiss the possibility of some dam-related impact, but we cannot accept the commenter's contention without further information.
4. High runoff late in the 2002 snowmelt season was the result of late-season snow and high temperatures, and our operations were managed in real time to address these phenomena. The shape of the runoff is dependent on precipitation and temperature patterns which are more difficult to predict. The risk of experiencing involuntary spill in any given year is small with either standard flood control or VARQ with fish flows, and given real-time management, the increase in risk of involuntary spill and exceedance of Montana's total dissolved gas standards with VARQ FC is not considered significant.
5. Again, the citation of an information source or sources would make this information more useful to us. We are aware, though, of at least one report that attributes declines in aquatic insects to power peaking fluctuations, and we know that insects are important as food for cutthroat trout. We have curtailed much of our power peaking over the last several years, as well as instituted slower ramp rates (rates of change in dam discharge). We question whether spring water release temperatures are "inordinately low," since we follow release temperature guidelines in agreement with the State of Montana, and also because snowmelt temperatures are naturally low to begin with.
6. Recent information available to us indicates the population of Kootenai River white sturgeon is about 660 wild fish.
7. More substantiation concerning assertions regarding the trout fishery would be desirable. Burbot in the Idaho reach of the Kootenai River are acknowledged to have declined,

and we are ensuring that the EA accurately reflects causes as currently understood, which in Idaho are felt by Idaho Fish and Game to include elevated winter discharges and warmer winter water temperatures.

8. Sturgeon eggs hatch within about 2 weeks of spawning in spring or early summer, so eggs would not be present in December. The continued presence of older sturgeon juveniles indicates they are surviving elevated autumn flows. We understand that higher flows may impede burbot spawning migration in December, but we are also attempting to release enough water to be able to provide lower flows later to aid in their migration.

9. Comment noted. See also response to comment 2, above.

10. We are required to be at our reservoir flood control elevation of 2,411' by December 31. December 2002 releases were formulated to allow Lake Koochanusa to reach that elevation a week early in order to then drop flows to assist burbot migration.

11. Comment noted.

## Kootenai Valley Trout Club Comment Letter #2

From: Nancy Rooney [mnrooney@montanasky.net]  
Sent: Friday, December 13, 2002 12:25 PM  
To: Lewis, Evan R NWS  
Cc: Shea, Michael P NWS; bmarotz@state.mt.us; Rita Windom; wenke@libby.org; Bill Dodson; Birney Cassidy; Bruce Farling; Cathy and Dennis; kangler@libby.org; linehan@libby.org; televert@libby.org; TimRooney; waysmith@libby.org; 'Tom Gentry'; 'Al Randall'; 'Bob Casteneda'; 'Bob Porter'; 'Dennis Kyle'; 'Don Ross'; 'Doug Griffiths'; 'Gary Crismon'; 'Jim Bush'; 'John Carlson'; 'Kro'; 'Mark Romey'; 'Ted Pacheco'  
Subject: More Comments from Kootenai Valley Trout Club  
Evan---Several members of our club asked me to include the following comments:

It is apparent that USACE, BPA or USFWS wants to be able to provide an instream flow of 35,000 cfs on a fairly regular basis, which is in direct violation of Montana's water quality standards for dissolved gas because this flow rate would require that 7-8,000 cfs be spilled over the dam spillways. The 35,000 cfs flow rate is taken from your modeling study that can be easily skewed by sticking to an artificial inflow/full pool date that cannot be changed to follow nature's accumulation or lack thereof of moisture and by using worst-case runoff scenarios. We also understand that the electric power distribution system emanating from Libby dam cannot handle the increased generating load if additional generating capacity is installed in the powerhouse. The additional generating capacity would be needed to comply with Montana's water quality standard mentioned in the first sentence. In the face of the 35,000 cfs and a fixed date for reservoir fill-up it is obvious that USACE has something else they want to accomplish beyond the implementation of VARQ.

1 We feel that USACE, BPA, and the USFWS ultimately want to scare the hell out of residents of the Kootenai River valley below Libby Dam by skewing the data of the last several decades toward extremely high runoff events. This allows you to arrive at the 35,000 cfs as being a fairly frequent event. Once you have this number firmly etched in everyone's vision for the future of Kootenai River flow operations, then you'll come at us with ways that the potential damages can be mitigated. BPA and USFWS-orchestrated operations actioned by the USACE have already damaged this ecosystem enough. It is time that we work with what we have in place in Libby Dam to mitigate past and future damage. There is no need for additional generating capacity nor is there need for a multi-billion dollar project to upgrade the distribution system from the Libby Dam Powerhouse. You certainly do not need the local folks downstream of Libby Dam to view VARQ as an ogre waiting to flush them from their homes. USACE had earlier support from area residents for VARQ implementation because it represented to them (us) a more natural hydrograph, albeit curtailed somewhat by the existence of Libby Dam.

2 We feel that there is a need for more local input and control over operations at Libby Dam. The local control would reside with the Libby Dam Project Team using a variable refill date, locally gathered and analyzed snow build-up and run-off data, and the well engineered, researched, and coordinated direction of the Reservoir Control Center (RCC). Local input must be accepted and embraced from the State of Montana via Fish, Wildlife, and Parks (FWP) and

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Department of Environmental Quality (DEQ). You must also accept and embrace input from the corresponding agencies in Idaho and Canada and allow more direct input from non-agency residents in the Kootenai River sub-basin. Moreover, your models need to have the flexibility that nature intended with her tendency toward erratic weather conditions such that we can avoid consequences similar to what occurred this spring. It is still strongly suspected that there was a significant error within the control of the RCC that resulted in the extreme spill at Libby Dam this year. There was too much evidence of unusually high snow build-up and moisture content that was easily accessible from many sources including snow-tell sites that appears to have been ignored by USACE RCC modelers and forecasters.

3

KVTC was much too easy on you with our earlier comments as we were speaking specifically to what we THOUGHT VARQ represented to achieving a more natural hydrograph for Kootenai River flows. After further discussion it is very obvious that there is a hidden agenda within the framework of this EA for Interim Implementation and we want that agenda brought out into the open such that everyone DIRECTLY affected by Libby Dam operations can provide you with the guidance and input you have requested. At this time KVTC stands opposed to the modeling methods and data you used to arrive at such an extreme flow rate and fixed end-date for reservoir fill-up. It has caused great confusion among the folks you're trying to reach and it certainly casts much doubt on the veracity of your claims that our input is valued and will not be ignored.

Sincerely,  
Michael S. Rooney  
President, KVTC, a Montana TU chapter

## ***Response to Kootenai Valley Trout Club Comments #2***

CENWS-PM-PL-ER

23 Dec 2002

Draft EA for Interim Implementation of Alternative Flood Control and Fish Operations  
Responses to Kootenai Valley Trout Club Comments, 13 Dec 2002

1. Neither 35,000 cfs outflow capacity from Libby Dam nor increased transmission capacity are within the scope of this environmental assessment, in part because it is intended specifically to address whether or not VARQ can be implemented on an interim basis starting in 2003. We are unable to implement 35,000 cfs in that time frame, and the transmission capacity issue is not within the Corps of Engineers' or the Bureau of Reclamation's area of responsibility. Effect of 35,000 cfs outflows will be examined in the environmental impact statement currently being prepared for a long-term decision on VARQ implementation and related operations. However, even then we may not be able to address specifically how that increased flow capacity would be achieved. When we are at the stage that we can document such means, and if increased generation capacity is a likely alternative, then with the help of the Bonneville Power Administration, we will also address system transmission capability as part of that analysis.

2. The modeling performed for this EA indicates relative differences between alternatives but does not necessarily predict actual flow levels for specific events. We believe there is some increased flood risk to Bonners Ferry and Kootenay Lake for VARQ FC relative to Standard FC; however, the Corps believes real-time adaptive management will enable the Corps to manage this risk. We are revising the EA to reflect that modeling is only one tool used to evaluate flood control alternatives, and to more clearly show the benefit of real-time adaptive management operations on flood control (Section 5.1.2.1.1). We seek and use input from local and other nonfederal information sources, including those the commenter mentions, in developing our analysis, and for in-season management. High runoff late in the 2002 snowmelt season was the result of late-season snow and high temperatures, and our operations were managed in real time to address these phenomena. The shape of the runoff is dependent on precipitation and temperature patterns which are more difficult to predict. The risk of experiencing involuntary spill in any given year is small with either standard flood control or VARQ with fish flows, and given real-time management, the increase in risk of involuntary spill and exceedance of Montana's total dissolved gas standards with VARQ FC is not considered significant.

3. VARQ is intended to help provide a hydrograph that is somewhat closer to natural than standard flood control might allow, but in a controlled fashion. Again, we are revising the EA to better reflect that modelling is only one tool used to examine river operations, to clarify use of forecasting procedures, and to more clearly show the effect of real-time operations on flood control.

## Dan Lester Comment Letter

From: Dan & Sally Lester [retselds@plix.com]  
Sent: Sunday, December 08, 2002 7:39 PM  
To: Lewis, Evan R NWS  
Subject: Comments on Draft EA  
I tried to submit e-mail to uceis@usace.army.mil but it did not recognize that address.

My comments.

1. It is not clear, if the potential to increase the river stages at Bonners Ferry, and the likelihood of exceeding the level of 1750 feet at Kootenay Lake, why this would be recommended. This is a potential negative hazard.
2. Water, Sediment, and Air Quality- The potential to increase the duration of exposure of sediment which contains contaminants to Lake Roosevelt is not an acceptable condition. The warnings at Lake Roosevelt presently keep people from eating large quantities of bottom fish. This may make this condition worse. A lot of people recreation at Lake Roosevelt, and any impact that may possibly cause swimmers to have to curtail activities or be impacted in any health condition will be a large negative impact.
3. Cultural and Historic Resources- This impact to more exposure to erosion will also affect the adjoining residents within 1/2 mile to additional dust being blown by the wind. Presently as the Lake is drawn down, a property owner along the lake can not keep the house or outside areas clean due to the large dust accumulation. It is presently hard to see at times due to the dust in the air and any possible increase in this condition or longevity will not be accepted by the property owners.

Thanks for the opportunity to be allowed to comment.  
Dan Lester (Lake Roosevelt resident)  
e-mail retselds@plix.com

## ***Response to Dan Lester Comments***

CENWS-PM-PL-ER

20 Dec 2002

Draft EA for Interim Implementation of Alternative Flood Control and Fish Operations Responses to Dan Lester Comments, 8 Dec 2002

1. The modeling performed for this EA indicates relative differences between alternatives but does not necessarily predict actual flow levels for specific events. We believe there is some increased flood risk to Bonners Ferry and Kootenay Lake for VARQ FC relative to Standard FC; however, the Corps believes real-time adaptive management will enable the Corps to manage this risk. We are revising the EA to reflect that modeling is only one tool used to evaluate flood control alternatives, and to more clearly show the benefit of real-time adaptive management operations on flood control (Section 5.1.2.1.1).
2. At the present time there have not been any studies which assess the apparent risks associated with the exposure of sediment in Lake Roosevelt. While the impact of these contaminants on human health and the environment has yet to be determined, the proposed action is within the scope of past operational activities and should not significantly alter these existing conditions.
3. For any given year, VARQ will result in lower average Lake Roosevelt elevation than standard operations between the months of March and May, with the greatest differences being in April and May where lake elevations are slightly more than 3 feet lower than standard operations. However, this proposed action is within the overall scope of past operational activities. In general, localized affects of the wind-borne erosion of contaminated sediments have not been determined. The USGS, in cooperation with Reclamation and the Lake Roosevelt Water Quality Forum, is presently conducting air emission studies of contaminated lake sediments entrained during wind storm events. This study will attempt to determine the potential for respiration and ingestion of contaminated sediments at pre-selected receptor sites and will aid in the performance of risk analysis at a later date. Completion of the air emissions study is expected by 2006.

## Jim and Helen Marx Comment Letter

From: JHMarx [jhmarx@coldreams.com]  
Sent: Wednesday, December 11, 2002 7:19 PM  
To: Lewis, Evan R NWS  
Subject: Comments on Alternative Flood Control and Fish Flows at Libby and Hungry Horse Dams in Montana  
From Jim and Helen Marx ID#9908, Bonners Ferry, ID December 10, 2002

Attention: Mr. Lewis:

We would like to request the Corp to manage the Kootenai River Flow Level at Bonners Ferry, in a way that does not put parts of our lower field under water. Our land is located on the North side of Bonners Ferry across the river from the saw mill.

1 We are farming approximately 40 acres there. The seepage is killing out part of the crop or making parts of the field too wet to get on to harvest.

The High Water mark that has been set does a lot of damage to our crops.

In past years before the sturgeon river raises, farming the field was not a big problem

2 The North Side dike has been damaged by the past rapid raising and lowering of the river due to Libby Dam operations.

It is only reasonable to believe that the owners and operators of the Libby Dam should be responsible for the dike damage and crop loss, suffered by the Kootenai Valley Farmers.

3 We can understand some damage in High Water Flood Years, but not average and low water years.

We know the Corp does not feel responsible for the dike or seepage damage, however we would like to see something done about the problem, besides making it worse by raising the river more and raising it higher.

Thank you for reading about our problem.

Jim and Helen Marx

## ***Response to Jim and Helen Marx Comments***

CENWS-PM-PL-ER

23 Dec 2002

Draft EA for Interim Implementation of Alternative Flood Control and Fish Operations  
Responses to Jim and Helen Marx Comments, 10 Dec 2002

1. Comment about seepage is noted. If the reference to a high water mark refers to the flood control elevation, that is the level at which overbank flooding occurs. Commenter's concern about seepage related to sturgeon flows is noted. We are conducting a study to better evaluate the relationship between river stage and groundwater seepage for the EIS we are preparing concerning long-term implementation of VARQ and fish flows.
2. Levee damage due to river elevation changes and power peaking is outside the scope of this environmental assessment. However, it is being addressed through slower ramping rates (rates of change in dam outflows) and curtailment of power peaking, which has already occurred over much of the year.
3. Local diking districts are responsible for levee maintenance. Curtailment of power peaking and moderation of flow ramping rates has served to limit damage to dikes from dam operation. The relationship between river level and crop loss is being studied, but has not been fully determined, so it is premature at this point to discuss responsibility.

# Bill Michalk Comment Letter

-----Original Message-----

From: Bill Michalk [mailto:frycrkrch@nidlink.com]

Sent: Friday, December 13, 2002 4:40 PM

To: Laufle, Jeffrey C

Subject: Draft VARQ EA comments

Jeff, the following are my comments of the Draft EA for VARQ at Libby Dam. Please forward these for me to the right people (Mr. Evans or who ever).

Thanks you,

Bill Michalk

HCR 85 Box 338

Bonnors Ferry, Idaho 83805

208.267.1171

Public Comments

Draft Environmental Assessment- VARQ at Libby Dam, Mt.

Executive Summary:

1 { 1. Other flood type damages exist in the Kootenai Flats area besides Agricultural damages (ie. flooded basements, roads, businesses, bank erosion, etc.) The executive summary should state all of these flood type damages.

2 { 2. Because VARQ will increase the magnitude of flooding downstream of Libby Dam specifically in the Kootenai Flats area, a risk assessment for the increased loss of human life should be included in this study. The increased number of human lives lost due to the flooding should be reported in the executive summary.

3 { 2.3 Purpose:  
Along with the reported benefits of VARQ, this paragraph should also state that VARQ decreases flood protection downstream of Libby Dam for the damage centers of Bonnors Ferry Idaho and Creston B.C.

3.1.2.2.1 Water Quality- Libby Dam

4 { 1. Sedimentation in the fisher river is caused by runoff from the major forest burn areas between Libby and Kallispel, Mt. "Extensive logging" is not the major source of sedimentation.

5 { 2. No previous studies have shown that "agriculture has caused increases in pollutant and contaminate levels in the Kootenai Flats area". If new studies exist to verify this statement then they should be referenced here, otherwise the statement should be eliminated.

6 { 3.2.4.1  
Per U.S.G.S. core samples in the Kootenai River, essentially No "shallow" gravel substrates exist in the majority of the critical habitat area downstream of the Bonnors Ferry- Kootenai River Bridge. If new studies exist that support this claim then they should be referenced here, otherwise this statement should be eliminated.

- 7 { 3.4.1.1.1  
River bank erosion should also be included along with seepage-agricultural damages.
- 8 { 5.1.2.1.2  
"Real-time adaptive management decision-making" can not provide any benefit if the root cause of the problem is large forecasting error, such the spring 2002 runoff error and spill at Libby Dam. No credit should be taken for decision making to minimize flood damages under these conditions. This statement should be eliminated.
- 9 { 5.1.2.1.2.3  
Because VARQ will cause increased flood damages (both elevation and duration) in the Kootenai Flats area, and the Bonners Ferry and Creston population centers, a risk assessment for the increased loss of human life must be included in this E.A. A loss of human life assessment will then provide for a determination of deliberate negligence when such event occurs.
- 10 { FIGURE 14  
The modeled water years should include 1929-2002 ( not 1929-1998). The 2002 spring runoff at Libby Dam is important for the VARQ model because of its large runoff forecast error. Good engineering practice would dictate that years with large runoff forecast errors should be included in the assessment.
- 11 { 5.4.1.1  
1. "Harp (2001)" estimated 1997 agricultural losses at \$1,207,615. for wheat, barley, oats, hay.  
This value did Not include the hop damages of \$379,276 (hop damages are agricultural damages). Therefore, the total 1997 agricultural losses were approximately \$1.6 million, not \$1.2 million as stated.
- 12 { 2. Based on the above, fish flows increase agricultural damages by more than \$1 million.
- 13 { 5.4.2.1.1  
1. VARQ flood hazards for Libby Dam should include modeling of the spring 2002 runoff. Previous USACE studies (ie. P. McGrain 1997, 1999) indicate that runoff forecast errors are extremely important for VARQ to not exceed the two hundred year flood stage at Bonners Ferry. Because a large forecast error existed in 2002, it should be included in the modeling.
- 14 { 2. Because VARQ will increase Kootenai River flood damages, a risk assessment must be included in the E.A. to evaluate the increased loss of human life.

## ***Response to Bill Michalk Comments***

CENWS-PM-PL-ER

23 Dec 2002

Draft EA for Interim Implementation of Alternative Flood Control and Fish Operations  
Responses to Bill Michalk Comments, 13 Dec 2002

1. It is important to understand the distinction among flooding, bank erosion and groundwater seepage. Flooding involves the river overtopping banks or levees, but is not the primary source of concern for agricultural impacts; that is groundwater seepage. We believe the executive summary states the situation accurately, distinguishing flooding from seepage impacts. Ongoing levee erosion is not a result of flooding, though we acknowledge the concern and have been monitoring it.
2. We have no information to suggest that increased loss of human life is likely as a result of VARQ.
3. The purpose statement is not written to capture impacts. It is intended to state why the action in question is being proposed.
4. Burned areas may have contributed to sedimentation in the Fisher River, but logging also contributes to the Fisher River's sediment load. The EA has been revised to reflect both sources.
5. Comment noted. The EA has been revised be more general with regard to potential sources of contaminants.
6. USGS studies have recently shown buried gravel in the sturgeon spawning area between Bonners Ferry and Shorty's Island. The EA has been revised to identify that the shallow layer of sand is approximately 5 feet deep.
7. Levee erosion is not a direct issue for agriculture, but the EA is being revised to reflect this issue in Sec. 3.4.1.1.
8. The point of the statement is that the modeling performed for this EA indicates relative differences between alternatives but does not necessarily predict actual flow levels for specific events. We believe there is some increased flood risk to Bonners Ferry and Kootenay Lake for VARQ FC relative to Standard FC; however, the Corps believes real-time adaptive management will enable the Corps to manage this risk. We are revising the EA to reflect that modeling is only one tool used to evaluate flood control alternatives, and to more clearly show the benefit of real-time adaptive management operations on flood control (Section 5.1.2.1.1). High runoff late in the 2002 snowmelt season was the result of late-season snow and high temperatures, and our operations were managed in real time to address these phenomena. The shape of the runoff is dependent on precipitation and temperature patterns which are more difficult to predict. The risk

of experiencing involuntary spill in any given year is small with either standard flood control or VARQ with fish flows, and given real-time management, the increase in risk of involuntary spill and exceedance of Montana's total dissolved gas standards with VARQ FC is not considered significant.

9. See the response to comments 2 and 8.

10. Data were not available for 2002 in a form that was usable for the modeling.

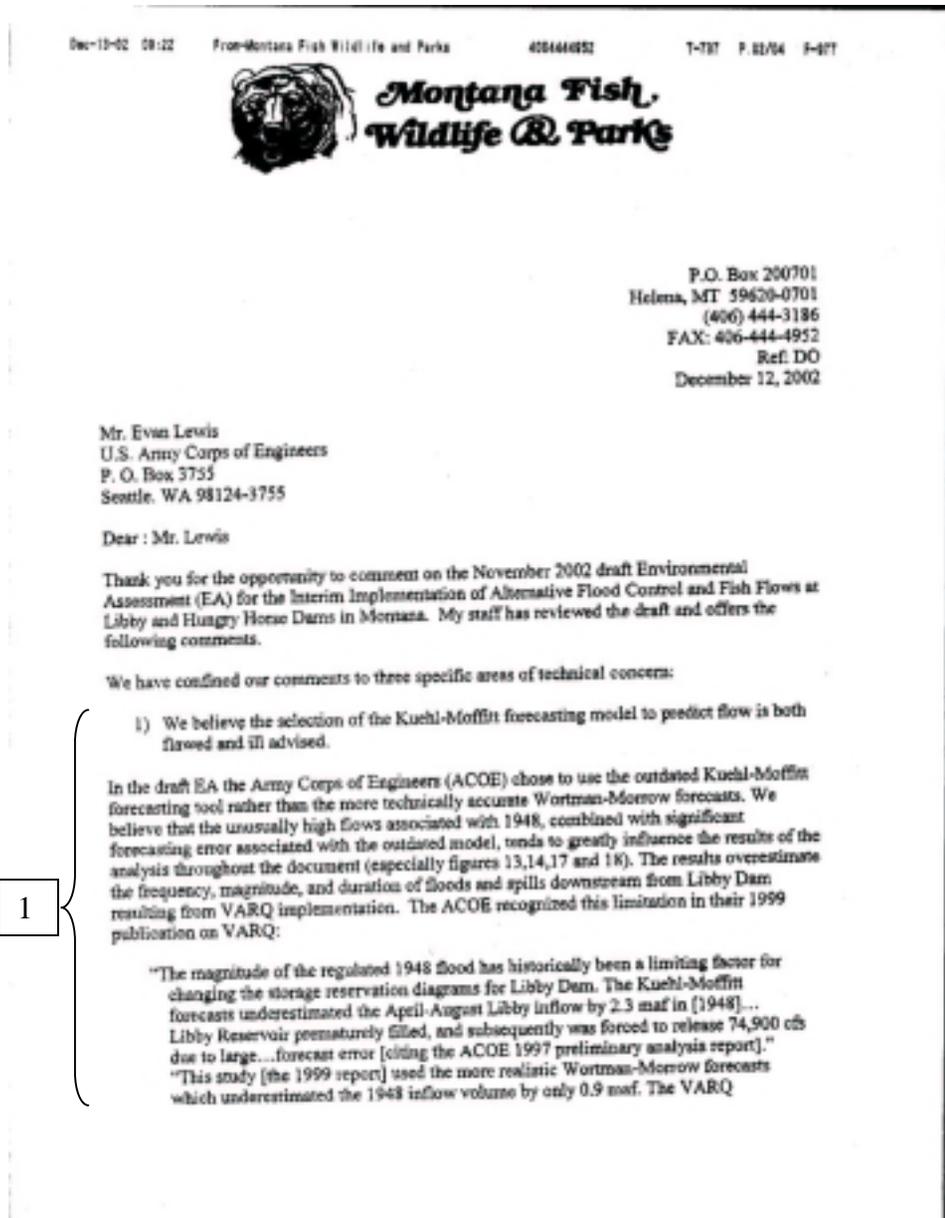
11. Comment noted. EA is being revised to reflect hop damages for 1997 in Section 5.4.1.1.

12. It is not correct to attribute the conditions in 1997 to fish flows, because the 1997 flows were largely a flood control operation, and because such a relationship has not been established. We have begun groundwater seepage studies intended to clarify the relationship between river stage and duration, and areas affected by seepage. That information will be analyzed for the EIS and will be used in determining economic effects of fish flows in more detail.

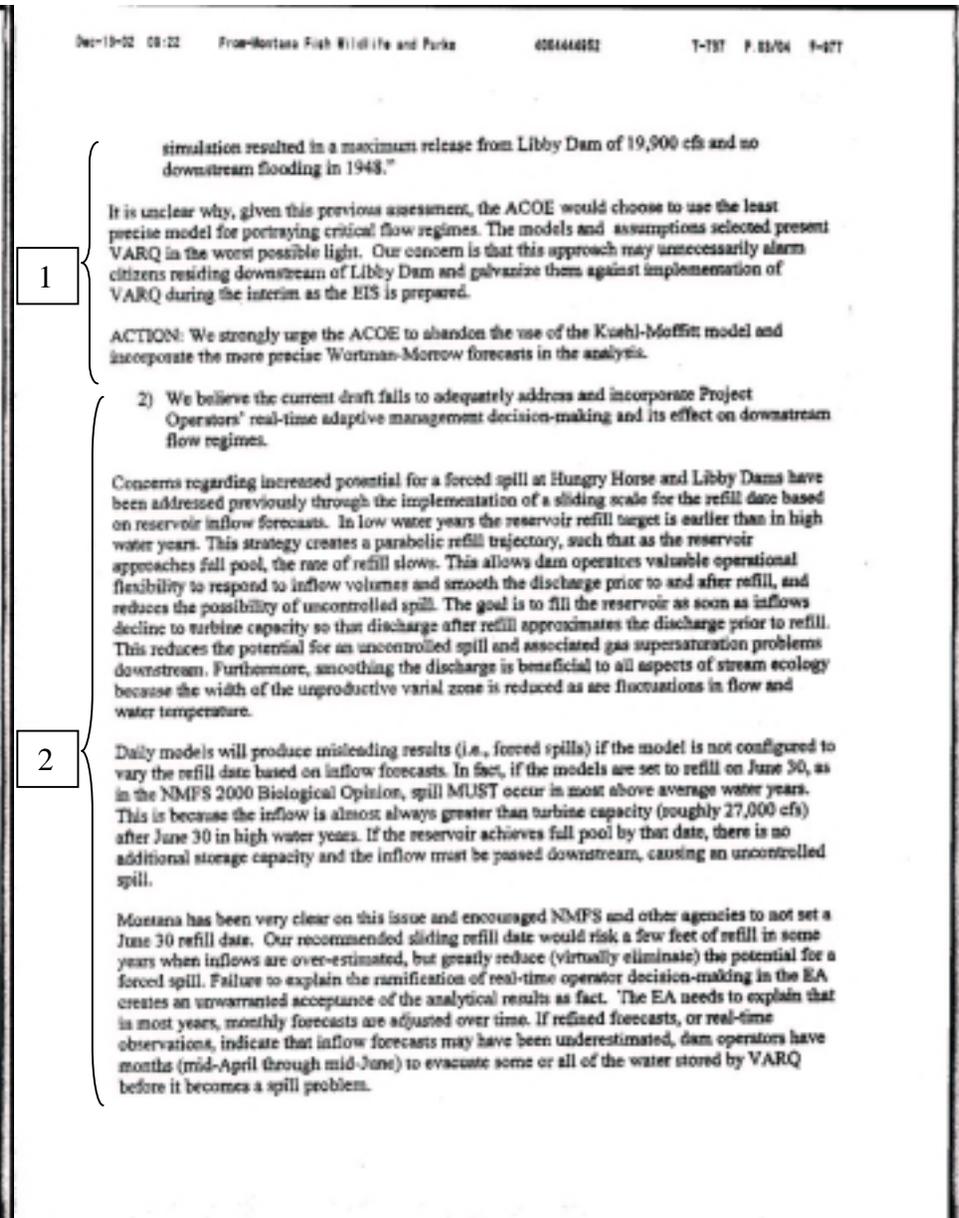
13. See response to Comment 10.

14. See response to comment 2.

# Montana Department of Fish, Wildlife, and Parks Comment Letter



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ACTION: We urge the ACOE to more fully and accurately explain the ramification of real-time operator decision-making in the EA.

3) We believe the draft EA insufficiently explains, and therefore inadequately portrays, how water releases for fish and power operations influence the analysis of VARQ.

The analysis included within the draft EA assumes that 35,000 cfs will be released from Libby Dam as per the U.S. Fish and Wildlife Service's 2000 Biological Opinion. This volume is approximately 7,000 cfs greater than existing turbine capacity and could only be accommodated through use of the spillway, thus causing gas supersaturation in excess of Montana's water quality standards, set at 110 percent saturation. This so-called fish operation is separate and distinct from VARQ. Yet in figure 20 on page 59, the actions are combined to depict a higher incidence of spill and gas under the "VARQ flood control with fish flows" operation. This gives the erroneous impression that VARQ creates a higher probability of spill. No explanation is provided to put the effects of the two separate actions in perspective.

3

ACTION: We urge the ACOE to more accurately and completely address how water releases for fish management purposes mesh with VARQ and affect flows.

Montana Fish Wildlife & Parks views the immediate implementation of VARQ flood control at Hungry Horse and Libby Dams as an essential management action necessary for conservation of federally endangered white sturgeon and federally threatened bull trout. We believe that model simulations presented and the explanation in the draft EA may be misleading and present an alarming and inaccurate assessment of the consequences of VARQ implementation. We firmly believe that the models used in the draft analysis significantly overestimate the frequency, magnitude and duration of floods and spills downstream of Libby Dam resulting from VARQ implementation. We further believe that a more detailed and complete explanation of the benefits of operator's real-time adaptive management decision-making and how the affects of water releases for fish and power operations influence resultant flows, could substantially improve understanding about the likely affects on downstream water conditions.

We look forward to working with your staff as we press forward with this process.

Sincerely,

Larry G. Peterman  
Chief of Field Operations

## ***Response to Montana Department of Fish, Wildlife, and Parks Comments***

CENWS-PM-PL-ER

23 Dec 2002

Draft EA for Interim Implementation of Alternative Flood Control and Fish Operations  
Responses to Montana Fish, Wildlife and Parks Comments, 12 Dec 2002

1. All the models conducted for this EA were for the Columbia River System, and not limited to local modeling of individual basins. We used the Kuehl-Moffit forecasting procedure instead of the Wortman-Morrow procedure because the Kuehl-Moffit forecasts have been calibrated and used for system flood control modeling. We are revising the EA to clarify the use of forecast procedure in the modeling, and to provide an example of the impact forecast choice can have on the model results (Section 5.1.2.1.1).
2. The modeling performed for this EA indicates relative differences between alternatives but does not necessarily predict actual flow levels for specific events. We believe there is some increased flood risk to Bonners Ferry and Kootenay Lake for VARQ FC relative to Standard FC; however, the Corps believes real-time adaptive management will enable the Corps to manage this risk. We are revising the EA to reflect that modeling is only one tool used to evaluate flood control alternatives, and to more clearly show the benefit of real-time adaptive management operations on flood control (Section 5.1.2.1.1). The same applies to spill risk.
3. Releases for fish and power are indeed factors that can help reduce the risk of spill and flooding, as the draft EA attempted to point out. Also, although 35,000 cfs was part of the modeling, the modeling studies were started before the June-July spill test results were available. Using interpolation on model results, a maximum release of 26,000 cfs was assumed in the draft EA based on the results of the 2002 spill test at Libby, which indicated only about 1,000 cfs could be spilled without exceeding the Montana water quality limit of 110% gas saturation as measured a short distance below the spillway. As stated above, we are revising the EA to better reflect actual operations and the use of modelling as one tool.
4. Comment noted. Please refer to the response to comment 2.

# National Marine Fisheries Service Comment Letter



UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
NATIONAL MARINE FISHERIES SERVICE  
525 NE Oregon Street  
PORTLAND, OREGON 97232-2737

F/NWR5

December 12, 2002

Evan Lewis  
US Army Corps of Engineers  
PO Box 3755  
Seattle, WA 98124-3755

RE: Comments on the Draft Environmental Assessment for Interim Implementation of Alternative Flood Control and Fish Flows at Libby and Hungry Horse Dams in Montana.

Dear Mr. Lewis:

Thank you for the opportunity to comment on the draft Environmental Assessment (EA) for Interim Implementation of Alternative Flood Control and Fish Flows at Libby and Hungry Horse Dams in Montana. Our comments follow.

As you are aware, the National Marine Fisheries Service (NOAA Fisheries) has directed the U.S. Army Corps of Engineers (Corps) to implement VARQ at Libby (Action #22 in the Federal Columbia River Power System 2000 Biological Opinion) and supports interim implementation of VARQ for the benefit of anadromous salmon listed under the Endangered Species Act. Therefore, we thank the Corps for the effort and steps being taken via this EA to move forward on this issue.

We are concerned that the hydrologic analyses show worst case effects and are not representative of actual, real-time operations, as mentioned in Section 5.1.2.1.2, pg. 44 of the EA. Actual operations can be managed in-season to exceed minimum fish flow requirements, discharge fish flows for longer periods of time, and release water for power production, thereby reducing higher flows later in the runoff season. Thus, the analyses show an overestimate of the frequency, magnitude, and duration of high flows in the Kootenai River and other downstream effects (e.g., elevation of Kootenay Lake).

In addition, using the less conservative Kuehl-Moffitt forecasts in the hydrologic analysis also results in lesser winter drafts of Libby, showing an end result of higher spring flows. For example, use of the Kuehl-Moffitt forecasts instead of Wortman-Morrow forecasts results in a modeled higher Libby elevation of approximately 55 feet in March 1948. The end result of this higher lake elevation, shown in Figures 17 of the EA, is modeled flows of 54 kcfs at Libby Dam. Instead, use of the Wortman-Morrow forecasts in the model would have drafted Libby in January and February of 1948, resulting in much lower spring flows and no downstream flooding. Such



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modeled reservoir management is inconsistent with the use of the Wortman-Morrow forecasts in real-time management; using the Wortman-Morrow forecasts would have been more representative of actual operations.

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Another concern we have is the limited information provided in the Executive Summary. The Summary has certain conclusory statements that leave the reader with an impression, but no idea of the extent, of the effect of the VARQ alternative. Statements such as "modelling...indicate that VARQ FC would increase the river stages at Bonners Ferry for all river stages..." fail to describe the magnitude or the frequency of the increase. Figure 14 shows that a river stage of 1,764 feet is estimated to occur approximately 4% more frequently and stages greater than 1,764 feet occur three times under standard flood control and four times with VARQ in a 61-year water record. Another example is that "VARQ...does not appear to increase the probability of meeting flow targets specified by the Nation Marine Fisheries Service." Page 82 shows that VARQ brings the flows for salmon closer to the objectives, increasing flows by up to 10,000 cfs in August at McNary Dam. Decreasing the magnitude of flow deficits is a clear biological benefit of VARQ.

The Executive Summary statement that VARQ may assist in burbot spawning also stops short of full disclosure. Implementation of VARQ is expected to increase the probability of achieving low January flows for burbot spawning from 21% to 51% of the years, an increase of almost 2½ times. Also, the statement that "VARQ FC and standard FC are expected to have similar effects on resident fish in Lake Roosevelt" could be misconstrued to mean an increase in overall fish entrainment as indicated in the previous sentence.

The lack of completeness in the Executive Summary can easily allow for misunderstandings and misinterpretations by the public on this issue, when there are substantial benefits to be gained for resident and anadromous fish resources from the implementation of VARQ. We are concerned that interested parties may choose to read only the Executive Summary and may form strongly held opinions based only on the unqualified information presented. The Executive Summary should provide a clear, concise summary of the effects and benefits of the VARQ alternative.

In conclusion, we recommend:

- + Using the Wortman-Morrow runoff forecasts in the analysis.
- + Revising the Executive Summary to present sufficient quantitative information for readers to better understand the magnitude and frequency of likely outcomes as a result of VARQ implementation.
- + A discussion of the most probable effects of the VARQ alternative, taking into consideration the worst-case analysis in this EA and the ability to manage Libby more conservatively.

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- A conclusion resulting in a Finding Of No Significant Impact.
- Interim implementation of VARQ at Libby Dam in 2003 and 2004 during completion of other National Environmental Policy Act requirements.

If you have any questions regarding these comments, please contact Chris Ross of my staff at 503-230-5416.

Sincerely,



Brian J. Brown  
Assistant Regional Administrator  
Hydro Program

## ***Response to National Marine Fisheries Service Comments***

CENWS-PM-PL-ER

23 Dec 2002

Draft EA for Interim Implementation of Alternative Flood Control and Fish Operations Responses to National Marine Fisheries Service Comments, 12 Dec 2002

1. We believe there is some increased flood risk to Bonners Ferry and Kootenay Lake for VARQ FC relative to Standard FC; however, the Corps believes real-time adaptive management will enable the Corps to manage this risk. We are revising the EA to reflect that modeling is only one tool used to evaluate flood control alternatives, and to more clearly show the benefit of real-time adaptive management operations on flood control (Section 5.1.2.1.1).
2. All the models conducted for this EA were for the Columbia River System, and not limited to local modeling of individual basins. We used the Kuehl-Moffit forecasting procedure instead of the Wortman-Morrow procedure because the Kuehl-Moffit forecasts have been calibrated and used for system flood control modeling. We are revising the EA to clarify the use of forecast procedure in the modeling, and to provide an example of the impact forecast choice can have on the model results (Section 5.1.2.1.1).
3. Comment noted. We are revising the EA to clarify the executive summary and to direct the reader to the pertinent sections in the EA that contain more details about each summarized effect.
4. Commenter's conclusions can be implemented in part, as stated above.

# National Organization to Save Flathead Lake Comment Letter #1

DEC-14-2002 06:00 PM JAMES 661 799 7404 P.02

**NATIONAL ORGANIZATION TO SAVE FLATHEAD LAKE**  
PO Box 1834 • Bigfork, Montana 59911 • (406) 881-2300

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 Arthur Lieberman, Attorney  
 Chuck Mowbray, Director, Glacier Road, Inc.  
 Paul Williams, Editor, Northern Trust Company

December 13, 2002

**Evan Lewis**  
Environmental Resources Section  
U.S. Army Corp of Engineers  
P.O. Box 3755  
Seattle, WA 98124-3755

RE: Comments on the November, 2002 Draft EA for the Interim Implementation of Alternative Flood Control and Fish Flows at Libby and Hungry Horse Dams in Montana.

VIA: FAX with hard copy to follow via US mail

Dear Mr. Lewis:

Thank you for the opportunity to provide comment on the November 2002 Draft EA for the Interim Implementation of Alternative Flood Control and Fish Flows at Libby and Hungry Horse Dams in Montana.

I offer these comments on behalf of the hundreds of property and business owners that comprise the membership of the National Organization to Save Flathead Lake (NOSFL).

Over the past several years, this organization together with several associated groups, local and state governments, and countless other interested parties, have developed serious concerns about the management and operation of the federal storage waters in Montana.

You may be aware that a combination of circumstances resulted in profound and costly shortages of water in the Flathead drainage during the summer of 2000. This incident, which resulted in an unusably low summer water level at Flathead Lake, cost Northwestern Montana many millions of dollars. The social, economic and investment implications of that disaster continue to ripple throughout Northwestern Montana communities.

1

DEC-14-2002 06:100 PM JAMES 661 799 7404 P.03

Our organization has neither professional nor technical capabilities. We do, however, attempt to maintain an interest in, and where appropriate, participate in the many federal and state processes which impact on the operations of headwater reservoirs in Montana. More specifically, we become involved in any action that could impact the water levels and flows of Flathead Lake which would result in ramifications to its social, economic and ecological environment.

The National Organization to Save Flathead Lake has two goals:

- 1) A full-pool summer lake level of 2893'
- 2) A safe winter lake level that avoids potential ice damage to public and private property.

In this instance, we write to support the adoption of the VARQ flood control proposals at Libby and Hungry Horse dams. It is our belief that this operating regimen, as outlined in the Draft EA, will further the interests of federally protected fish in both the Flathead and Kootenai drainages and provide the basis for more enlightened management of these reservoirs while still accomplishing the Corps' primary flood control objectives. This, in turn, could lead to more discretion on the part of the operating agencies to undertake measures that would preclude or reduce the probability of year 2000 recurrences.

We are pleased to see the Corps' claim that the implementation of VarQ at Hungry Horse will improve the probability of refill at Flathead Lake, however, nowhere within the Draft EA, as currently presented, does it explain how that can, or will be accomplished during drought conditions, nor how the regimen will work in concert with the Corps' proposed new rule curve for Flathead Lake. We are willing to accept the assertion as presented, that VarQ will help the probability of refill for Flathead Lake, but request that this claim be clarified more fully. We further encourage COE to always give equal and due consideration to the social, economic and environmental impacts of Flathead Lake in any proposed changes to the system.

Additionally, we continue to plead for a greater coordination between Hungry Horse and Kerr Dams and their respective governing agencies during low water times.

In essence we think the proposal represents a good, common sense improvement over the status quo and commend the COE for undertaking this work.

Sincerely,  
  
 Carole James, President  
 National Organization to Save Flathead Lake

2

CC:  
Governor Judy Martz  
Senator Max Baucus  
Senator Conrad Burns  
Representative Denny Rehberg

## **Response to National Organization to Save Flathead Lake #1 Comments**

CENWS-PM-PL-ER

23 Dec 2002

Draft EA for Interim Implementation of Alternative Flood Control and Fish Operations Responses to Nat'l Organization to Save Flathead Lake Comments, 13 Dec 2002

In general, Flathead Lake issues as they relate to VARQ are addressed in the Bureau of Reclamation's Voluntary Environmental Assessment and FONSI 02-02: Interim Operation of the VARQ Flood Control Plan at Hungry Horse Dam, MT" Pacific Northwest Region, Boise, Idaho at [www.pn.usbr.gov/project/salmon/pdf/VARQFONSI.pdf](http://www.pn.usbr.gov/project/salmon/pdf/VARQFONSI.pdf).

1. Comments noted.
2. During extreme drought, VARQ at Hungry Horse would not improve probability of refill of Flathead Lake. However; during marginal years of about 70% to 80% of average water supply, VARQ can potentially improve refill probabilities at Flathead Lake by increasing Hungry Horse releases in May and June.
3. The coordination opportunities between Hungry Horse and Flathead Lake are being addressed in the Kerr Drought Management Plan (DMP) EIS which is currently being prepared by the Bureau of Indian Affairs (BIA).

# National Organization to Save Flathead Lake Comment Letter #2

DEC-15-2002 11:01 PM JAMES

661 799 7404

P. 02

## NATIONAL ORGANIZATION TO SAVE FLATHEAD LAKE PO Box 1834 • Bigfork, Montana 59911 • (406) 891-2300

December 15, 2002

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Evan Lewis  
Environmental Resources Section  
U.S. Army Corp of Engineers  
P.O. Box 3755  
Seattle, WA 98124-3755

RE: Comments on the November, 2002 Draft EA for the Interim Implementation of Alternative Flood Control and Fish Flows at Libby and Hungry Horse Dams in Montana.

### Advisors

Ray Swandrew,  
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Goldman Sachs  
Arthur Lieberman,  
Attorney  
Chuck Maxwell,  
Dewberry  
Glover Park, Inc.  
Paul Williams,  
Retired, Northern  
Food Company

VIA: FAX with hard copy to follow via US mail

Dear Mr. Lewis:

On December 13, 2002, on behalf of the National Organization to Save Flathead Lake, I submitted comment on Draft EA for the Interim Implementation of Alternative Flood Control and Fish Flows at Libby and Hungry Horse Dams in Montana. As an afterthought to those previous comments, I would add that we are concerned that the EA, as presently written, may intensify concerns about flooding in the Idaho panhandle, particularly in the Bonner's Ferry area. In conversations with Montana's interested agencies on this matter it appears that those concerns are already exaggerated and may be aggravated by the statistical modeling and narrative on this topic in the DRAFT EA.

Sincerely,

  
Carole James, President  
National Organization to Save Flathead Lake

## ***Response to National Organization to Save Flathead Lake #2 Comments***

CENWS-PM-PL-ER

23 Dec 2002

Draft EA for Interim Implementation of Alternative Flood Control and Fish Operations  
Responses to Nat'l Organization to Save Flathead Lake Comments, 15 Dec 2002

1. The modeling performed for this EA indicates relative differences between alternatives but does not necessarily predict actual flow levels for specific events. We believe there is some increased flood risk to Bonners Ferry and Kootenay Lake for VARQ FC relative to Standard FC; however, the Corps believes real-time adaptive management will enable the Corps to manage this risk. We are revising the EA to reflect that modeling is only one tool used to evaluate flood control alternatives, and to more clearly show the benefit of real-time adaptive management operations on flood control (Section 5.1.2.1.1).

# David Rockwell Comment Letter

From: David Rockwell [dxn3365@blackfoot.net]  
Sent: Friday, December 13, 2002 12:57 PM  
To: UCEIS NWS  
Subject: Comments on the draft EA for the Interim Implementation VARQ at Libby Dam

Dear Mr. Evan Lewis:

Please accept the following comments on the Draft EA for the Interim Implementation of alternative Flood Control Procedures at Libby and Hungry Horse Dams in Montana.

1 I write in support of the immediate implementation of VARQ flood control in order to reduce further harm to fish downstream from the dam, especially listed species. The Corps analysis misrepresents the consequences of implementing VARQ on the river and appears to be a blatant attempt to frighten and confuse. The EA utilizes out-of-date and inaccurate forecasting procedures when it applies Kuehl-Moffitt forecast. Why did you not use the Wortman-Morrow forecasting procedure? And why did you fail to account for real-time adaptive management decision making by dam operators?

2 These deficiencies and others have resulted in an EA so biased that it appears the Corps of Engineers is using the NEPA exercise solely to frighten and confuse downstream residents, which is an abuse of NEPA. Not only is it very possible that this document will result in further harm to valued fisheries resources already at risk, but it will (and already has) caused long-term damage to the US Army Corps of Engineers' credibility among federal and state agencies and the general public, something your agency can ill afford. I hope the final EA corrects the misrepresentations in the draft. Indeed, a sincere apology is in order.

Thank you for the opportunity to comment.

--

David Rockwell  
PO Box 94  
Dixon, MT 59831

dxn3365@blackfoot.net

406.246.3646

## ***Response to David Rockwell Comments***

CENWS-PM-PL-ER

30 Dec 2002

Draft EA for Interim Implementation of Alternative Flood Control and Fish Operations  
Responses to David Rockwell Comments, 13 Dec 2002

1. Comment noted.
2. All the models conducted for this EA were for the Columbia River System, and not limited to local modeling of individual basins. We used the Kuehl-Moffit forecasting procedure instead of the Wortman-Morrow procedure because the Kuehl-Moffit forecasts have been calibrated and used for system flood control modeling. We are revising the EA to clarify the use of forecast procedure in the modeling, and to provide an example of the impact forecast choice can have on the model results (Section 5.1.2.1.1). The modeling performed for this EA indicates relative differences between alternatives but does not necessarily predict actual flow levels for specific events. We believe there is some increased flood risk to Bonners Ferry and Kootenay Lake for VARQ FC relative to Standard FC; however, the Corps believes real-time adaptive management will enable the Corps to manage this risk. We are revising the EA to reflect that modeling is only one tool used to evaluate flood control alternatives, and to more clearly show the benefit of real-time adaptive management operations on flood control (Section 5.1.2.1.1).

## Clark Seaborn Comment Letter

From: Clark Seaborn [seaborn@sc.bidcon.net]  
Sent: Tuesday, December 10, 2002 1:46 PM  
To: Lewis, Evan R NWS  
Subject: Re: Upper Columbia Alternative Flood Control

Dear Mr Lewis-

1

Thank you for sending the VARQ FC document for my reading and commentary. As a Canadian who was promised recreational facilities from the construction of the Koochanusa Reservoir, I have some considerable interest in the deterioration of these facilities since the implementation of sturgeon and salmon i augmentation some 10 years ago. As you are aware the terrain in Canada is much flatter, and the effects of drawdown are much more predominant.

2

I am pleased that the procedures under VARQ FC will enhance the recreation possibilities of Koochanusa as evidenced by the 2002 season, however I wonder why the August salmon drawdown must be accomplished only in August- could it for instance be extended that the lake level of 2439 ' be met on September 15 rather than August 31? As it is, the primary summer recreation use of the lake extends from mid July frequently only to late August, and the 2439 level prior to the September Labor day weekend really causes a substantial shortening of this summer season.

3

Your document seems to support my wishes: -page 34 indicates "...commercial operations along Lake Koochanusa are dependent on the reservoir filling to within 10' of full pool..." page 36 "...excessive drawdown during the recreation season has a negative impact on recreation..." other pages indicate that lessened drawdown will improve the air quality on the dusty flatlands, will provide better fish production in the reservoir and a more natural river flow downstream in August.

I thank you for soliciting my comments.

Sincerely

Clark G. Seaborn  
thanks Clark Seaborn

## ***Response to Clark Seaborn Comments***

CENWS-PM-PL-ER

20 Dec 2002

Draft EA for Interim Implementation of Alternative Flood Control and Fish Operations Responses to Clark Seaborn Comments, 10 Dec 2002

1. Comment noted.
2. Our current operation to provide salmon flows places a priority on releasing water in July and August from Libby for downstream flow augmentation. This is consistent with Action 19 of the Reasonable and Prudent Alternative of the NMFS 2000 BiOp. Actual operations may vary and are discussed in the Technical Management Team. Releases of water from upstream storage reservoirs in the Snake and Columbia Basins were established to increase flows in these rivers to assist migrating juvenile fall chinook during the summer when flows are generally low. The timing of the releases is based on fish timing, most of the fish passing through the hydrosystem by the end of August. The water is released in July and August, and is released as a constant flow as much as possible, contingent on inflows from other parts of the Columbia Basin. Efforts are made annually to minimize the local effects of reservoir drafts. Exchanges or “swaps” of water between Canadian and U.S. storage reservoirs have been implemented in recent years to leave more water in Libby, with lower discharges during the summer, while still improving migration conditions for salmon. Comment regarding the length of the recreation season is noted and will be reflected in the final EA, Sections 3.4.4.1 and 5.4.4.1.
3. Comments noted.

# U.S. Fish and Wildlife Service Comment Letter

*Upper Columbia Fish and Wildlife Office  
11103 E. Montgomery Drive  
Spokane, WA 99206*

December 13, 2002

Mr Evan Lewis  
U.S. Army Corps of Engineers  
P. O. Box 3755  
Seattle, WA 98124-3755

Dear Mr. Lewis:

Re: Comments on the draft Environmental Assessment for the Interim Implementation of Alternative Flood Control Procedures at Libby and Hungry Horse Dams in Montana

We appreciate the opportunity to comment on the November 2002 draft Environmental Assessment for the Interim Implementation of Alternative Flood Control and Fish Flows at Libby and Hungry Horse Dams in Montana (EA). As you are aware, the Fish and Wildlife Service (Service) has recommended that the U.S. Army Corps of Engineers (Corps) implement VarQ flood control procedures at Libby Dam Montana, by reasonable and prudent alternative 8.1.b.in our December 2000 jeopardy Biological Opinion on Operations of the Federal Columbia River Power System (FCRPS BiOp). Your effort to consider interim implementation through this EA is appreciated since this may further reduce harm to several listed fishes in the Columbia River basin.

## **General comments**

Based on our review of the EA, the Service believes the Corps has presented only the “worst case” scenario rather than a range of scenarios, or the most probable scenario which may result from implementation of VarQ. The criteria used in the hydrologic studies, which were in turn used as a foundation for this EA, have resulted in an overestimate of the frequency, magnitude and duration of spills from Libby Dam and possible resulting high water events in the Kootenai River.

We recommend that an EA supplement describing the most probable set of effects, drawn from the prior Corps’ report on VarQ (USACE 1999) be appended to your finding of no significant impact (FONSI) prior to implementation of VarQ next month. This would better represent the range of, and probable scenarios which would result from implementation of VarQ.

## **Specific comments**

2 This EA presents a scenario where if 1948 runoff conditions were to occur again, there would be high water in the Kootenai River at Bonners Ferry, Idaho, peaking at stage 1770 feet (Figure 18 of the EA). This is the control threshold where overbank flooding would occur in the absence of the levees. The subject EA also suggests that, with these criteria and the 1948 runoff conditions, there would be a total peak release from Libby Dam of about 54,000 cfs. Of this total release, 3 about 27,000 to 29,000 cfs would come as a forced spill (Figure 17). Based on the information presented below, the Service does not believe this is a likely outcome.

On page 44 of the subject EA, section 5.1.2.1.2, it is acknowledged that the computer simulation modeling done as part of this analysis “are not representative of what would actually occur during real-time operation” of Libby Dam. The modeling that was used results in overestimates of spill and flood related impacts. These overestimates of effects result from three types of faulty modeling assumptions and omissions relied upon to develop the hydrologic studies, which are not appended to the EA. In turn, these hydrologic reports were the foundation used to define the “worst case” effects presented in the subject EA:

1. On page 44 it is acknowledged that the volume runoff forecasts now used at Libby Dam operations are more conservative than those used in this modeling exercise. These hydrologic studies relied upon the Kuehl-Moffitt forecasting procedures rather than the more conservative Wortman-Morrow procedures, which has been used for actual Libby Dam operations since 1983. An example of the significance of changing forecasting procedures is best illustrated by looking at the reconstructed events of water year 1948. With the Wortman-Morrow forecasting procedures there would have been about an additional 55 feet, or near 2 million acre- feet of available storage space, in the Libby Project in mid-March over that forecast under the Kuehl-Moffitt procedure (Figures 22-27 of the draft Local Effects hydrologic report).

4 Based on the currently used Wortman- Morrow forecasting procedure, and including fish flows, and in-season operator adaptive management, there would have been a maximum release from Libby Dam of only 29,900 cfs should the 1948 runoff scenario be repeated with VarQ flood control procedures in place ( i.e. spill in the 2,000 to 4,000 range depending on head). There would have been no flooding in the Libby or Bonners Ferry areas (USACE 1999). In contrast with findings in the Corps 1999 report, Figures 17 and 18 in this EA”worst case” scenario show exaggerated flood impacts, a forced spill with a total release of 54,000 cfs from Libby Dam, and a peak stage of 1770 feet at Bonners Ferry.

Based on the 1999 report, VarQ is expected to neither increase or decrease the incidence of spill at Libby Dam in excess of 5,000 cfs ( pages 27-30, section 2, USACE 1999). VarQ was analyzed with Wortman-Morrow volume runoff forecasting and sturgeon flows for the entire 1948-1978 period, and three such spills were predicted. The historic incidence of spills over 5,000 cfs is approximately 10 percent, or three spills in a 30 year period of analysis. Thus, there should be no net change in the frequency of spills over 5,000 cfs at Libby Dam with VarQ.

2. It is acknowledged on page 44 of the subject EA that the hydrologic studies also fail to account for the very significant contribution of real time adaptive management by the Dam operators in avoiding forced spills by evacuating large volumes of water in response to ever changing runoff estimates. For example, during the high runoff events of 1996 and 1997, operators of the project released large quantities of water during the winter and spring (in excess of a million acre feet ) in addition to the sturgeon releases. In many instances Corps operators are able to create additional storage volume and avert spills through adaptive management in response to bi-weekly volume runoff forecasting. This significant contribution to averting forced spill should be quantified, and used to more accurately present the effects of VarQ.

3. Also on page 44 it is acknowledged that the modeled scenarios used to develop this EA failed to incorporate other system operations such as fish flows and power needs, which further evacuate the Libby Project, increase storage, and reduce downstream impacts. Sturgeon and bull trout releases appear not to have been modeled as minimums, as they are recommended in our FCRPS BiOp. These tiered fish flows may be extended or exceeded at any time to provide additional storage needed for flood control. Similarly, power operations to address cold snaps were not considered in this analysis. As a consequence of not incorporating these operations in the evaluation of VarQ implementation, this interim EA compounds the extent of this worst case scenario of local impacts. Both types of releases need be considered to present a most likely scenario of downstream impacts.

4

In the Executive Summary it is suggested that implementation of VarQ may assist burbot spawning in the Kootenai River through lower January flows. We believe that implementation of VarQ will greatly assist burbot migration and spawning in January by providing low flows in one out of two years. In contrast, with standard flood control procedures, low flow conditions conducive to burbot migration and spawning in January would occur during only one out of five years.

5

We are concerned that, by presenting a worst case hydrologic scenario to describe the effects of implementation of VarQ at Libby Dam, implied impacts in Kootenay Lake stage, Lake Roosevelt archeological sites, Birchbank, and other areas may also be overestimated. Reassessment of effects in these areas may also be needed to supplement the finding of no significant impact in the EA.

6

### Conclusions

The criteria and assumptions used in the modeling and hydrologic reports leading to this EA presents a worst case scenario which is now causing high levels of concern among local citizens in the Bonners Ferry area and other reviewers, and has resulted in requests to extend the comment period on the document. Further delays in completing the National Environmental Policy Act (NEPA) requirements could result in failure to implement VarQ for another year or more, and in perpetuation of adverse impacts to, and take of listed species.

7

7

As noted above, to remedy this, we recommend that an EA supplement further describing the most probable set of effects drawn from the prior Corps' report (USACE 1999) be appended to your FONSI prior to implementation of VarQ next month.

If we may provide any additional information on our comments and recommendations, please contact Bob Hallock of my staff at (509) 891-6839.

Sincerely,

Susan B. Martin /s  
Supervisor

Reference Cited:

U.S. Army Corps of Engineers. 1999. Work to date on the Development of the VARQ Flood Control Operation at Libby Dam and Hungry Horse Dam. Section 2, 84 pp.

## ***Response to U.S. Fish and Wildlife Service Comments***

CENWS-PM-PL-ER

23 Dec 2002

Draft EA for Interim Implementation of Alternative Flood Control and Fish Operations  
Responses to US Fish and Wildlife Service Comments, 13 Dec 2002

1. The modeling performed for this EA indicates relative differences between alternatives but does not necessarily predict actual flow levels for specific events. We believe there is some increased flood risk to Bonners Ferry and Kootenay Lake for VARQ FC relative to Standard FC; however, the Corps believes real-time adaptive management will enable the Corps to manage this risk. We are revising the EA to reflect that modeling is only one tool used to evaluate flood control alternatives, and to more clearly show the benefit of real-time adaptive management operations on flood control (Section 5.1.2.1.1).
2. It is important to remember that 1948 was an anomalous year, as well as that modeling results are not an absolute predictor of what may happen in actual operation. Again, we are revising the EA to reflect that modeling is only one tool used to evaluate flood control alternatives, and to more clearly show the benefit of real-time adaptive management operations on flood control, as well as on spill.
3. All the models conducted for this EA were for the Columbia River System, and not limited to local modeling of individual basins. We used the Kuehl-Moffit forecasting procedure instead of the Wortman-Morrow procedure because the Kuehl-Moffit forecasts have been calibrated and used for system flood control modeling. We are revising the EA to clarify the use of forecast procedure in the modeling, and to provide an example of the impact forecast choice can have on the model results (Section 5.1.2.1.1). With regard to spill, the 1999 evaluation assumed a threshold spill level of 5,000 cfs for avoiding dissolved gas problems; however, the 2002 spill test at Libby Dam indicated that spill of 1-2,000 cfs was the maximum to avoid exceeding the Montana dissolved gas limit of 110% saturation. Thus, spill constraints in the current evaluation must be more stringent than previously.
4. The Corps believes that VARQ flood control operations will complement a low flow operation that has been requested for burbot in winter, and thus would likely provide a net benefit to burbot. If the burbot are listed under ESA, the consultation process will address the burbot needs in coordination with the other listed fish species implicated by recommended burbot operations.
5. See the response to comment 1.
6. See the response to comment 1.
7. See responses to above comments.

# Washington Department of Ecology Comment Letter

From: Maynard, Chris [cmay461@ECY.WA.GOV]  
Sent: Thursday, December 12, 2002 5:11 PM  
To: Lewis, Evan R NWS  
Cc: Parodi, Jean; Jim Ruff  
Subject: Comments on Vary Q for Upper Columbia  
Evan Lewis,

I have a few comments on the Upper Columbia Alternative Flood Control and Fish Operations EA . This is from the perspective of my water quality agency in Washington State and only deals with one water quality parameter: supersaturated gas.

1

First, we are generally supportive of efforts on the Columbia River to improve outmigration for juvenile salmonids. We have supported this effort by relaxing our water quality standard for the Columbia and Snake from 110 percent instantaneous measurement of total dissolved gas to 120% as measured at fixed locations in the tailraces below the dams and based on a twelve hour average high. This allows more water to pass over the dams and thus less fish are harmed by going through the turbines.

2

However, and secondly, we are serious about keeping spill on the Columbia within those higher adjusted standards. So if the alternative flood control measures mean that more water will be spilled at Columbia Dams that forces the gas above 120 percent, water quality standards would be exceeded. This is one concern we have with this Var Q proposal and it needs to be addressed in the environmental impact statement.

Third, in all other rivers in Washington, the gas standard remains 110%. We have two dams on the Pend Orielle River that produce large amounts of gas. These dam owners are working on ways to reduce gas generation. Their Clean Water Act certification that they will meet water quality standards and their new licenses from the Federal Energy Regulatory Commission depends on the success of their efforts to reduce gas. Alternative flood control flows from Hungry Horse Dam may make it more difficult for them to attain water quality standards. The environmental impact statement needs to address this also.

If however, the peak flows on the Pend Orielle and the Columbia were to be less due to Var Q during the floods up to the 7 consecutive day highest flows expected once in every 10 years (7Q-10), less dissolved gas would be expected and some environmental improvement in this regard would be realized and should be analyzed in the EIS.

You mention that gas impacts will be studied more thoroughly in the EIS. Please take into account the above comments during your evaluation. Thank you for the opportunity to comment. Please call me if you have any questions.

Chris Maynard  
Water Quality Program  
Washington Department of Ecology

360 407-6484

## ***Response to Washington Department of Ecology Comments***

CENWS-PM-PL-ER

23 Dec 2002

Draft EA for Interim Implementation of Alternative Flood Control and Fish Operations Responses to Washington Dept. of Ecology Comments, 12 Dec 2002

1. Comment noted.
2. Based on the hydrology studies done to date, flows in the Columbia River downstream of the international border appear to differ only slightly between VARQ FC and Standard FC. Spill timing and magnitude would likely also be only slightly different. However, we do not have specific information at present on possible increases in spill or dissolved gas levels at dams in Washington or British Columbia that may contribute to high gas levels in Washington. We will evaluate the issue of spill and dissolved gas levels, as appropriate, for the environmental impact statement currently being prepared for long-term implementation of VARQ. Reclamation found no significant changes to gas production based on flow analyses in its Voluntary EA. For current information on potential impacts to the Pend Oreille from Hungry Horse operations, the commenter is referred to the U.S. Bureau of Reclamation's "Voluntary Environmental Assessment, FONSI 02-02; Interim operation of the VARQ flood control plan at Hungry Horse Dam, Mt." Pacific Northwest Region, Boise, Idaho at [www.pn.usbr.gov/project/salmon/pdf/VARQFONSI.pdf](http://www.pn.usbr.gov/project/salmon/pdf/VARQFONSI.pdf).