

Upper Columbia

UPDATE

THE NEWSLETTER OF THE UPPER COLUMBIA ALTERNATIVE FLOOD CONTROL AND FISH OPERATIONS ENVIRONMENTAL IMPACT STATEMENT (EIS)

SPRING 2003

Kootenai River valley seepage study

Since the early 1990s, the Corps has released higher flows from Libby Dam during the spring to benefit Kootenai River white sturgeon spawning and survival. To date, these "sturgeon flows" have been limited to the Libby Dam powerhouse capacity of 25,000 to 28,000 cfs. With their 2000 Biological Opinion, the U.S. Fish and Wildlife Service recommended that the Corps take action to increase sturgeon flows from Libby Dam to 35,000 cfs by 2007.

The Upper Columbia Alternative Flood Control and Fish Flows EIS (UCEIS) will evaluate both the VARQ flood control strategy and the potential effects of sturgeon flows of 25,000 cfs and 35,000 cfs. Although the UCEIS will address the effects of the flows themselves, releasing substantially more flow than Libby Dam's powerhouse capacity may require physical dam modifications such as alteration of the spillway or installation of additional turbines – potential future actions which the Corps is evaluating separate from the UCEIS.

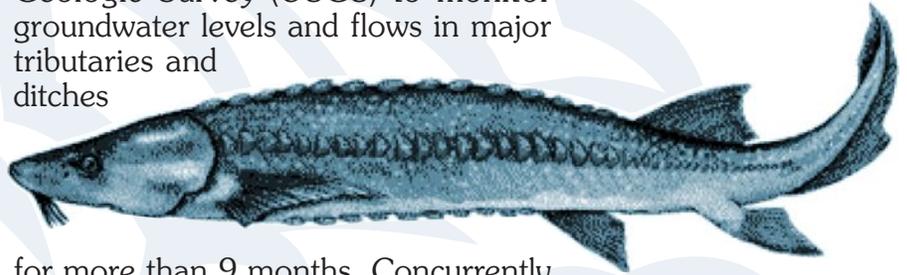
Government officials, citizens, and farmers in Boundary County, Idaho are concerned that sturgeon flows have led to elevated groundwater levels or seepage and affected crop production in the Kootenai Flats, the river reach between Bonners Ferry and the international border. As part of the UCEIS, the Corps is conducting a comprehensive study evaluating how different river stages might affect seepage and agriculture in the Kootenai Flats. Although past studies by the Corps estimated crop impacts under certain circumstances, they did not examine the full variety of possible flow scenarios that are being evaluated in the UCEIS.

In 2002, the Corps engaged the U.S. Geologic Survey (USGS) to monitor groundwater levels and flows in major tributaries and ditches

for more than 9 months. Concurrently, the Corps is assembling a computer model of the valley to simulate groundwater levels. Using the USGS monitoring data, historical records of groundwater levels, and information on geology and soils of the Kootenai Flats, the groundwater model will estimate groundwater conditions under different river flows and stages during different times of the year.

Throughout the spring and early summer of 2003, Corps contractors will work with local officials and farmers to document seepage effect on farming operations and crop yields. This effort includes both economics and agronomy investigations. Combined with the simulations of seepage under different flow conditions, the knowledge of the effects of seepage on agricultural activities will allow us to assess the effects of different sturgeon flows on crops, agricultural production, and the economic return to Kootenai Flats farmers.

The Corps expects to have preliminary results from the seepage study by the end of 2003. These results, together with other ongoing studies, will be incorporated into the UCEIS to quantify potential impacts of different Libby Dam operations on the Kootenai River and the Columbia River system.



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ABOUT THE UPDATE

Upper Columbia Update is intended to inform the public about the progress of, and topics of interest pertaining to, the Upper Columbia Alternative Flood Control and Fish Operations Environmental Impact Statement, and to facilitate public participation during the course of the project.

UPPER COLUMBIA WATER SUPPLY FORECAST

What does VARQ implementation mean for 2003 operations?



DEFINITIONS IN THIS ISSUE

Agronomy is a branch of agriculture dealing with field-crop production and soil management.

Best Available Science (BAS) is a term used to define guidelines for the use of scientific and technical information in a variety of natural resource related fields. Generally, the term relates to whether the information at question follows a valid scientific process (peer review, methods, logical conclusions and reasonable inferences, quantitative analysis, appropriate context, and references) that produces reliable information.

First Nation refers to an individual or organization (such as a band or tribal organization) that self-identifies as being descended from aboriginal Indian people in Canada. It is not a term of legal status. "Status Indian" is the Canadian legal term for those peoples.

Both Libby and Hungry Horse typically reach maximum flood control draft near May 1. However, due to a low water supply forecast and less than average winter precipitation, minimum flow requirements drafted both projects below both their standard and VARQ flood control target elevations. As the reservoirs were below flood control required elevations when the spring freshet started, they began to refill. Libby started gaining elevation on March 31 and Hungry Horse on March 15. Neither project refilled to the May 1 flood control target elevation for VARQ. Libby was below both standard and VARQ flood control elevation, while Hungry Horse was between standard and VARQ flood control targets.

Hungry Horse: On May 1, Hungry Horse was about 13.5 feet higher than it would have been under standard flood control (roughly halfway between the Standard and VARQ flood control target elevations). Releases during May were also higher than they would have been for Standard. Due to minimum flow requirements, Hungry Horse was below the May 1 target elevation on March 15 when it started refilling. Outflows were reduced to project minimums to allow refill (averaged 720 cfs through April). Under Standard flood control, Hungry Horse would have released more water the last week of March through April (about 5,980 cfs) to maintain May 1 flood control elevation. Averaged releases from Hungry Horse during May were a little over 4,600 cfs, with Standard flood control Hungry Horse would have been reduced to minimum flows of 687 cfs to

refill. Essentially, the VARQ operation this year moved outflows from April into May which benefits spring flow objectives downstream. As the project is targeting refill by the end of the month, June releases would likely be the same for both VARQ and Standard.

As of June 9, Hungry Horse was at elevation 3549, just 11 feet from full. Hungry Horse will refill this year and is targeting June 30 as the refill date.

Libby: By May 1st, VARQ had not had impact on Libby reservoir elevation: Libby was 4 feet lower on May 1 than the standard flood control target and 34 feet lower than the VARQ flood control target. Libby started gaining pool elevation since inflows exceeded outflows beginning March 31st. Libby increased its discharge from the minimum 4,000 cfs to 15,000 cfs over three days beginning June 2nd to control refill rate.

The May 1st and June 1st water supply forecast were 5.22 MAF and 5.13 MAF, respectively. These forecast levels require 0.8 MAF be provided for sturgeon and 7 kcfs be provided as a minimum instream flow for bull trout. Sturgeon flows officially began June 5th and Libby outflow was ramped up to powerhouse capacity on June 6th and June 7th. After the 0.8 MAF volume is provided for sturgeon, the project will likely ramp down to bull trout minimum flows.

As of June 9, Libby was at elevation 2447.9, 11 feet from full. Libby outflow schedules will be coordinated at the inter-agency Technical Management Team group to balance refill, bull trout and salmon needs.

The Endangered Species Act and Federal dams in the Columbia basin

The Columbia River basin is North America's fourth largest, draining about 250,000 square miles in British Columbia and the Pacific Northwest. There are over 250 reservoirs and around 150 hydroelectric projects in the basin, including more than 20 mainstem dams on the Columbia and its main tributary, the Snake River. The Federal projects are a major source of power in the region, and provide benefits for flood control, navigation, recreation, fish and wildlife, municipal and industrial water supply, and irrigation.

In the early 1990's, the first Snake River salmon were listed as endangered and threatened under the Endangered Species Act (ESA), and additional listings of other fish have occurred since then. Currently, 12 groups of salmon and steelhead in the Columbia River basin are listed as threatened or endangered. Other listed fish species in the basin include bull trout (threatened) and Kootenai River white sturgeon (endangered).

Under the ESA, Federal agencies must act to conserve, avoid jeopardizing, and recover listed species and the habitats upon which they depend. As prescribed in the ESA, the Corps, Reclamation, and Bonneville Power Administration (BPA), the agencies responsible for operation of the Federal dams in the Columbia basin, have consulted with the U.S. Fish and Wildlife Service (USFWS) and NOAA Fisheries (formerly the National Marine Fisheries Service) on operation of Federal dams and reservoirs and their effects on listed fish and wildlife species and their critical habitat. In response to these consultations, the USFWS and NOAA Fisheries have written a series of biological opinions (BiOps) that describe actions intended to protect listed species and their habitat. The ultimate goal of the

ESA is to recover species so they no longer need protection under the ESA. Implementation of the BiOps on operation of Federal dams in the Columbia basin is an important component of the larger fish and wildlife protection and recovery efforts by federal agencies, states, tribes, and other private and public organizations.

In 2000, the USFWS and NOAA Fisheries issued the most recent BiOps on the operation of the Federal dams in the Columbia basin. The respective BiOps are products of the on-going consultations and are based on the best available science. Among a large number of other actions, these BiOps call for implementation of VARQ and certain fish flows from Libby and Hungry Horse Dams, actions that are the subject of this newsletter and the Upper Columbia environmental impact statement currently being prepared.

Since 2000, the Corps, Reclamation, and BPA have been implementing the BiOp recommendations. The BiOps call for actions to be taken over a several year period. Some recommended actions have been implemented, others are scheduled for the future, and others are undergoing study. Actions designed to comply with the BiOp recommendations are coordinated with the USFWS and NOAA Fisheries to ensure that decisions and actions are consistent with the BiOps.

Throughout the course of the current BiOps, there are periodic reviews and checkpoints designed to gauge progress on the BiOp recommendations and species status. More information on implementation of the BiOps on operation of Federal dams in the Columbia River Basin is available at http://www.salmonrecovery.gov/biops_implementation.shtml.

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LOOKING FOR MORE INFO?

Check out our website at

www.nws.usace.army.mil/ers/varq_web.htm

or see
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for
contact information



We are providing opportunities for local communities in Montana, Idaho and Washington to express their perspectives on the effects of the UC project and VARQ alternative. This newsletter reflects the “voice” of one of the users of the Kootenai River: local anglers discussing the implementation of VARQ flood control procedure at Libby Dam. The Kootenai River Network (KRN), headquartered in Libby with the mission to restore, utilize, protect, and promote the Kootenai River watershed, realizes the complexity of the issue and recognizes the recreational and economic importance of native fish populations.



DEFINITIONS IN THIS ISSUE

Macroinvertebrates are animals without a backbone that are large enough to see with the naked eye. Examples include aquatic insects, snails, and worms. Macroinvertebrates are important as food for a variety of fish species. The health of freshwater habitats is often determined by the quantity and diversity of the macroinvertebrates present.

Smolt is a juvenile salmon or steelhead migrating to the ocean and undergoing physiological changes to adapt its body from a freshwater to a saltwater environment.

SNOTEL: A system of automated measurement stations consisting of sensors that record weather and snow pack information, and transmitting equipment that supplies the data via radio to a central location. All remote SNOTEL sites provide data on a daily schedule and can provide additional data on demand. For locations, see <http://www.wcc.nrcs.usda.gov/snotel/>.

VARQ flood control at Libby Dam

Perspectives of anglers in the Libby area

The community of Libby, Montana, enjoys a unique relationship with the Kootenai River, Libby Dam, and Lake Koocanusa. Residents remember both pre- and post-dam streamflows, as well as the variations in streamflow management in the years since Mother Nature (and occasionally springtime sand bags) controlled the river and its banks. Mike Rooney is the President of the Kootenai Valley Trout Club (KVTC), an affiliate of Trout Unlimited. Rooney says, “VARQ is somewhat of an enigma for folks living along and near the Kootenai River because many of them are not only unsure of what the acronym means, but are also concerned about how it might change in-stream flow management. A few people, especially those closely linked to the river who took the time to educate themselves about VARQ, were initially supportive of VARQ because it more closely emulates the natural rhythm of an un-dammed river. However, these same people also sense that the Endangered Species Act (ESA) and electric power generation will take precedence over all other issues and could lead to flows that are either drought-like or near flood stage.”

The Kootenai River has a well-known “blue-ribbon” rainbow trout fishery. Management of Kootenai River flows has a significant impact on all species of insects and fish resident in the river. Unusual high summer flows that are

intended to facilitate migration of salmon smolts in the Columbia River did not regularly occur in historic, pre-Libby Dam times. Low spring flows, between 4,000 cubic feet per second (cfs) and 25,000



cfs, also did not naturally occur prior to dam construction but commonly do now. Each of these conditions could negatively impact insect communities and game fish.

Another perspective, from Dave Blackburn of the Kootenai Angler, a Kootenai River guide and owner of a sporting goods store in Libby, believes that “higher reservoir levels means a greater chance of spilling, which definitely impacts the downstream fishery. Without better snowpack information and data, the Corps will continue to have major problems managing Libby Dam outflows.”

According to Rooney, “If perceptions of our KVTC members hold true, then the Lake Koocanusa will remain higher year-round than with the previous

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standard flood control rule curves. Brian Marotz, Montana FWP has publicly maintained that there will always be the specter of a flood event that will cause damage to property below Libby Dam. The unusual events of 2002 should have worked to dispel some of the fears of people living downstream of Libby Dam that their property would be severely damaged by flood waters. The peak 2002 releases of 40,000 cfs did not appear to significantly damage stream banks nor to invade water wells and septic systems. The incoming flows to Lake Koochanusa were as high as 72,000 cfs at a time when the reservoir was nearly at full pool. For all practical purposes we can say that the Kootenai River banks in the Libby/Troy area can handle a short term release of 40,000 cfs from Libby Dam and that Libby Dam prevented severe damage to property along her banks during the late spring of 2002.”

Rooney continues, “VARQ discharges will be administered and controlled by people and not by an automated system, even though the data streams that come in from SNO-TEL sites (automated snow-pack measurement instruments) scattered throughout the Kootenai Basin are automated and stored in a computer for later manipulation by people. As we understand it, VARQ in and of itself is nothing more than a tool, but the man-machine interface is of special concern to this community. When you add up the facts that nature is hard to predict, that VARQ requires relatively higher average reservoir levels, that VARQ supposedly mimics natural phenomena, that the ESA supersedes all water uses, that electric power cost is driven by electric power commodity traders, and that people will be administering VARQ, it is very hard to understand how this local community can benefit more from VARQ than any other type of discharge control.”

Hungry Horse reservoir drawdown zone revegetation

A conservation recommendation in the 2000 U.S. Fish and Wildlife Service Biological Opinion on the Federal



Columbia River Power System recommended that the U.S. Bureau of Reclamation consider revegetating a

portion of the drawdown zone of Hungry Horses Reservoir in an attempt to provide additional habitat for listed bull trout that seasonally inhabit the reservoir. Additional vegetation would also serve as substrate for production of macroinvertebrates.

Reclamation has initiated work to develop a rigorous study plan to assess the feasibility of using various locally adapted species for this revegetation effort. After potential sites are selected, soil characteristics will be determined, as well as the range of species that would tolerate those conditions. Several sites in the upstream areas (south end) of Hungry Horse Reservoir are being considered. Within selected test plots, plant species

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NOW ON THE WEB

For the latest news and information on the UC project, go to

www.nws.usace.army.mil/ers/varq_web.htm

Listed below are just a few of the informative articles and documents you'll find on the website:

- **Final Environmental Assessment for implementation of VARQ**
An assessment of the effects of implementing VARQ while the EIS is underway, done by the Corps of Engineers for Libby Dam.
- **Frequently Asked Questions**
Answers to a number of questions about the project covering technical issues, policy, background, & process.
- **Final Scoping Document**
The results of the initial scoping process of public and agency meetings, letters, and consultations, setting the scope for the EIS.

Plus links to:

- Agency websites
- Articles and reports on Columbia and Kootenai River dam and flood control operations
- Information on endangered species
- Alternative perspectives and viewpoints

Any Missing Links?

If there are any links you think would add to the information on our site, please submit them to: uceis@usace.army.mil

Thanks for your input!

Information meetings held in Creston, British Columbia

Coordination with Canadian stakeholders is an important part of the management of the Columbia River. Changes in Libby Dam operations affect areas in Canada both upstream and downstream of the dam. On April 15, 2003, the Corps held agency and public meetings for Canadian stakeholders at the Creston and District Community Complex. The meetings were designed to provide information on the Upper Columbia EIS process, gather information on Canadian analyses and perspectives of potential impacts, and discuss the recent decision on interim implementation of VARQ at Libby and Hungry Horse dams.

Representatives from First Nations; local, provincial, and federal governments; Canadian crown corporations; and environmental organizations attended the afternoon agency meeting. In the evening, a number of interested individuals and business owners attended the public meeting. After a brief presentation on the concept of VARQ flood control, fish operations, and the status of the Upper Columbia EIS, the attendees had a chance to ask questions and provide information on their interests and concerns about the proposed changes in Libby Dam operations.

Some of the concerns that were discussed during the meetings are presented below. Input from the Creston meetings will be considered as the Corps and Reclamation prepare the Upper Columbia EIS.

Many of the comments concerned perceptions of how changes in Libby Dam operation might affect the level of Kootenay Lake. Farmers and government officials expressed concern that high or rapidly fluctuating lake and river levels can affect levee stability and groundwater levels in agricultural areas. There is also concern that high river

stages may impact river stages on local tributaries such as the Goat River, or could affect the many bird and wildlife species, including regionally rare species like the northern leopard frog and western painted turtles, that utilize the Creston Valley Wildlife Management Area. First Nation representatives indicated that increased spring flows of the Kootenai River could flush nutrient levels out of Kootenay Lake, resulting in decreased productivity for resident fish stocks. Colin Spence, from the British Columbia Ministry of Water, Land, and Air, commented that the EIS should evaluate potential impacts to kokanee populations in the Duncan River, which could result in unforeseen impacts to these fish, a key food source for Kootenai River white sturgeon.

In addition to potential environmental impacts, social and economic effects were also discussed. Marina owners and landowners along Kootenay Lake are concerned that high lake levels during the early summer may adversely affect their facilities. A key element of the discussion centered on the potential interaction between changes in Libby Dam operation and the effects of Grohman Narrows (a natural constriction at the outlet of Kootenay Lake that influences the lake elevation) on Kootenay Lake level. Provincial and BC Hydro representatives emphasized the need to analyze the potential for increased involuntary spill, resulting in not only lost hydropower generation, but also possible adverse water quality impacts at Lower Kootenay hydroelectric projects.

The Corps greatly appreciates the contribution of all meeting attendees and looks forward to continuing a productive working relationship with Canadian stakeholders.

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FEDERAL COLUMBIA RIVER POWER SYSTEM



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will be randomly assigned to span the range of depths in the top ten feet of the drawdown zone. A multi-agency workgroup will meet in May, 2003 to work on the study plan and discuss species selection. The study plan and species selection is expected to be completed by fall of 2003. Implementation of the plan on test sites is expected to

be completed by fall of 2004, contingent on availability of selected species and appropriate planting seasons. Results of plant survival over the annual course of inundation and desiccation will guide selection of plant species for more widespread use in revegetating portions of the drawdown zone.



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