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NEWSletter

WINTER 2012

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SAMPLETOPICS

Fisheries: Health & Productivity of Kokanee, Trout, White Sturgeon & Other Fisheries; Human Health and Fish Consumption; Net Pens; Hatcheries Water Quality: Sediment Contamination; RI/FS Investigation; Ecological Risks Planning: Watersheds; GIS Systems; Land Use; Recreation; Economic Development Operations: Columbia River Treaty; Columbia River Water Management Plan; Lake Elevations; Flood Control; Power Generation; Fishery Needs

Grand Coulee pumped storage due for modernization

What's wind got to do with it?

The Bureau of Reclamation issued a Draft Environmental Assessment (EA) to modernize the John W. Keys III Pump Generation Plant. The Reclamation proposal, according to the Draft EA, is to overhaul and modernize "... six pumps and six pump generating units at Grand Coulee Dam." If the preferred alternative is selected, this would be a ten to fifteen year project costing millions of dollars.

Sounds pretty boring, doesn't it? But actually the proposed project helps tell the story of Grand Coulee's past and future.

Past as prologue

As every farmer knows, pumping water uphill isn't easy. In the case of Grand Coulee Dam, about 2.5 million acre feet (or over 814 billion gallons) of water is pumped up 280 feet through twelve, 12-foot-diameter discharge tubes from Lake Roosevelt to a 1.6-mile-long feeder canal. That requires six 65,000 horsepower pumping units and six 67,500 horsepower pumping units. The water is delivered to Banks Lake, which in turn provides irrigation to 670,000 acres of land. Indeed, a total of 1,000,000 acres of land could be irrigated if the Columbia Basin Project was fully developed.

Six pumping units were first installed in 1946, with various additions and upgrades to the pump-generating plant occurring over the years. The most important upgrade may have been the ability to release water back down the hill for power generation during times of high electricity demand. This is done by utilizing six pump-generating units, which were installed between 1973 and 1984.

In the parlance of power generation, this is called "pumped storage." Operators pump the water to a reservoir or lake when the cost of pumping is low, store it, and then release the water back down the pipes and through the pump-generators when demand and the value of electricity is high. This causes the pumps to spin in reverse and act as generators. At full capacity, 314 megawatts of electricity can be generated, or enough to power over 200,000 homes.

The Draft EA makes the case that modernization work is required to simply meet current system reliability needs for delivery of irrigation water. For instance, "The overhaul would include work on the unit controls, transformers, circuit breakers, and the fire protection equipment."

Looking to the future: what wind's got to do with it

Behind this story, however, is the need to support integration of wind power into the Northwest Power Grid. Since 2007, Bonneville Power Administration (BPA) has integrated over 3,500 megawatts of wind power into the grid. By 2013, another 3,000 megawatts will be integrated.

Developing wind power is also central to Washington's Initiative I-937, which voters approved in 2006. Wind is the leading resource large utilities are using to obtain 15% of their electricity from new renewable resources by 2020.

The hitch with this good news is that wind doesn't always blow when you want it or need it. It is not programmable. Hydropower, because it can be brought on and off-line quickly, allows system

operators to "balance" the load. Lake Roosevelt, for instance, plays an important role by enabling Reclamation to store and release water as part of the effort to increase and decrease hydropower generation in concert with wind power availability. The limits of what existing hydropower facilities and reservoirs can accomplish, however, are quickly being reached.

As Lynne Brougher, Grand Coulee Dam's Public Information Officer, puts it, "Wind needs more dance partners." And that's where modernization of the pumps comes in.

According to the Draft EA, the end result will be faster, more efficient utilization of the pumps and pump generators. In turn, this will improve the ability of system operators to meet power peaking needs, offset varying loads and improve wind integration.



Water is pumped up 280 feet from Lake Roosevelt for delivery to Banks Lake.

Young America Mine and Mill leads to additional contamination concerns

Like another CSI episode, the suspect looks like this:

Name: Young America Mine and Mill

Location of Mine: 15.25 miles north of Kettle Falls, east of SR 25 near Evans, WA.

Location of milling operation and tailings:

West of the mine and SR 25. The mill is known as the Young American Mill, or the Gregor Mill.

Land Ownership: Private and federal.

Potential Environmental Impact: Upland and beach sediment contamination.

Known but Forgotten

The location of Young America Mine is no secret. Residents would direct you approximately 15 miles north of Kettle Falls. The mine and mill workings can be found about one half mile north of Bossburg, nestled into a nearly vertical limestone cliff. Across SR 25 looking to the west you can still see the remnants of the milling operation.

The existence of the mine is detailed in a July, 2007 report from the Washington Department of Natural Resources. This report also notes detailed site characterization work was done by DNR in 2001, 2003 and 2006.

For the past decade, however, while EPA conducted activities resulting in the RI/FS (Superfund) investigation of the Upper Columbia, the Young America Mine and the surrounding area wasn't on their radar screen. Partly, according to Helen Bottcher, EPA's Remedial Project Manager, "Because EPA's contractor during the preliminary assessment phase found the old tailings impoundment, but was looking for another mine at the time and did not recognize the tailings pile as being associated with the Young America Mine. The dots didn't get connected, so EPA didn't locate and positively identify the mine."

The Cold Case Gets New Legs

Awareness changed this past spring, however, when John Roland with the state Department of Ecology's Toxics Cleanup Program visited the mill. The Department then consulted with EPA's emergency response team. Said Roland, "Historical mills in our region routinely discarded fine-grained tailing wastes that are often enriched in harmful levels of metals. In the

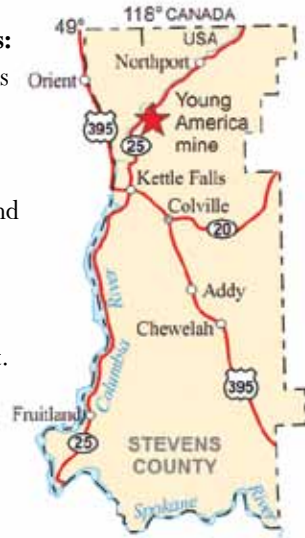
Lake Roosevelt Natural Recreation Area Updates

Ken Hyde, Chief of Integrated Resources

Vegetation Inventory: Lake Roosevelt National Recreation Area (LRNA) received final copies of a Vegetation Inventory Project report along with reference photos and GIS maps. This project mapped the primary vegetation types for all lands in the park along with a buffer zone around the park. The GIS maps and associated databases will be important tools for project planning and restoration efforts. For more information contact Ken Hyde at 509-633-9441 ext. 128.

Fire Management Plan: LRNA is beginning the planning and public scoping process to update the Fire Management Plan for the park. The new plan will cover the years 2013 to 2017. In addition to protecting park resources through fuels reduction and management projects, this new plan will also address the needs to better manage and protect Wildland Urban Interface lands, new neighboring housing developments, and areas that are experiencing high tree mortality from forest insect infestations. Public notices will soon be published notifying the public of opportunities to participate in the planning process. For more information contact Jon Edwards at 509-633-9441 ext. 130.

Welcome April BeBault: Help welcome April BeBault as LRNA's new Biologist. April is from Minnesota, but was working for the federal Nuclear Regulatory Commission in Washington D.C. before being hired by LRNRA. She attended tribal and other colleges to get her degree in Biology and comes with good skills in water quality analysis and environmental science. She will be working on natural resource restoration planning, water quality issues, resource education, and assisting with Upper Columbia/Lake Roosevelt resource damage assessment projects. She can be reached at april_bebault@nps.gov or 509-633-9441, ext. 132. 🌍



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Agreement reached on Midnite Mine superfund cleanup

After years of litigation and negotiation, an agreement was reached this fall for the cleanup of the Midnite Mine Superfund Site, located on the Spokane Indian Reservation. Parties to the agreement, which was filed in federal court as a Consent Decree, include the Department of Justice, EPA, Newmont USA Limited and its subsidiary, Dawn Mining Company, LLC.

The 350 acre site, which is centered around a former open pit uranium mine, poses a potential threat to people's health and the environment due to the presence of heavy metals and elevated levels of radioactivity. The mine operated from 1954 to 1964, and again from 1969 to 1981. Included in this legacy are 33 million tons of radioactive ore, protore, waste rock, and two 500-foot deep open mine pits that are still present at the site.

Federal authorities have cautioned tribal members to not eat wild game, fish or plants within the mine's drainage area, which extends to the Spokane River. For years, tribal members and others exposed to dust and direct exposure to mining activities chronicled an assortment of cancer, lung and pulmonary diseases.

Newmont and Dawn Mining will design, construct and implement a cleanup plan EPA approved in 2006. Cleanup at the site is expected to cost \$193 million. The United States, on behalf of the Department of the Interior, will contribute approximately \$54 million toward past and future cleanup activities. They will also reimburse EPA's costs for overseeing the work.

Said Ignacia S. Moreno, Assistant Attorney General of the Environment and Natural Resources Division of the Department of Justice, "This settlement means that the long-sought cleanup will be implemented, and gives the Spokane Tribe a role in working with EPA to ensure that the cleanup protects human health and the environment on the Reservation."

Actions at the site will include installing a drainage layer and sumps in the two pits left open after mining, consolidating existing ore, protore and waste rock in the pits, and covering the pits to keep surface water out. Ongoing maintenance will include removal and treatment of water that enters from the pit walls.

Cleanup design and construction activities are expected to take up to ten years. Managing and monitoring contaminated water, however, will last generations. Said Randy Connolly, the Spokane Tribes superfund manager, "The plan at this time is that contaminated water will be collected before it can run off the site and it will be treated in a new treatment plant and the clean water will be released into the Spokane River at the mouth of Blue Creek. The radioactive sludge produced by the water treatment will likely be shipped to a facility in Idaho. The radioactive, metal and acid producing contaminated materials will be placed above the groundwater level with a cover designed to keep surface water from reaching these materials and to control the release of radon gas to the surface. Once the vegetation is established on the site the fence around the site will be removed."

The Spokane Tribe, though not a party to the agreement, will support EPA in overseeing the work. 🌍



Midnite Mine, Pit 4. This narrow, 500-foot deep pit contains water contaminated by uranium mining.

RI/FS 2011 Sampling and Report Status

Surface Water: Sampling occurred in fall 2009, spring 2010, and early summer 2010. These three sampling events covered a wide range of different river flows and elevations. Preliminary findings show surface water concentrations for all metals (e.g., arsenic, cadmium, copper, lead, mercury, selenium, and zinc); and organics (e.g., PCBs, and dioxins/furans) to be within limits protective of aquatic life and people. A summary report will be available in 2012.

Beach Sampling: Teck finished the beach sampling program in

spring, 2011. Including EPA's 2005 sampling and three sampling efforts completed by Teck, 43 beaches have now been sampled, some of them twice. Concentrations measured in 2009—2011 were similar to those in 2005, with one exception. At the Bossburg Flat beach, concentrations of lead and other metals are higher than any other beach sampled (see Young American Mine article). EPA and the National Park Service are discussing next steps to address the high concentrations at Bossburg Flat. A fact sheet summarizing data from all the beaches will be available in 2012.

Lake Roosevelt water starts heading toward thirsty interests

Results of the Lake Roosevelt Incremental Storage Release Program, a fancy title for drawing Lake Roosevelt down 12 to 18 inches each August is now showing up as water in fields and taps in eastern Washington. Indeed, this program may be one of the most enduring legacies of Christine Gregoire's time as governor.

If fully implemented, 82,500 acre feet (28.7 billion gallons) of water will be made available for agricultural, municipal and industrial, and instream flow support purposes.

The Gregoire administration believes this can translate into 35,000 jobs and three billion dollars to the Eastern Washington economy.

Water for People

Based on service contracts with the Bureau of Reclamation, December saw Ecology issue the first eight of an expected 80 new water rights from Lincoln County to the Tri-Cities. Although a proverbial drop in the bucket, about 200 acre feet, these are the first non-interruptible water rights issued on the Columbia since salmon were listed as endangered twenty years ago.

Dozens more water right applications are being processed and are expected to be released in 2012. When fully implemented, about 4,000 of the 25,000 acre feet that are potentially available will go to the quad cities. Alone,



the quad-cities estimate this will support 6,500 jobs and yield an additional \$550.4 million dollars (\$485 million residential and \$65.4 million commercial) to the tax base.

Said Governor Gregoire, "These water rights are jumpstarting the dreams that were put on hold while we were fighting over water." In a show of bi-partisan support, Senator Linda Parlette said "Towns like Pateros, Brewster, and Bridgeport have been working to improve their water situation for years, and I'm thrilled to see that the Columbia River Basin water management legislation we passed in 2006 is helping ensure that water will be available to them in the future."

Water for Crops

Meanwhile, Odessa farmers can now tap into 30,000 acre feet of Lake Roosevelt water, of which 21,000 acre feet will be conveyed south of I-90 through the Weber Siphon. The siphon, which carries water under I-90 from the East Low Canal, was completed in 2011 as part of American Recovery and Reinvestment Act, "stimulus," funding. Farmers could start tapping into this additional water supply

in 2012, irrigating up to 10,000 acres of farm land that previously relied on deep water wells that are fast depleting.

If farmers fully use water available via Lake Roosevelt, 10,000 acres of land will be moved from deep well irrigation. Potentially, this can save millions of dollars in farm income and related jobs by keeping them in business when the aquifer declines to a point where wells are no longer usable. 🌱

Fish Tissue Sampling: Over 2300 fish were sampled in fall 2009. Sampling included all size classes (small, medium, and large fish) and a wide range of species (e.g., largescale sucker, pikeminnow, yellow perch, kokanee, walleye, smallmouth bass, whitefish, rainbow trout, and burbot). Samples were analyzed for 385 different chemicals. Preliminary findings indicate that most fish tissue chemical concentrations are below health screening level benchmarks. Three contaminants of potential concern were identified, including mercury,

PCBs, and PBDEs that warrant further assessment. Mercury concentrations appear lower for walleye than in previous sampling efforts. The Washington Department of Health is expected to issue an updated fish advisory in the first quarter of 2012.

Recreational Use Survey: A survey to assess where, when, what, how, and how long visitors utilize Lake Roosevelt and the Upper Columbia River began in October 2010 and will wrap up early in

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New transmission lines will grace the face of Grand Coulee in 2012

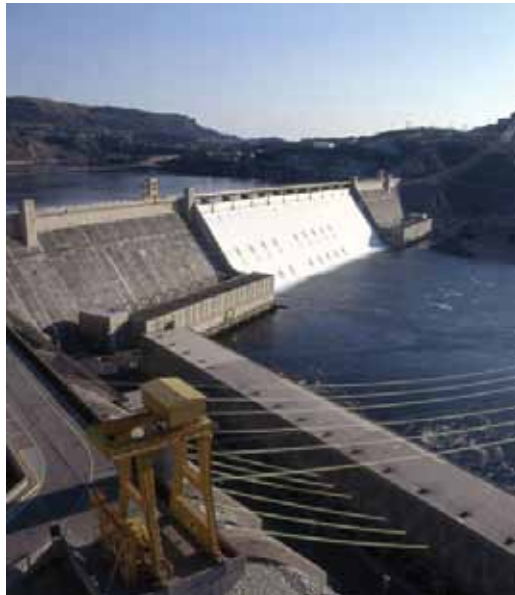
Construction work to build new 500-kV transmission lines that will extend from the face of Grand Coulee Dam's Third Powerplant (river right), over the visitor area (river left), and up the hill to points beyond is scheduled to begin this March. Six new towers in height from 280 feet to 316 feet will also be built to carry the lines to the Spreading Yard.

As previously reported by the Forum, Reclamation and BPA have been working on design plans and related Environmental Assessment (EA) for two years. In December, the Bureau released a Finding of No Significant Impact (FONSI) on its environmental findings, clearing the way for construction.

During the EA comment period, the public wanted to know if placement of the lines would affect the laser light show, if the new towers would affect available space or use in the visitor center park, and how the lines or towers might affect the general aesthetics of the area.

Lynne Brougher, Grand Coulee's Public Information Officer, reports that "The EA evaluated each of the concerns raised

by the public and several positive results were realized. Towers in the visitor center park will be removed, three less towers will be constructed than early planning suggested, the lines were shifted away from residential areas, and the visitor bridge connected to the Third Powerplant will remain."



Overhead power lines at the Third Powerplant will replace six existing underground lines.

Reclamation also reports that it needs to complete the transmission line project prior to beginning the multi-million dollar Third Powerplant overhaul.

These lines will replace six underground 500-kV transmission lines that currently route through the dam in eighteen aging, oil-filled cables. Near the end of their operational life, the lines present both employee safety and system reliability issues.

Reclamation will hold an informal open house close to the beginning of construction to discuss questions about scheduling, traffic and other issues the public may have. Contact Lynne at lbrougher@pn.usbr.gov to be notified of this meeting. 🌐

Grand Coulee pumped storage due for modernization What's wind got to do with it?

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In the preferred alternative, the power to energize the six pump units would come directly from the switchyards at Grand Coulee, rather than directly from generators in the left powerhouse.

Simply put, the proposed project becomes another tool in the BPA/Reclamation tool box for meeting future power demands and integrating new power sources, especially wind. Examples of other tools under development in the region include smart grid technology, development of new pumped storage projects, improved wind forecasting, and improved transmission scheduling.

Once again Lake Roosevelt and Grand Coulee Dam finds itself quietly being asked to help foster the Northwest's future growth.

For a project summary, visit www.usbr.gov/pn/programs/ea/wash/jkpgp/index.html. For more information, contact Keith McGowan at kmcgowan@usbr.gov. 🌐



Teck funds Technical Assistance Grant for CCC

As part of the upper Columbia RI/FS to determine the potential human and ecological risks of contaminant releases, Citizens for a Clean Columbia (CCC) received a one-time \$50,000 Technical Assistance Grant (TAG) from EPA to directly participate in commenting on study plans, results and reports. The purpose is to assure a community voice and assist with community outreach as the investigation progresses.

For a site as large and complex as Lake Roosevelt and the upper Columbia, it was no surprise that this one time grant would need to be extended for CCC to continue this level of participation. With funding no longer available from EPA, in October 2011 Teck stepped up to the plate by providing an additional \$50,000 to EPA to continue CCC's work.

Said Dave Godlewski, Teck American Environmental and Public Affairs Manager, "CCC's contributions to a transparent and balanced investigation are clear. We want the community voice at

the table, and we want it to be based on knowledge and conclusions they directly participated in. We're pleased to have the opportunity to support and acknowledge their good work."

EPA shares Teck's sentiments. "CCC has been providing thorough, insightful, and constructive comments on draft technical documents," commented Helen Bottcher. "These deliverables are both very technical and lengthy. CCC's questions and suggestions are spot-on, and consider everything from the integrity of the data to how outcomes were calculated and conclusions made. It's a positive contribution that serves the community and the investigation well."

The Forum applauds this effort. The Forum's Executive Director, Andy Dunau, put it this way, "This represents folks moving beyond the easy target of classifying each other as black hats and white hats. It's about getting the work done, and the work isn't done without real, tangible community involvement." 🌍

Young America Mine and Mill leads to additional contamination concerns

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case of the Young American Mill, the forgotten tailings were spread out in an open, bermed impoundment. And crossing these tailings is a roadway and recently sold vacation lots. We were concerned the tailings posed an immediate health risk to that small community of lakeshore owners near the tailings, particularly children."

EPA then went out to investigate in July. Led by Kathy Parker, EPA's On-Scene Coordinator, EPA found the concentrations of lead and other metals around an old tailings impoundment were way above screening levels for risk. Investigators then began assessing groundwater, tailings and soil in the surrounding area.

The area being investigated has three distinct pieces. There is Young American Mine, whose final year of operation was 1954. The land, now mostly owned by the Bureau of Land Management (BLM), is east of Route 25. What's known about contaminant levels in this area is limited. EPA testing to date has not included BLM land.

West of Route 25 was the milling operation and where tailings were deposited. This is now private property, and is one of the few locations where property can be purchased by the river. A home has been constructed on one of the properties. On the other properties, including the tailings impoundment area, the owners enjoy their river views on a part time basis, camping in motor homes and/ or tents. Unbeknownst to one of the property owners, their well was drilled through the tailings. Thankfully, the well is deep and tests of well water do not indicate the well is contaminated.

The Plot Thickens

At about the same time EPA began investigating Young America Mine, separate RI/FS investigators confirmed high levels of heavy metals on a beach about a half mile downstream of the mine. The beach is one of 43 beaches the RI/FS team has sampled in the Upper Columbia.

The contaminated beach is where the town of Bossburg once thrived. Now considered a ghost town, Bossburg had as many as 800 residents dating back to 1892. The town prospered and declined in relation to the production of lead and silver from mines in the area. At one time there was also a Bossburg saw mill and a ferry system to transport people and materials across the river.

Now What?

EPA is working with agencies and private landowners to determine next steps for the Young America mine and mill, and Bossburg areas. This includes beginning the process of identifying "potential responsible parties" to assist with site cleanup. EPA will update citizens as to possible actions and time lines at the April conference and future newsletters.

In the meantime, gravel has been placed at the mill to cover some of the tailings along the roadway and a recommendation has been made to conduct a removal action at the mill. At Bossburg, the National Park Service has closed the area believed to be contaminated, and posted warning signs to alert park users to the potential for contaminant exposure. 🌍

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RI/FS 2011 Sampling and Report Status

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2012. The results will inform key sections of EPA's human health risk assessment. A report is expected in late 2012.

Sturgeon Toxicity Testing: Two different laboratory toxicity studies have been completed to assess how exposure to contaminants in surface water and sediment may affect early life-stages of sturgeon. Reports from both studies are expected in 2012.

Sediment Sampling: Teck submitted a Quality Assurance Project Plan (QAPP) for sediment sampling in March 2011. This sampling effort will include the collection of sediment and porewater chemistry data as well as toxicity tests. The purpose of

the sediment testing is to evaluate if there are unacceptable risks to benthic invertebrates (sediment dwelling bugs) associated with exposure to metals and other chemicals in sediments. EPA is still developing comments on the draft. Sediment sampling is currently scheduled for late summer, early fall 2012.

Upland Soil Sampling: EPA is working on a "Level of Effort" paper for an upland soil sampling program that will clearly describe EPA's minimum expectations. Teck will work from the Level of Effort paper to develop a draft Quality Assurance Project Plan. Soil sampling data will be used to evaluate potential risk to both people and ecological receptors. ☀

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