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Lake Roosevelt Forum

NEWSletter

SUMMER 2010

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Changes to lake operations and 2010 summer lake levels

By the end of August and into early September Lake Roosevelt lake levels will likely be between 1276 and 1278 feet above sea level. That's up to two feet lower than what people become used to over the past decade.

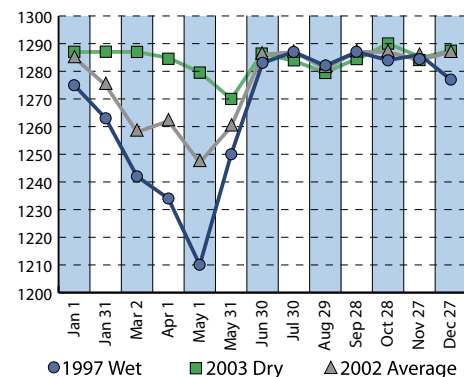
Although more shoreline will be exposed, most people will not be significantly affected. Visitors to the lake should be aware that:

- Lake levels can change rapidly based on operational needs (flood control, hydropower, supporting downstream fisheries, and irrigation). You can check the lake level at the Forum web site (www.lrf.org). Particularly people that tent or boat camp on shorelines should manage their belongings accordingly.
- Additional beach areas being exposed also means the potential for additional cultural resources being exposed. Don't dig. If you find something, do not move it ... it's a crime.
- Aquatic weeds will be closer to the surface and potentially more abundant, fouling props and swim areas.
- Marinas may need to relocate boat slips, docks and services.
- If the lake level goes below 1277 feet, the Snag Cove boat launch may not be operational.

Why the Change?

The 2008 Columbia River Biologic Opinion (BiOp) retained the previous BiOp requirement that the August level of Lake Roosevelt be lowered to as low as 1278 feet to support downstream fishery needs in below average water years. In 2010, Lake Roosevelt may reach its summer BiOp elevation of 1278 feet by mid-August depending upon flow objectives for endangered fish.

Lake Roosevelt Water Elevations
Wet - Dry - Average Water Years



With implementation of the Lake Roosevelt Incremental Storage Release Program, the lake level can now be reduced an additional foot (down to elevation 1277 feet in non-drought water years) by the end of August. The additional drawdown provides water to replace ground water supplies in the Odessa Subarea, augment downstream municipal/ industrial water supply, and enhance downstream flows for fish.

In a drought year, an additional 1.8 feet of water (down to elevation 1276.2 feet) can be taken. Although this is a low water year, it is not a drought year, which is defined by the March final water supply forecast at The Dalles on the Columbia River.

Additional draft may be required to meet downstream minimum flow requirements on the lower Columbia River in early September before fall rains begin. Lastly, power needs may result in reservoir fluctuations of one foot for operational flexibility. One factor driving the need for additional operational flexibility is integration of wind power, which can be unpredictable.

GETTING TO KNOW THE RIVER MILE

Janice Elvidge

Education Specialist, Lake Roosevelt National Recreation Area

The River Mile is a student inquiry, systems approach to water quality monitoring of the Columbia River watershed. The program began in April 2008 and continues to evolve thanks to the many partners interested in water quality, ecosystems, climate change and student education. The program was developed by Education Specialist Janice Elvidge of the Lake Roosevelt National Recreation Area (LRNA), a unit of the National Park Service.



Janice Elvidge, NPS Education Specialist

Kindergarten through 12th grade students participate in a multi-discipline, multi-level student inquiry program that engages them in real world scientific research design, data collection and analysis related to the Columbia River Watershed. One of the goals of this program is for every school or district to adopt a one

mile stretch of the Columbia River or tributary and use it as their living laboratory. Another goal is to support networking and information sharing between and among teachers, students, natural resource specialists, scientists and environmental educators.

Participation in The River Mile Program can be by district, school or class level. This school year nine schools and 315 students participated.

Ideally, all K-12 grades from a district participate and work with their site year after year. The first year of a school's participation features exploration of the site. Students get to know their site while collecting inventory data. Inventories conducted by students early in a school's participation form baseline data from which future participants will be able to detect and identify trends and change over time.

Subsequent years include on-going inventories and monitoring of locations, and specific class initiated resource



River Mile class visits their site,

projects. Students learn stewardship as they return to their mile time after time and see firsthand the changes, both good and bad, that take place.

A number of tools support teacher and student networking. These include a newsletter, webinars for teachers and students, a symposium at Gonzaga, and teacher workshops. Workshops lead teachers through a variety of subjects and skills; webinars offer content rich scientific and resource management topics from different specialists; and the Student Science Symposium, offered one day each May at Gonzaga University, lets students participate in concurrent sessions. The symposium features keynote speakers and special presentations.

Through a variety of ranger-conducted programs, students learn and practice observation skills, plant and animal identification, and utilize the scientific method. Students also explore different water sampling methods and their use. Such as how to use a YSI 556 water meter and probe, turbidity tube, secchi disc, basic test strips, and chemical water tests for advanced grades.

Schools progress at their own pace. Research plans are completed and submitted to park management. Park education and resource staff work with the school/school district during all stages of the program and network scientists and resource specialists are available to help with all aspects of research projects. Scientific data is recorded and submitted to National Park resource managers.

The result is teachers and students having a real world laboratory where they work with park staff and scientists to collect, analyze, interpret and share ecosystem data throughout the Lake Roosevelt Watershed, and eventually all of the Columbia River Watershed. 🌍

Landslide warning, public caution advised

The National Park Service, Bureau of Reclamation and Spokane Tribe of Indians want to relay a clear message to the public:

Do not boat, swim or recreate under steep slopes of sand, gravel, or clay

Do not carve letters or signs into exposed sand banks

Do not explore shoreline crevices and inlets surrounded by steep slopes or overhangs composed of sand, gravel or clay

Landslides can and do occur around Lake Roosevelt. Staying clear of landslide areas is the best way to protect yourself, family and friends. Using watercraft to explore areas or otherwise undercut steep slopes increases the likelihood of landslides.

Lower Spokane River Landslides

Last August, a landslide on the Spokane Indian reservation caused an 8 to 12 foot wave to cross the Spokane River. The wave hit the Lake Roosevelt National Recreation Area's popular Porcupine Bay campground, damaging docks and other facilities. Injury was minor, probably because the landslide happened during the week when campground visitation was minimal. In January, 2009 another landslide occurred upstream on the reservation.

Although the lower Spokane River has seen the most recent landslide activity, sloughing hillsides throughout the reservoir pose dangers. According to Department of Interior geologists who visited the area, landslides are impossible to predict.

What Causes Landslides

There are different views as to what causes landslides around Lake Roosevelt. Some or all of these views may be accurate.

They include:

- Landslides can occur where certain combinations of soils are present. For instance, when layers of sand and gravel lie above less permeable silt and clay layers, groundwater can accumulate from springs or other water sources. This can cause zones of weakness to develop, eventually resulting in a landslide.
- Operation of the dam causes lake levels to rise and fall. Rapid lake level fluctuation of more than 1.5 feet within a 24 hour period can potentially weaken hillsides.
- Steep slopes are typically found along shorelines where centuries of wave or river currents have eroded the toe of the slope. For instance, even before the building of Grand Coulee Dam, landslide activity occurred in the lower Spokane River.



Summer, 2009 landslide

Safety First

Is there complete agreement on what causes Lake Roosevelt landslides? No.

Can experts predict where and when Lake Roosevelt's landslides will occur? No.

Is playing it safe in landslide areas everyone's responsibility? Yes.

Please enjoy the summer. Play it safe and encourage others to do the same. 🌟

RI/FS 2010 sampling and report status

Surface Water: Sampling occurred in fall, 2009 and is continuing during the spring, 2010. A draft report will be prepared and under review by EPA during the winter, 2010.

Beach Sampling: Sampling at seven beaches (see article) occurred in the fall of 2009 and spring of 2010. A draft report will be prepared and under review by EPA during the fall, 2010. Additional beach sampling is scheduled to occur in the spring of 2011.

Fish Tissue Sampling: Over 2300 fish were sampled in fall, 2009. A draft report will be prepared and under review by EPA during the fall, 2010.

Recreational Use Survey: A survey to assess where, when, what, how and how long visitors utilize the Lake Roosevelt/upper Columbia recreational area is under development. Testing of the survey instrument may occur this summer. When testing is complete, data will be collected over a one year period.

Plankton Sampling: Quality assurance plans for sampling are presently being reviewed and are expected to be complete this summer. If the plan is approved, sampling will occur in late summer.

Sturgeon Toxicity Testing: Two different types of lab tests are being planned to assess how exposure to contaminants in sediment and/or water may effect sturgeon larvae and fry. Testing is scheduled to begin this summer. 🌟

Beach and air quality reports allay some human health concerns

A report from the Washington Department of Health (DOH) found that use of beaches by area residents and visitors is "... not expected to harm people's health."

A different report, prepared for the Department of the Interior by Industrial Economics, Incorporated found that human inhalation of airborne sediment particles containing lead and other heavy metals are within EPA acceptable risk standards for cancer and non-cancer health effects resulting from both acute and chronic exposures.

Both reports focus on non-tribal visitors, residents of the area, and/or Park employees.



2009 beach sampling

Department of Health Report on Beaches

The DOH report was released in March, 2010. The data assessed was from sediment samples taken from 15 beaches along Lake Roosevelt in May, 2005 by the U.S. Environmental Protection Agency (EPA). Sediment was analyzed for lead, heavy metals and organics (e.g., PCBs and dioxins/furans).

Using this data, EPA's August 2006 screening level risk assessment for recreational use concluded that of the 15 beaches sampled, 12 "are safe for recreational use"; and that additional data was required for the three most northern beaches (i.e. Black Sand Beach, Northport Boat Ramp, and Dalles Orchard).

The 15 beaches sampled (moving downstream) included: Black Sand Beach, Northport Boat Ramp, Dalles Orchard, North Gorge Campground, Marcus Island Campground, Kettle Falls Swim Beach, Haag Cove, French Rocks Boat Ramp, North Gifford, AA Campground, Roger's Bar, Columbia Campground, Lincoln Mills Boat Ramp, Keller Ferry No. 2, and Spring Canyon Campground.

The scenario for assessing area residents exposure is two-days-per-week for four months, or 35-days-per year. The scenario for assessing visitor exposure is 14-days-per-year (two weeks). In both cases "DOH concludes that touching, breathing, or accidentally eating sediment ... is not expected to harm people's health."

Additional Beach Testing

Based on recommendations from tribes, agencies and the community, additional beach testing of 34 beaches from the Canadian border to Grand Coulee Dam has begun and will conclude next year.

Two beaches were sampled in 2009 (Black Sand Beach and the Upper Columbia R.V. Park), and five more were sampled this spring (Northport, Dalles, China Bend, Summer Island and Barnaby). The remaining beaches will be tested when lake drawdown conditions sufficiently expose the shoreline. Needed drawdown conditions did not occur this year because of lower than normal snow pack in the Canadian Rockies. There is a high degree of confidence that sampling will be complete in the spring of 2011 because lake levels must be reduced to accommodate scheduled maintenance work at Grand Coulee Dam.

DOH vs. EPA Reports

DOH prepares health consultations, and when necessary issues advisories, based on data being collected as part of an agreement between EPA and Teck to conduct a Remedial Investigation/Feasibility Study (RI/FS). Further, DOH conducts its work as part of a cooperative agreement with the Agency for Toxic Substances and Disease Registry (ATSDR). ATSDR is charged under the "Superfund Act" to assess the presence and nature of health hazards resulting from environmental spills and other releases of toxic substances.

As further sampling data comes in, DOH will conduct health consultations regarding consuming fish, water quality and other potential exposure pathways that could affect human health.

Using the same data, EPA will develop separate reports regarding human and ecological risks. These reports will culminate in a "record of decision".

Industrial Economics Report on Inhalation of Windblown Sediments

From 2002 through 2006, the United States Geological Survey (USGS) collected air samples from Inchelium, Seven Bays, Kettle Falls (2002) and Marcus (2003-2006). USGS reported that overall concentrations of particulate matter recorded at these monitors did not exceed the Federal standards at the site (i.e., the National Ambient Air Quality Standards); however, many trace metals

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Burning docks at Moccasin Bay cause environmental damage, unsightly mess

The Lake Roosevelt National Recreation Area (LRNRA) is investigating the burning of a dock system at Moccasin Bay on Saturday, June 5th. The area affected is across from the Spokane Indian Reservation on the Spokane arm.

The dock system had 12, 20' slips attached to a 150' long main dock. One or more perpetrators decided to take a tractor along the shoreline to bunch up, and then burn the system. What resulted was an unsightly mess and environmental damage that extended miles down the lower Spokane arm.

The beach area itself was deeply rutted and disturbed from tractor tires and a blade moving the dock system to the burn area. The air was fouled with a black cloud of smoke resulting from burning not only wood, but Styrofoam and possibly tires (both petroleum based products). As the lake rose Saturday night, the Styrofoam sullied shore lines and could be found on the lake's surface area far down stream. LRNRA staff is working to clean up the mess.

Last year, LRNRA informed the Moccasin Bay Homeowners Association that the dock system was illegal based on recreation area management policies and needed to be removed. The deadline for removing the dock system had expired in 2009.

Said Andy Dunau, Executive Director of the Forum, "It's a darn shame. If an investigation finds this is the work of one or more property owners, we think it represents the bad apple in the barrel. Most folks living along the shoreline take great pride in maintaining the area. They're an asset." 🌱



Styrofoam litters water, smoke sullies air



Shoreline damage

Beach and air quality reports allay some human health concerns CONTINUED FROM PAGE 4

detected in samples of the lakebed sediments were also present in the air. Analysis by USGS found that concentrations of metals in the air did not exceed California EPA air quality standards for arsenic and cadmium. Federal and state standards were not available for other metals.

The Department of the Interior requested Industrial Economics, Incorporated (IEc), a private firm based out of Cambridge Massachusetts, to further evaluate the USGS data. Like the DOH report, it focuses on potential exposures and risks to non-tribal people, e.g.— residents, park employees, and visitors.



Sediment sampling

Using appropriate EPA risk assessment standards and guidance, IEc assessed chronic cancer risk and non-cancer hazards from both acute and chronic exposure to levels of lead and other heavy metals found in the USGS samples. IEc found the risks from inhalation of windblown sediment to be within EPA standards and benchmarks for all contaminants and scenarios evaluated.

Reports On-line

To view these reports, go to www.lrf.org/Links.html. Scroll down to Lake Roosevelt RI/FS and related studies. 🌱

Student Discovery Week 2010 offers spring field trips

Nearly 350 Lake Roosevelt area school children enjoyed field trips during one of the nicest spring weeks of the year. Student Discovery Week, coordinated by the Lake Roosevelt Forum, was held May 10 - 14 and proved to be a great event for all involved. Started by the Forum in 1999, over 5,000 students have participated in this program.

The students came from eleven schools throughout the Lake Roosevelt area. Each school, some of whom sent multiple classes, picked from one of seven "discovery zones."



Each zone focuses on specific natural resource work being conducted by managers and scientists in the area.

"We really enjoyed having the kids handle

some of the fish this time around. We always like the creek and looking at the different invertebrates," said Krista Rodrigues, a 5th

grade teacher from Davenport. Her class visited the Spokane Tribal Hatchery where tribal and BPA representatives presented the Kids in the Creek program. "It was also great to see some really big bugs and bugs from other locations to compare to," she said.

The zone leaders enjoy their time with the children as well. Student Discovery Week is a chance for them to share their knowledge and love for their job.

"I had a great day! The students, teachers and adults seemed to also! Very impressive, attentive, well behaved students," said Gary Martin with the Bureau of Indian Affairs in Nespelem. Gary led a Davenport class through his "Trees and Other Fun Things" zone at Owhi Lake. 🌲



Discovery Zone at Spokane Tribal Hatchery

Federal stimulus funds help upgrade Lake Roosevelt National Recreation Area facilities

The Lake Roosevelt National Recreation Area (LRNA) was able to prioritize and submit requests to update and improve facilities as part of distributing federal stimulus funds. Stimulus funds came from the 787 billion dollar American Recovery and Reinvestment Act that was passed in February, 2009.

Says Ray Dashiell, Facility Manager for LRNA, "For several years our budgets have been very tight with limited opportunities to make new investments in facilities we know visitors need and want. This funding will help catch us up to where we really need to be."

According to Dashiell, projects include:

Replace 14 Stick Built Vault Toilets: CXT prefabricated concrete vault toilets are now available at the following boat launch ramps: China Bend, Evans, Bradbury Beach, Gifford, Hunters, Keller Ferry, Spring Canyon, and Lincoln. Installations also include Keller Ferry group campsite and Porcupine Bay day use area. Four other units will be replaced this year. When the walkways to these new units are complete, they will be ADA compliant.

Energy Retrofit of Buildings at Fort Spokane and

Kettle Falls: Work includes window replacement, garage door

replacement, replacing old inefficient furnaces, and replace old water heaters. This work will result in an energy savings that will allow funding to be used in other areas.

Micro Hydropower System at Fort Spokane Water

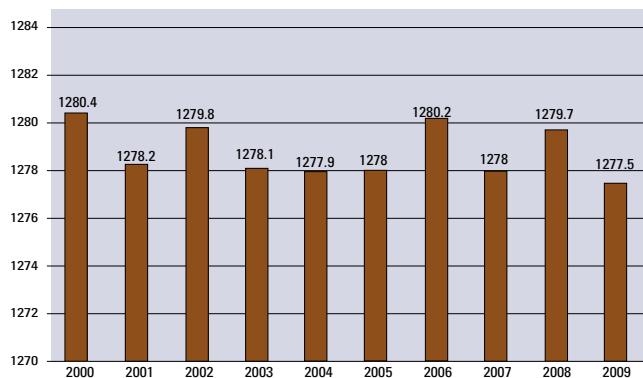
Reservoir: The reservoir is filled by spring water that runs 24 hours a day/ seven days a week. A turbine will be installed in the inflow to the reservoir and tied to the electrical grid to generate approximately 4,400 kwh per year.

Two Photovoltaic Systems: Installation of systems at Headquarters in Coulee Dam, and Seasonal Housing area at Fort Spokane. The two systems will generate approximately 40,000 kwh per year.

Forest Health: As part of the Wildland-Urban Interface, a program to address the area where structures and other human development meet or intermingle with undeveloped wildland, funding will be used to reduce fuels where LRNA land adjoins community neighbors.

All projects are expected to be completed this year. 🌲

Lake Roosevelt: Lowest August Lake Elevation



The net effect is that from mid August and into early September, lake levels can now be 1 to 2.8 feet lower than the 1278 foot elevation communities have grown accustomed to over the previous decade. Whether lower lake levels last hours or days is impossible to predict.

Additional Lake Level Concerns

4th of July Weekend

Fourth of July weekend is one of the most popular visitation periods of the year.

Only once in the past twenty years has the Bureau of Reclamation not returned lake levels to a visitor friendly 1280 feet or above by the fourth of July. To provide operational flexibility the lake sometimes approaches full pool of 1290 feet by the end of the 4th of July weekend. When this happens there is far less shoreline to camp on and enjoy.

The reason for this is that the BiOp requires Lake Roosevelt to be at the full pool elevation of 1290 feet near the end of June or early July. Lynne Brougher, Public Affairs Officer at Grand Coulee Dam, reports “Power demand on the July fourth weekend is very light, therefore, the Bonneville Power Administration (BPA) often uses this light load weekend to allow the reservoir fill to meet the BiOp full pool requirement. This results in raising water levels across the weekend, sometimes catching campers unaware. We work with BPA to moderate the amount of fill on each day and to potentially delay the final fill somewhat if possible to provide a better recreating experience. While we are hopeful this can be achieved, it is not always possible. Campers and boaters should be prepared for rising lake levels.”

Fisheries in May and September

Unlike downstream fisheries, Lake Roosevelt does not have Endangered Species Act (ESA) listed fisheries. Such fisheries were lost when Grand Coulee and Chief Joseph dams blocked salmon runs from returning to the upper reaches of the Columbia. Fishery managers now use net pens and hatcheries to try and maintain a sport fishery for rainbow trout and a sport/cultural fishery for kokanee.

In mid to late May, up to 750,000 rainbow trout are released from net pens. If lake levels are falling, water moves through the system faster. The result is that trout can be “flushed” past Grand Coulee Dam, reducing the sport fishery.

This year, water releases to support downstream fisheries and late runoff from snowpack in Canada made timing of net pen releases problematic. Says Mitch Combs, WDFW hatchery manager at Sherman Creek, “Fishery managers, spearheaded by net pen volunteers, use an eighteen month program to raise and release rainbow trout. Program timing relies on releasing net pen fish after the spring drawdown. These type of unpredictable conditions hit right as we’re releasing fish. The result is less success in meeting sport fishing needs.”

By the end of September, fishery managers need the lake to rise to 1283 feet to assist Lake Roosevelt’s fall spawning of kokanee. Although not a BiOp requirement, the Bureau has been able to meet this need in most years. The expected lower lake levels raise fishery manager concerns that meeting this target in the future may be more difficult.

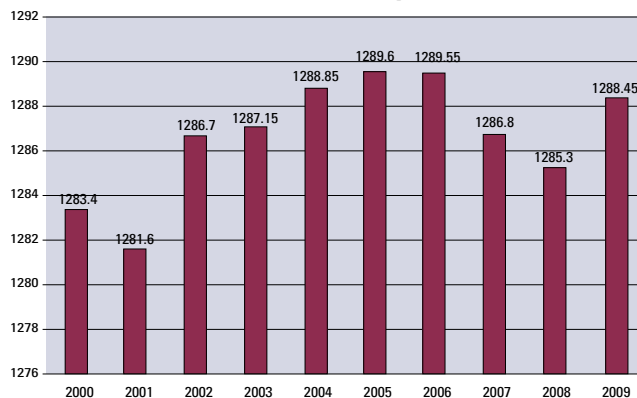
Flood Control

Lake operations during spring are driven by needs to prevent flooding as far downstream as Portland. The higher the forecasted runoff, the greater the space that is required in Lake Roosevelt for flood control. The majority of the runoff is from accumulated snowpack in the Columbia River Basin. Lake Roosevelt’s spring lake level can be as low as 1208 feet in high forecasted runoff years. This year flood control only required a draft to 1283 feet. However, the lake drafted to a low of 1259 feet in mid-May to augment flows for mid-Columbia fisheries. This happened because of delayed runoff conditions and the low snowpack in the Canadian Rocky Mountains.

Lake Level and Operational Updates

From the Forum’s main page (www.lrf.org), you can access current and forecasted lake levels provided by NOAA. If you would like operational updates supplied by the Bureau, e-mail the Forum at info@lrf.org. We will add you to an e-mail list that receives this information. 🌐

Lake Roosevelt: 4th of July Lake Elevation



District Court upholds challenge to the Lake Roosevelt Incremental Storage Release Project

The Center for Environmental Law and Policy (CELP) and Columbia Riverkeeper sued the Bureau of Reclamation (the Bureau) for violations of the National Environmental Policy Act (NEPA). In question was the manner and timeliness of the Environmental Assessment (EA) necessary to implement the Lake Roosevelt Incremental Storage Release Project.

If the court found in CELP and Columbia Riverkeeper's favor, there was also a "... request for injunctive relief to prevent Defendants [the Bureau] from taking action related to [implementing] the project." The district court, however, issued a ruling in the Bureau of Reclamation's favor.

As a result, the Bureau and Washington Department of Ecology can continue their plan to release additional water from Lake Roosevelt to meet the following needs: replace groundwater farmers currently pump from the Odessa subarea Aquifer; supplement downstream municipal and industrial needs, and improve downstream flows for fish. In drought years, additional water can be withdrawn to meet needs for irrigation and stream flows for fish.

For specific information on effects of the water release on Lake Roosevelt, see the Lake Operations 2010 article in this issue of the newsletter.

The Court Case

According to the summary judgment issued by the court, CELP made ... "two basic arguments: that Defendants (the Bureau)

violated National Environmental Policy Act (NEPA) by beginning to implement the Project before complying with NEPA, and that the Environmental Assessment (EA) Defendants later prepared was flawed in three respects." The court summarized CELP's arguments regarding the EA's flaws to include "(1) its consideration of cumulative effects; (2) its consideration of indirect impacts; and (3) its consideration of reasonable alternatives."

For each point of contention, the court provides a rationale for finding in the Bureau's favor.

Says Rachael Paschal Osborn, the Executive Director of CELP, "The Lake Roosevelt Drawdown remains a bad project. Ecology and the Bureau have failed to analyze the impacts of future climate change on instream flows or the increased exposure by the summer-visiting public to toxic contaminants on the banks of the reservoir. Meanwhile, Ecology is preparing to issue 1,000 new water rights. This is bad science and bad policy at work."

Although not part of the law suit, Osborn went on to note that "One oddity of the process is the Bureau's decision to give away Columbia Basin Project water rights to non-project users. In similar cases, courts have held this is an improper divestment of federal property by the Bureau."

The parties have 60 days to file an appeal of the District Court's decision, but have not yet decided whether to do so. 🌐

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