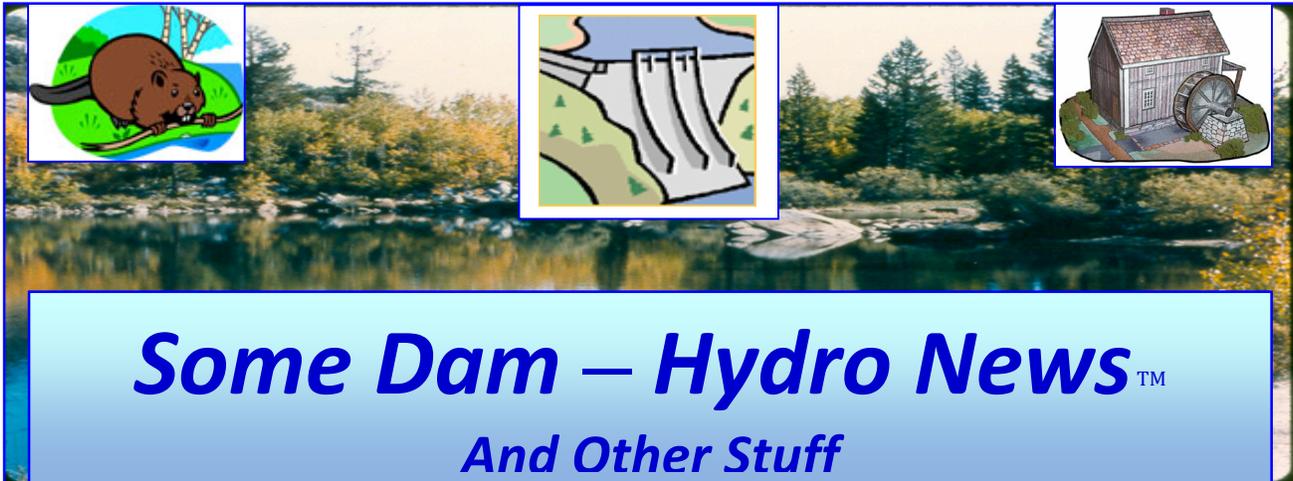


8/24/2018



Quote of Note: *“There is nothing government can give you that it hasn't taken from you in the first place.” - Winston Churchill*

Some Dam - Hydro News → **Newsletter Archive for Current and Back Issues and Search:**
(Hold down Ctrl key when clicking on this link) <http://npdp.stanford.edu/>. After clicking on link, scroll down under Partners/Newsletters on left, click one of the links (Current issue or View Back Issues).

“Good wine is a necessity of life.” - -Thomas Jefferson
Ron's wine pick of the week: 2015 Nicodemi Italy (Other Regional Reds) "Montepulciano d'Abruzzo Le Murate"
“No nation was ever drunk when wine was cheap.” - - Thomas Jefferson



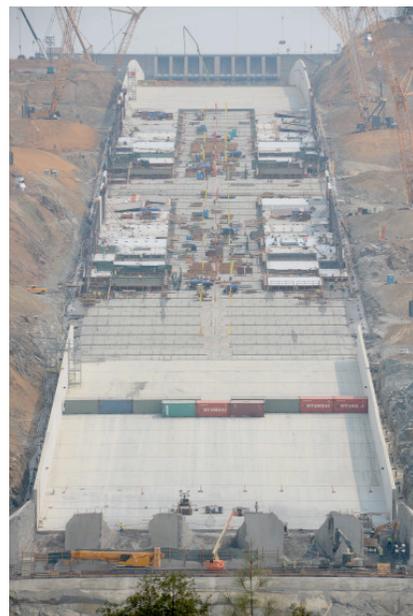
Dams:

(Moving right along.)

“Crucial milestone” met at Oroville Dam with structural concrete placement

By RISA JOHNSON | chicoer.com | Chico Enterprise-Record, August 8, 2018

OROVILLE, CA — Crews have begun to place the final layer of concrete this week on the upper portion of the Oroville Dam spillway chute. This marks a “crucial milestone,” said Tony Meyers, project manager for the recovery project for the state Department of Water Resources, in a moderated media call on Wednesday. The top layer of the spillway consists of structural concrete slabs, which are designed to be erosion-resistant. The first two structural concrete slabs



were placed Monday on the upper chute. Phase two of work on the upper chute is about 45 percent complete, while the middle chute is approximately 58 percent finished, Meyers said. The middle section of the spillway was constructed last year with temporary roller-compacted concrete and is being rebuilt this year with structural concrete slabs on its walls and floor. The tooth-like structures at the bottom of the spillway, called energy dissipaters or edentates, are being excavated and will be filled with reinforced structural concrete in this final construction phase. Repairs are about 25 percent complete, Meyers said.

Over at the emergency spillway, crews are about 58 percent done placing roller-compacted concrete on the southern half of the splash pad, he said. The splash pad is designed to prevent the kind of dangerous erosion that occurred there in February 2017, should the emergency spillway ever be utilized again. It was used for the first time in the dam's 50-year history during the spillway crisis last year, as the department had no other option with a damaged main spillway and a full reservoir. Construction of a roller-compacted concrete buttress which will "further bolster the emergency spillway weir" will start later this year.

Saturday marked the halfway point of phase two, Meyers pointed out. DWR is aiming to have all slabs on the main spillway placed by Nov. 1. However, some work will go on past that point, including clean up, dry finishing and curing. Construction activities will also continue at the emergency spillway. Jeff Petersen, executive project director for Kiewit Infrastructure West Co., said the contractor and employees would take precautions with temperatures forecasted to go back into triple digits. Crews are encouraged to drink two bottles of water hourly and Kiewit ensures that fluids are readily available, Petersen said. He said that foundation cleaning and preparation for the 17,000 square yard upper spillway chute was complete and that installation of leveling concrete and underdrains there was almost finished. Workers are still placing slab anchors in the upper chute and are about 43 percent done, Petersen said. About 50 structural walls will be installed in the top section. It's expected that the first wall will be placed on Aug. 24, Petersen said. Rock crushers on site will produce over 1.2 million tons of aggregate for roller-compacted concrete this year, he said. So far, they've produced 784,000 tons of roller-compacted concrete aggregate.

Kiewit employees have worked around 1,271,000 hours on the project so far, Petersen said. Currently, there are 811 craft and staff employees, including 144 employees of subcontractors, on site, he said. Erin Mellon, assistant director of public affairs, offered a reminder of the last free boat launch and day use days at Lake Oroville, which will be Sept. 6 and 7. Mellon said that DWR was in the process of developing a 2018-2019 flood operations plan with the U.S. Army Corps of Engineers. Oro Dam Boulevard East, with views of the spillway, is down to one-lane traffic starting Wednesday and going through mid-October for underground power line installation. Department officials will meet with members of the Board of Consultants, the group watching over the spillway reconstruction effort, on Sept. 5 and 6.

(Some people don't like the Board.)

Letter: Oroville Dam review board far from independent

Letters to the Editor, August 11, 2018, chicoer.com



Risa Johnson's informative article on the Independent Review Board's report on the Department of Water Resources' plans for the dam may have given some false impressions to the casual reader. First, the IRB is hardly independent. The members were appointed by, paid by and report to the DWR. Second, board members are not experts in what needs to be done to properly address the root causes underlying the gated spillway failures and the related issues: emergency spillway, gated spillway headworks, leaking through the dam and organization. Third, the report only deals with the DWR's plans and their chosen priorities, not overall safety nor the choice of priorities. The report is evidence of a continuation of the inward-looking approach taken by the DWR to its operation of the dam, which brought us the broken spillway. This report gives little comfort to

those of us who believe that a comprehensive, independent, forensic assessment of the risks at the dam is essential to the establishment of trust in the DWR. Thousands signed a petition asking for such an assessment. Dianne Feinstein has had an independent assessment included in the 2019 federal budget. But, the DWR continues to resist truly independent professional commentary. Only four of the five proposed members of this board have been appointed. The fifth member should be selected by the recently formed Local Oversight Committee recently formed by James Gallagher and Jim Nielsen. — Robert Bateman, Oroville

(Oroville video.)

Oroville Dam: See before-and-after video of construction progress

By PAUL ROGERS | Bay Area News Group, August 13, 2018, mercurynews.com

Eighteen months after the dramatic failure of the spillways at Oroville Dam in Northern California, a disaster that led to the evacuation of 188,000 people, construction is on schedule to complete the concrete work in the main spillway by Nov. 1. In recent weeks, 805 workers from Kiewit, the Nebraska-based company that was awarded the main construction contract on the project, have continued to rebuild sections of the massive 3,000-foot-long spillway.



More than 800 construction workers continue to rebuild the main spillway at Oroville Dam, seen here in July, 2017

Earlier this month, the state Department of Water Resources released this video showing before-and-after footage of the project. Crews have methodically filled in giant canyons and crevices that were carved into the hillside at the nation's tallest dam after a section of its spillway, built in 1967, failed during heavy winter rains in 2017. Last year, workers put a final layer of structural concrete over two of the four main sections of the spillway. This year, they are roughly half finished with structural concrete work on the final two sections. They also are rebuilding the spillway walls and the drainage system, and have started to rebuild the huge water dissipaters, known as "dragon's teeth" at the bottom of the chute. The spillway is used to let water out of Lake Oroville, the state's second largest reservoir, and a key pieces of the State Water Project, when the lake fills to near capacity in wet winters.

On Monday, Lake Oroville was 51 percent full, or 73 percent of its historic average for this date. Overall, the largest reservoirs in California, including Shasta, Oroville, Folsom and San Luis, are in better shape, at a combined 102 percent of their historic average for this date because they filled during the heavy winter of 2017. Erin Mellon, a spokeswoman for the state Department of Water Resources, said that some work on the main spillway will continue after Nov. 1, including concrete curing, joint sealing, filling behind the side walls and site clean-up. Work also will continue into 2019 to finish the adjacent emergency spillway, which had been a dirt hillside that badly eroded during the February 2017 emergency, and now will feature concrete reinforcement and deep pilings. "Normally a project of this size and complexity would take years to complete," Mellon said, "but we're working at an accelerated rate to ensure public safety. We are confident that we will meet our public safety milestone in November."

The total cost is estimated at \$870 million, according to a Department of Water Resources update from January that Mellon said has not changed. That includes \$500 million for the work from Kiewit to rebuild the spillways; \$210 million for other work, including debris and sediment removal, power line replacement, building access roads, state staff time, and technical consultants; and \$160 million for the emergency response during the crisis. Also in January, an independent team of experts who reviewed the spillway failure concluded in a report that Department of Water Resources officials were "overconfident and complacent" and gave "inadequate priority for dam safety" for decades at Oroville. They noted that main concrete spillway at the 770-foot tall dam

north of Sacramento, in Butte County, was built in the late 1960s on poor quality rock. The spillway, only seven inches thick in some areas and not adequately anchored, cracked in multiple places in the following years, allowing water to flow underneath. On Feb. 7, 2017, water from powerful winter storms rushed under the massive spillway, which forced up its giant slabs and ripped a huge hole in the structure causing one of the most serious dam emergencies in California history. Go here to see video: <https://www.mercurynews.com/2018/08/13/oroville-dam-see-before-and-after-video-of-construction-progress/>

(Something is going up.)

Proposal to raise one of three Boise River dams favors Anderson Ranch Though highest in river system, Anderson Ranch Dam least complex to raise

By Brad Carlson, August 3, 2018, capitalpress.com

Water managers studying a potential increase in the Boise River system's reservoir storage capacity are focusing on Anderson Ranch Dam in Elmore County, Idaho. The Idaho Water Resource Board is partnering with the U.S. Bureau of Reclamation to study feasibility of increasing reservoir storage capacity on the Boise River, including potential small raises of Lucky Peak, Arrowrock and Anderson Ranch dams. IWRB, at a July 27 meeting, approved Reclamation's recommendation to focus on Anderson Ranch Dam now and continue to evaluate other sites' feasibility in the future.



Reclamation received partial funding for the study of the dams under the December 2016 federal Water Infrastructure Improvements for the Nation Act, which may also authorize funding for construction of projects that by Jan. 1, 2021, are determined to be feasible. To meet the deadline, IWRB approved Reclamation's recommendation to focus on Anderson Ranch Dam initially, the board said in a news release.

IWRB Planning Bureau Chief Brian Patton said Anderson Ranch Dam would be easier to raise than Arrowrock, which has a more complex spillway. Reclamation-owned Arrowrock and Anderson Ranch prioritize irrigation. Lucky Peak, closest to Boise, is a U.S. Army Corps of Engineers dam prioritizing flood control. Arrowrock Dam collects the Boise River's south and middle forks. Anderson Ranch Dam collects the South Fork Boise and is the least likely to fill completely. Nampa & Meridian Irrigation District Water Superintendent Greg Curtis said the district favors any opportunity to increase storage in the Boise River system. Adding reservoir storage would save more water in normal or high-water years to help meet needs in future drought years, important given recent and anticipated population growth, he said. Curtis said the district expressed formal support to Reclamation to proceed with 456-foot Anderson Ranch Dam because the approximately six-foot proposed raise is the most feasible technically, and is in the best position to meet approval and funding timetables. Irrigators, water managers and municipalities were among parties that recently reached a stipulated settlement regarding Boise River reservoirs. The settlement will create a water right for high flows that refill the reservoirs after flood-control releases have occurred, according to the Water Resource Board. The refill water rights will be senior to any water projects that may be proposed in the future that could divert surplus flows from the Boise River.

(Always letters like this.)

Breach the dams now

Aug 8, 2018, mtexpress.com



The U.S. government has spent billions of dollars over decades to try to prevent Snake River anadromous fish from becoming extinct and

recovering sustainable populations of these fisheries. Despite the mitigation efforts, it has failed to improve the continued decimation of these wild fish.

The four lower Snake River dams are no longer needed for producing electricity. It currently costs more to maintain these four dams and their "Compensation Plan" hatcheries than the revenue they receive from power production. The only reason these dams have not been breached is because the subsidized wheat farmers want to ship by barge instead of by rail. Earlier this year, the early warning indicator for Snake River steelhead was triggered. The response from NOAA was to revise the parameters that define the indicator. The entire purpose of the early-warning indicator is to raise the red flags and sound the alarms that the fish are losing and the current survival rates are at the point of no return.

The action agencies don't seem to understand that there are no second chances from extinction.

The loss of these Snake River salmonids will have a trickle-down effect on more than the southern resident orcas. For millennia, the millions of carcasses from spawning adults hundreds of miles inland have provided food for other animals and much-needed nutrients for hundreds of miles of habitat and the Northwest ecosystem.

Humans set up a system to prevent extinct and that system is being rewritten to kick the can down the road.

Time has run out. Breach the four lower Snake River dams now, this year, 2018. Extinction is forever. For decades of resources, facts and figures visit bluefish.org. *Matt Chaney, Co-director, bluefish.org*



(A little history.)

As It Was: Copco Dams Provide Electricity for Klamath Growth

By TODD KEPPLER • AUG 8, 2018, ijpr.org

The first large hydroelectric facility on the Klamath River entered service 100 years ago, providing an abundant source of power for residents of Northern California and Southern Oregon. The dam, known as Copco 1, generated 11 megawatts of electricity. Some 400 workers spent several years constructing the dam and power plant for the California Oregon Power Co., known as Copco for short. The new source of power was especially important to the fast-growing city of Klamath Falls, where lumber mills and other factories depended on smaller power plants on Link River and transmission lines crossing the mountains from the Rogue Valley.



Copco officials acknowledged that Copco 1 would present a permanent barrier to fish passage on one of the most important salmon-producing rivers on the West Coast, but said that would be mitigated by construction of a fish hatchery on nearby Fall Creek. Copco built three more large dams on the Klamath River before eventually being folded into the Pacific Power and Light Company, which continued to operate the dams for another half-century. Present-day plans to restore fish runs call for removal of all four dams, starting as soon as the year 2020

(Some people get it.)

Damning Conowingo Dam [Editorial]

baltimoresun.com, Aug 11, 2018

In recent years, Conowingo Dam has become a frequent target of blame from environmental groups and some Maryland state officials, most recently Gov. Larry Hogan, for contributing to Chesapeake Bay pollution. Never mind that there are several other dams along the Susquehanna River above Conowingo, or that there are scores of other rivers and creeks that empty into the Bay other than the Susquehanna. Conowingo Dam is easy to pick on because the dam is large, located in Maryland and is owned by an out-of-state corporation, Exelon, which presumably has deep pockets and needs to deal with regulators in states where it operates its core businesses of producing and distributing electricity.



What's curious to us is how all of a sudden, as some would tell it, the bay is becoming more polluted because a 90-year-old dam no longer effectively traps soil and other particles eroding along a watershed that stretches for thousands of square miles upstream, nor is it capable of containing the other larger detritus, much of it manmade, that also journeys southward. Some of the most immediate concern has arisen because during the period from July 24-26, amid several days of almost nonstop rainfall in Maryland and other states that border the Susquehanna, the operators at Conowingo began to open the dam's spill (or flood) gates to compensate for the rising river. At the river's peak flow – approximately 365,000 cubic feet per second on the evening of July 26 – 20 of the dam's 50 spill gates were opened, according to an Exelon spokesperson.

The river crested a short time later and gates were gradually closed over the next eight hours, but some of the debris that had been backed up behind the dam likely got through and headed downstream, prompting state officials to warn about hazards to boaters. As would be expected, some of the junk ended up on local shorelines or continued down the bay. It's important to keep in mind, however, that this was not a major weather event in terms of the dam and its operation. According to Exelon, a flood emergency plan downstream isn't activated until at least 30 gates are opened.



Surely, Hogan and other Maryland officials have a right to be concerned about the role Conowingo Dam, and similar facilities upriver, may play in contributing to pollution of the Bay, particularly when there has been an improvement in overall water quality. Hogan said this week he doesn't want to see a reversal in such efforts, and he called on leaders of other states in the watershed – Pennsylvania, New York, Virginia – to do more on their end. But at the same time all this was taking place, The Baltimore Sun reported that "intense rain in July and subsequent sewer line breaks in August caused more than 85 million gallons of sewage-tainted water to flow into Baltimore's harbor over two weeks, city officials said."

"Much of the overflows were because the city's water and sewage system releases tainted water when rains are too heavy for the system to hold," The Sun's report, by Luke Broadwater, continued. "Baltimore's sewer system was designed more than 100 years ago, and city officials say the overflow problem will continue until at least 2020 while they work on \$2 billion in infrastructure upgrades." Again, Baltimore's sewer system isn't the only culprit for the Bay's pollution. The water quality of a number of Upper Bay tributaries, while improving, is still compromised by agricultural chemical runoff, failing private sewage systems and illegal waste dumping.

Where Conowingo Dam is concerned, Exelon does need to address the debris buildup – even though it didn't create it, which will no doubt be costly. The call for a more permanent solution, such as dredging out nine decades of muck under the water, has an astronomical price tag that potentially raises its own set of environmental issues.

Hogan has put Exelon on notice he wants these issues addressed, but it doesn't change the fact that Conowingo Dam is not the core cause of downstream pollution. So, while the dam can't stop as much of the sediment and junk from going into the Bay as it once did, prior to 1928 it didn't stop any of the coal and other mining wastes coming down from the north – or the masses of ice every spring thaw that tore through buildings along the river's Maryland shores – because there was no Conowingo Dam. Let's just keep the bigger picture in focus when it comes to water quality in the Susquehanna and the Chesapeake Bay and its other tributaries.

(Wants to be ready for the next hurricane.)

Martin: Additional dam gates 'most important' flood prevention project for Lake Houston area

By Melanie Feuk, Staff Writer | August 10, 2018, chron.com

Houston City Council Member Dave Martin, a representative and resident of the Kingwood area, believes the addition of 10 gates to the Lake Houston dam is the single most important project that can be done to prevent future flooding in the Lake Houston area. The city of Houston is seeking nearly \$50 million in grant funds and contributions from the state and county to bring the new gates to fruition, Martin said. "Our ultimate goal is to make sure we have the ability to release as much, or more, water as is sent our way by the San Jacinto River Authority and build the capacity in the river and the lake that we so desperately need," Martin said. "The ability to control the water level in Lake Houston is going to be paramount to making sure we don't have an incident like we received after Harvey, so if anyone sends us water we have the ability to release water out of Lake Houston, down the spillway and eventually into the Gulf of Mexico."



In late July, the city submitted an application for \$48.5 million in grants from the Hazard Mitigation Grant Program through the Federal Emergency Management in conjunction with the Texas Department of Emergency Management. The \$48.5 million would be put toward the projected \$70 million cost of the 10 additional gates. Meanwhile, the gates are also slated to receive funding from the Harris County Flood bond referendum if it passes. "There is going to be a partnership share and a local match share that will be worked out hopefully after the bond passes," Martin said. "If you look at what our share could be, partnership share, it could be this \$48.5 million and we're more than halfway home."

There are other projects vying for the FEMA/TDEM money, but Martin said based on the positive feedback the city has heard back from TDEM about the dam gates project submission, he feels fairly confident in this project's chances of being awarded the funds. Additionally, Martin plans on traveling to Austin on Sept. 6 and 7 to meet with Governor Greg Abbott, Lieutenant Governor Dan Patrick and Land Commissioner George P. Bush to shore-up support for the dam gate project. "I'm getting in their ear once again about projects for our area and making sure that while we have Harris County's commitment, we also have the state's commitment as well," Martin said. The additional Lake Houston dam gates would be intended to mitigate flooding in the Lake Houston area, working in conjunction with the flood bond's proposed detention facilities on Spring and Cypress Creeks, proposed dredging projects in the San Jacinto River's East Fork and Lake Houston, as well as the U.S. Army Corps of Engineers' dredging project in the San Jacinto River's West Fork. USACE is working to start the act of dredging at the beginning of September

and last until April 2019, according to the contract awarded to Great Lakes Dredge and Dock in July.

(Will they save the dams?)

We must band together to protect our most important regional asset — the Snake River dams

SPECIAL TO THE HERALD, August 11, 2018, tri-cityherald.com

Over 20 years ago, the debate about the dams began. Some wanted the dams removed because they were concerned about the salmon runs. Others knew taking out the dams threatened low-cost power, river navigation, irrigation, and recreation. Nearly 2,000 people representing agri-business, farms, utilities and other businesses rallied on the cable bridge that links Pasco and Kennewick to support the dams and reiterated that fish and dams could co-exist.



This April 11, 2018 photo shows an elevated fish ladder designed to help migrating fish swim through the Lower Granite Dam on the Snake River near Alмота, Wash. Nicholas K. Geranios AP

Since 1978, nearly \$16 billion has been invested to protect fish. This includes improvements made to dams, habitat restoration, and hatchery programs. Over the years, significant improvements have been made at the dams to improve fish survival since the early 1990s, and today the four Lower Snake River dams have some of the most advanced and successful fish passage systems in the world. The result? Fish counts have trended upward and the dams are still keeping the lights on.

Yes, there are still challenges. Ocean conditions, predators, harvest and even the dams are obstacles for the fish. Yet the overall salmon returns in 2015 were the highest on record since counts began at Bonneville Dam in 1938. Despite the billions of dollars invested and the increase in fish survival, there is still the ongoing push to remove the dams with no consideration to the benefits. The hydro system provides low-cost, reliable, carbon-free power that supports our economy. The dams also enable navigation, irrigation, flood control and recreation. The dams fund fish conservation and restoration programs paid by utility customers through their electric bills. Between 10 and 20 percent of the typical electricity bill for a Northwest family or business goes to pay for fish and wildlife programs.

The benefits of the dams are often downplayed. Few seem to know that the four Lower Snake River dams are part of a complex Northwest energy solution with the capability to generate over 3,000 megawatts of power, enough for over 800,000 average U.S. homes. Because of their location and the generator sizes, these dams are critical links in the synchronized operation of the Northwest's federal hydropower system. Dams provide a reliable, constant source of power that is always available and enables integration of intermittent renewable resources such as solar and wind, which are not available when the sun is not shining and the wind is not blowing. The Northwest's demand for electricity is highest in the winter. The four dams provide critical winter energy and capacity to serve regional loads. Because of the seasonal variation in power flow, the additional generation available from the dams provides improved voltage stability and reliable transmission grid performance.

According to BPA, Ice Harbor Dam is critical from the transmission operations point of view, because it provides essential support for both power and voltage to the Tri-Cities area. The multi-purpose Snake River dams — Lower Granite, Ice Harbor, Little Goose and Lower Monumental — work hard for our region. The long-term investment in the dams' structure and updated operations have successfully improved passage for better salmon survival. Dams and salmon successfully co-exist. Join us at RiverFest on Sept. 8 in Columbia Park, Kennewick. This family event will have

fun activities, interactive exhibits and food vendors from 11 a.m. to 3 p.m. to celebrate the benefits of the hydrosystem and the Snake River dams. *Chad Bartram, General Manager, Benton PUD; Clint Whitney, Energy Services Director, City of Richland; Tim Nies, General Manager, Franklin PUD; Michael J. Bradshaw, General Manager, Benton REA*

(It's not the dams' fault,)

Blaming Snake River dams for Orca woes a hoax

By John McKern, 8/14/18, union-bulletin.com



I share Lucinda George Simpson's concern (bit.ly/2nBB18g) about the southern resident killer whale population of the Puget Sound that was expressed in her op-ed piece published Sunday in the U-B, but I object to her perpetuating a hoax that the Lower Snake River caused the decline. Historically, the Snake River and its tributaries were a major contributor to Columbia River salmon runs. Two-thirds of the spring and summer Chinook Snake River habitat and 85 percent of the fall Chinook was lost by the time Idaho Power Company built its three Hells Canyon dams. **Snake River habitats were severely depleted before the Lower Snake River dams were built.** Research shows that juvenile Chinook bypass the Puget Sound when migrating to rearing areas up the coast of British Columbia and Alaska. The adult salmon follow the same path back to their spawning grounds. **For decades, the Washington state Department of Fisheries (now Department of Fish and Wildlife) relied heavily on hatchery Chinook to supply fish for harvest, and many of the Puget Sound wild stocks were severely reduced or extirpated by overfishing.**

Ken Balcomb of the Puget Sound Orca Research Center has studied the southern resident orcas since 1976. **He found that lack of food and interference in catching food by commercial shipping and other noise makers were the cause of their decline.** Southern resident orcas prey on Chinook salmon passing through the San Juan Islands on their way back to Canada's Fraser River. They prefer Chinook, typically larger and fatter fish, but they will eat other species of salmon and other fish. Southern resident killer whales depend on Fraser River salmon in the Puget Sound, not Snake River salmon. Research and corrective measures at U.S. Army Corps of Engineers Snake and Columbia river dams have increased survival through the eight dams in normal flow years to 65 percent for juveniles and over 80 percent for adults. **That equates to 95 percent survival per project for juveniles and over 98 percent for adults. Juvenile salmon barged around the dams have experienced over 98 percent survival consistently since the 1980s.** Fish hatcheries and natural habitat restored in recent decades have greatly increased Columbia River Chinook and other salmon runs. By 1938, commercial fishing had reduced the returns by 95 percent, to less than one-half-million fish over Bonneville Dam. **The returns first exceeded a million in 2001 and have ranged between two and three million for the last 10 years.** Blaming the Lower Snake River dams is a hoax. *John McKern. Walla Walla, WA*



Hydro:

(Hard to believe 60 years has gone by.)

Power Authority celebrating Massena hydropower project's 60th anniversary with music, fireworks, food Aug. 24

August 3, 2018. northcountrynow.com

MASSENA, NY – The New York Power Authority (NYPA) is celebrating 60 years generating energy at its St.



Lawrence-Franklin Delano Roosevelt Power Project with a community celebration and an historical retrospective featuring photos, presentations and memorabilia from the very beginning of the plant's construction. The project, which first made power in July 1958, was the first large hydroelectric plant in New York State and contributes, along with NYPA's other generating plants, up to 20 percent of New York State's energy, said a NYPA press release. Members of the public are invited to join in the commemoration of this milestone this summer by attending the following events:

From August through October, the Celine E. Philibert Cultural Centre and Museum in Massena will showcase an exhibit on the early history of NYPA's work on the power project, including photographs and mementos dating back to the dam's construction. For museum hours, visit Massena Chamber of Commerce. On Friday, Aug. 24, NYPA will host a summer celebration for the community at its Frank S. McCullough Jr., Hawkins Point Visitors Center and Boat Launch on Hawkins Point Road in Massena, featuring live music, fireworks and a free ice cream social. Ice cream will be served from 4-7 p.m., followed by a performance of Fort Drum's Band. The celebration will conclude with a fireworks display at dusk. The public is also encouraged to share stories of their own experiences, or that of their family members, from NYPA's construction and operation over the past six decades. Stories, photos, messages and other materials can be sent to social.media@nypa.gov and will be shared on NYPA's social media platforms throughout the summer. **All events are free and open to the public.**

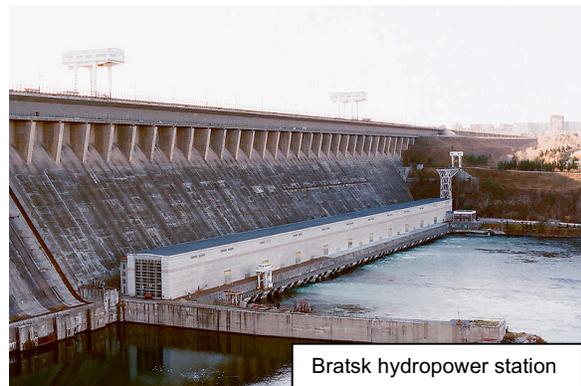
(Another analysis of hydropower.)

Hydropower: why should we use it?

By Scarlett Evans, 6 AUGUST 2018, power-technology.com

The number of hydropower projects has risen substantially in the last few years, though critics warn it can prove a dangerous energy source. Just what are the benefits of hydropower, and should we use it?

Attempts to enact a global shift to renewable energy sources has given rise to a spate of plans for hydropower dams across Southeast Asia, eastern and southern Africa and South America, in a race to dominate the burgeoning industry. The scale and rapidity of construction plans have, however, caused critics to warn of its dangers, with the recently collapsed dam in Laos providing a tangible example of exactly how the rush for hydropower can turn deadly. Scarlett Evans looks at just what benefits the energy source holds.



Bratsk hydropower station

What is hydropower?

Hydropower was one of the first sources of energy to be harnessed to turn wheels and perform mechanical tasks in early industrial machinery before being adapted more recently to generate electricity. Now, according to the International Energy Agency, hydropower is the largest source of renewable energy in the world, accounting for around 17% of the world's electricity. A reduction of larger projects developed in China and Brazil has meant net capacity growth has dwindled in recent years, but cumulative capacity is still predicted to increase by a further 119GW by 2022. The rise in hydropower comes hand-in-hand with a global shift towards renewable energy sources in a bid to achieve the clean air targets set in the 2015 Paris Agreement and cut down on carbon emissions generated by traditional fossil fuels.

What are the benefits?

Hydropower derives from moving water and so is a clean energy source with the only pollution occurring during the construction of the hydroelectric plants. No water is consumed in the process, but rather electricity is produced from the kinetic movement of the water's flow. Once operational, hydropower plants produce a reliable source of energy as adjusting the energy output is a relatively simple task, raising or lowering the water flow in accordance with consumer needs. As hydroelectric plants immediately provide power to the grid, they can provide essential backup power during major electricity outages or disruptions. Nations with an existing resource of hydropower often use it as a base load energy source. Water is a domestic energy source, meaning countries with a water supply can produce their own electricity independently of international fuel supplies. Hydroelectric sites can also offer flood control, irrigation and water supply to areas. Unlike wind and solar, which are dependent on the time of day and weather conditions, water is always available. In addition, hydropower is one of the cheapest types of energy to source. While the construction and installation of infrastructure can be expensive, once the facilities are established harnessing energy from water is low cost. Sites also tend to have a long lifespan, with the average plant lasting between 50 and 100 years.

What are the negatives?

Perhaps the most notable detrimental effect of hydropower is the potential disruption facilities pose to ecosystems. Damming water and installing roads and power lines changes the flow, depth and velocity of water and can impact fish habitats, as well as their mating and feeding patterns. In addition, woodlands are often disturbed as a large amount of space is required for the installation of facilities, sometimes necessitating the felling of trees to make space and disrupting any wildlife in the area. The machinery used in the construction period can also prove damaging, not only through disturbing animals and plant life and nearby communities, but also in the greenhouse gases emitted. Holding such vast amounts of water can also be dangerous, as proven with the recent flooding in Laos following the collapse of the Xe-Pian Xe-Namnoy hydroelectric power plant. When construction of the dam was almost complete, the 'saddle dam' broke following a period of heavy rain in the area, causing thousands to lose their homes and the deaths of at least 26 people. A report released in December last year by the London School of Economics (LSE) warned against the multiple hydropower plants planned for construction in eastern and southern parts of Africa. It argues that they could in fact increase disruptions to electricity supply as many of the sites will depend on similar rainfall patterns, and as such will be susceptible to the same dry periods. Lead author of the study Professor Declan Conway said the results "underline the need for effective planning of hydropower in Africa", something which seems true of all future hydropower projects.

(More hydro for Alaska.)

Hydropower within reach for diesel-dependent community

By Alanna Elder | Aug 9, 2018, kfsk.org

Building is underway for a new hydropower facility in the Southeast Alaska community of Kake. Staff from the Inside Passage Electric Cooperative predict that the project will cover more than half of Kake's power needs. Residential users likely won't see lower power bills, and the benefits to schools and businesses will be spread across the utility's 5 member communities.

Kake Tribal Fuel Company is a small corner store and gas station owned by the village corporation. Just a few yards away is a second store with the same owners called Kupreanof Mini. Keeping the two in lights and refrigeration isn't cheap, according to Kake Tribal Board Member Delbert Kadake. "I think we spend around 800 bucks over at our fuel station and about 1 thousand bucks since we opened up our mini mart, so under 2 thousand for running both of them," Kadake said.



Those numbers may come down with the construction of a new hydropower plant at the old hatchery near town. Jodi Mitchell is CEO of Inside Passage Electric Cooperative, or IPEC, which provides electricity in Kake. Right now, all of the power IPEC generates in Kake comes from burning diesel. So, Mitchell said, it is hard to say exactly how much the project will save without knowing how future fuel costs. But, she gets asked this question a lot. "So I went back 8 years, and discovered that if the project had been online over the past 8 years the project would have saved our members \$2.7 million," Mitchell said. That breaks down to about \$3.5 per kilowatt hour, but does not mean every person who gets power from IPEC would save that much. Since residential customers in Kake already get a state subsidy to make their electricity affordable, they won't see much change at all. "The savings for the residential customers stays with the Power Cost Equalization program," Mitchell said. "So the state will be paying less into the subsidy. However the businesses, the schools, the churches, any business that does not receive Power Cost Equalization will see a rate reduction."

Kadake's position on the project is basically why not? Maybe it will spur economic development in Kake. Maybe lower costs will make it possible to reopen the local cold storage facility. Maybe it will help the corporation build a local tourism economy, which is its new focus for bringing jobs to Kake. Kadake said he would like to provide more food and lodging options to visitors. "The people that do spend money are the independent travelers, the people that fly in and use the ferry. They're the ones that spend time in your communities and they're the people that we want to target," Kadake said. Still, he is skeptical that hydropower will help people. That is because Kake isn't the first of the five communities IPEC serves to get a project like this in recent years. Hydropower came online in Hoonah in 2015, providing about a third of that community's power. The utility has other plans in the cue, including a second project in Hoonah and one in Angoon. Electric rates for IPEC members are the same in Hoonah, Kake, Chilkat Valley, Angoon, and Klukwan, so the benefits of these projects spread across all of these users.

"Up in Hoonah it's supposed to be helping out big businesses there but it hasn't had the trickle-down effect and it's not gonna help out our regular citizens of Kake. But for 10 million dollars you oughta be doing something. That's a lot of money," Kadake said. Building the Hoonah project cost \$10 million dollars and was grant-funded. Kake's costs about 7 million, paid for by a combination of state and federal money. So this construction won't create debt to be paid back with higher rates for consumers. Fortunately for IPEC, there was already a dam near the hatchery in Kake, originally built to provide drinking water. It has not been used for years, and never for power, but Mitchell said, "there's an outlet, and an intake. Everything is here to convert it to a hydro project. So whoever engineered that dam was really brilliant and I'd sure like to thank them."

Possibly the surest result of getting hydropower in Kake is that it will be a cleaner than burning diesel alone. Mitchell did some calculations over the phone. "It looks like over 2 million pounds of CO2 in savings per year," she said.

Of course, there are other options for renewable energy besides hydropower. In Kake, there are at least two sets of solar panels. One belonged to a private citizen, the other to the Organized Village of Kake. Mitchell said it is not economical for the small utility to build solar or wind projects, nor will they do incentives like net-metering, where they take off from a user's electric bill the extra electricity they produce with their own solar panels. IPEC will be one step further on its slog toward cheaper, cleaner power when the Kake project opens. Right now, contractors are mostly moving dirt around to prepare space for the penstock, the giant pipe that will lead from the existing dam to the hatchery. They will build a powerhouse at the hatchery next summer. Mitchell expects construction to finish in October 2019, though she said it could take longer

(Getting new stuff.)

Duke Begins \$200M Upgrade At South Carolina Hydroelectric Project

By DAVID BORAKS • 8/13/18, wfae.org

Duke Energy has begun a \$200 million project to add electrical generating capacity at a big hydroelectric dam in South Carolina. The Federal Energy Regulatory Commission on Aug. 6 approved a license amendment that lets Duke install more powerful turbines at the Bad Creek Hydroelectric Station on Lake Jocassee, in northwest South Carolina. The dam is a kind of natural battery - what's called a pumped-storage facility. Duke pumps water up from the lake when power demand is lower and releases it to generate power when demand is high, such as hot summer days.



Duke plans to replace Bad Creek's four existing turbines by adding one per year between 2019 and 2023, according to filings with FERC. The new, more efficient turbines will increase the station's total generating power from 1,065 megawatts to 1,400 megawatts. Duke says the upgrade eventually will allow it to serve an additional 250,000 customers. Duke also says the project will help balance power from other sources and increase generating capacity during periods of high demand. Bad Creek opened in 1991 inside a mountain next to the lake. It's one of two pumped-storage projects in Duke's power network. The other is at the opposite end of Lake Jocassee, above Lake Toxaway.



Environment: (Recreation article.)

Mineral Hidden Gems: Jennings Randolph Lake

Aug 10, 2018, newtribune.info, For the News Tribune

JENNINGS RANDOLPH LAKE, WVa - The Blue Dragon Boat Regatta taking place at Jennings Randolph Lake Saturday is meant in part to draw attention to this beautiful part of Mineral County, tucked away in the highlands near Elk Garden. First order of business for the event is to give kids some fun outdoor time and connection with other kids from across the county, but just the drive to the lake can make folks feel they are entering an entirely new and different region.

Originally named Bloomington Dam, the lake was constructed as part of a flood control plan authorized in 1962 and finished in 1981.



The name Jennings Randolph Lake was chosen in 1987 to honor US Senator Jennings Randolph for all his efforts on behalf of West Virginia. The nearly 300-foot-high and over 2,000-foot long dam is made of rock and earth. The water surface, which measures over 952 acres, is known most for the public recreation Mineral County and Maryland residents enjoy, but the lake was built also to increase water quality and reduce potential flood damage downstream on the North Branch of the Potomac River, and below. Additionally, the lake serves as an emergency reservoir for the Washington, D.C., metropolitan area.

The largest part of the surface and shoreline area is managed by the US Army Corps of Engineers and flows along over five miles bordering West Virginia and Maryland. Areas made

available to the public include fishing and boating from several boat ramps, beach and picnic areas, and the Robert C. Craig campground. A hydroelectric facility was proposed at the dam by the Fairlawn Hydroelectric Company in 2008, a subsidiary of Advanced Hydro Solutions LLC. The measure continued steps toward construction with this summer's House of Representatives passage of bill HR 2122, which extended the license to construct the dam, introduced by Representative David McKinley, a companion to the bi-partisan bill sponsored by Senators Joe Manchin and Shelly Capito in March of this year, with signing at the White house on June 23, 2018.

In addition to the Craig Campground and Shaw Beach, West Virginia visitors can enjoy the Howell Run Picnic Area, the Howell Run Boat Launch; and the West Virginia Overlook. After visiting you may also be able to come back and describe a "Waffle Rock." Maryland visitors also have a Maryland Overlook and a Maryland DNR Boat Launch. The Army Corps provides maps and information on the lake for residents and tourists to the area. Their Jennings Randolph Lake "Simple Pleasures" brochure invites: "Enjoy a cool refreshing swim at Shaw Beach during those dog days of summer. Or, relax on one of the redwood benches and cool off with a lakeside breeze while watching the kids having fun on the playground equipment or building sand castles on the beach. Restrooms with changing areas are close to the beach if you change your mind and want to take a dip in the lake. Pack a picnic lunch and eat under the shade of a tree or on one of the picnic tables." Ranger staff and campground hosts will be happy to give assistance while you are there.

For directions to the lake: most of Mineral County will find their way to Route 50 west and climb the Allegheny Front Mountain to Route 42 at the top, and turn right toward Elk Garden. Upon entering Elk Garden you will see signs for Jennings Randolph Lake, directing you to turn north on Route 46 (Shaw Road) and follow to Jennings Randolph Lane on your left, or follow the signs to Shaw Beach. **For those coming to the lake from Maryland**, State Route 135 atop Backbone Mountain will bring travelers to Mt. Zion Road which descends the mountain to the Maryland Boat Launch. On the maps or from the air, the Blue Dragon can be seen. The lake's nickname titles the event this Saturday that takes place at Shaw Beach, beginning at 10 a.m.

To learn more, go on Facebook to 2018 Mineral County Parks and Recreation Boat Regatta for registration information and more details. Call 304-788-5732 or email mcparksandrec@outlook.com. Or you can call the Park Ranger at the lake on 304-355-2346 for this event or for general information about enjoying another of Mineral County's Hidden Gems: Jennings Randolph lake

(They don't lose many cases.)

Editorial: Judge deals blow to enviro group in local dam lawsuit

Bulletin Editorial Board, The Bulletin, bendbulletin.com, Aug. 10, 2018

U.S. District Court Judge Michael Simon recently dismissed the case filed by the Deschutes River Alliance against Portland General Electric, alleging water quality violations at the Pelton Round Butte Dam. Judge Simon made the right decision. It doesn't mean that the Deschutes River Alliance's goal of trying to bring cooler and cleaner water to the Deschutes River is wrong. But the judge ruled that the environmental group did not provide sufficient facts that the hydroelectric project is operating in violation. He granted a motion for summary judgment.



The Pelton Round Butte dam was completed in 1964 and is a system of three dams along the Deschutes. It's a partnership between PGE and the Confederated Tribes of Warm Springs. The hydroelectric project produces power for about 150,000 homes. But there is a tradeoff. The dams interrupt the natural passage of fish and other wildlife. The migration of salmon and

steelhead is cut off. The dams also can cause water quality issues, making the river less hospitable to wildlife. **The most striking step PGE and the tribes took to attempt to mitigate those tradeoffs was building a 273-foot tower in the river.** It helps transport fish around the dam and better control water temperature. What the Deschutes River Alliance argued in its 2016 lawsuit is essentially that the solutions repeatedly failed to meet standards and made water quality worse downstream. The difficulty is that it can be impossible for PGE and the tribes to operate the dam in a way that it will at all times get everything absolutely right, as the judge pointed out. For instance, “there are no measures that can lower pH without adversely affecting temperature, dissolved oxygen, and fish passage.” **The Deschutes River Alliance has said it is looking at the next steps it will take.** The case has already cost taxpayer and ratepayer money in a quest for compliance with standards that are not possible to meet at all times. Taxpayers and ratepayers should be dismayed if it goes on any longer.



Other Stuff:

(Where do you want to live?)

5 US Cities With Most, Least 'Nice' Days

The top 5 all fall in one state

By Jenn Gidman, Newser Staff, Aug 8, 2018, newser.com

(NEWSER) – **"Nice" weather may differ depending on taste (some people just can't get enough of an all-day thunderstorm).** The Washington Post has applied its own definition—including at least partial sun, temperate thermometer readings, gentle breezes, no rain or snow, and not much humidity—and looked at which major US cities can claim the most, and least, number of pleasant days per year. **Here, the top five cities that will make you never want to head indoors (they're all in one state), plus the number of nice days you can expect from each:**



1. Long Beach, Calif.; 210
2. Los Angeles; 182
3. San Diego; 178
4. San Jose, Calif.; 170
5. Oakland, Calif.; 138

Read on for the cities that could use a weather boost.

1. Anchorage, Alaska; 20
2. Honolulu, Hawaii; 31
3. Brownsville, Texas; 32
4. Corpus Christi, Texas; 36
5. Wichita, Kan.; 38

Check out other comfortable climes here: https://www.washingtonpost.com/news/capital-weather-gang/wp/2018/08/07/the-united-states-of-nice-days-heres-where-and-when-to-find-the-nations-most-frequent-ideal-weather/?noredirect=on&utm_term=.178b459a0653

These states have the deadliest weather: <http://www.newser.com/story/246621/10-states-with-the-deadliest-weather.html>



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