2/12/2016



Some Dam – Hydro News™

And Other Stuff

i

Quote of Note: *"Happiness is someone to love, something to do, and something to hope for." - - Chinese Proverb*

Some Dam - Hydro News → Newsletter Archive for Back Issues and Search http://npdp.stanford.edu/
Click on Link (Some Dam - Hydro News) Bottom Right - Under Perspectives

"Good wine is a necessity of life." - -Thomas Jefferson
Ron's wine pick of the week: **2012 Zuccardi Cabernet Sauvignon "Q"**
"No nation was ever drunk when wine was cheap." - - Thomas Jefferson

Dams:

(Let's hope the failure predictions are wrong, but sounds bleak.)

Mosul dam .. signs of collapse, warnings of a catastrophe

english.alarabiya.net, 29 January 2016

To view this video please enable JavaScript, and consider upgrading your web browser

http://english.alarabiya.net/en/webtv/reports/2016/01/29/Mosul-dam-signs-of-collapse-warnings-of-a-catastrophe.html

(Hold down the control key and click on the website URL>)

Mosul Dam in northern Iraq is in “moderate” danger of breaking down due to months of neglect by the Iraqi government, a U.S. official said. ISIS seized the dam in the summer of 2014, but Iraqi forces and Kurdish fighters, with coalition air support, took it back within weeks. ISIS militants took all the equipment they could get their hands on putting the dam at risk, according to the official.

(Will someone take this seriously?)

Union of Muslim Scholars in Iraq warns of collapse of Mosul Dam

middleeastmonitor.com, 30 January 2016

The Union of Muslim Scholars has strongly condemned the negligence of successive Iraqi governments regarding the maintenance of the Mosul Dam, warning of serious dangers if it was to collapse, Quds Press reported on Friday. The Union said in a statement that specialists have been warning of the possibility of the dam’s collapse for a long time as urgently needed maintenance was halted.

“This dam obstructs about eight billion cubic meters of water,” the statement said. “In case it was collapsed, there would be a real typhoon.” According to the Union, the warning alerts raised by specialists and different international sides have been repeatedly ignored. “Collapse of the dam will take the lives of millions of civilians,” the Union’s statement said. The Union also accused the consecutive Iraqi governments of adopting sectarian policies aimed at neglecting the Sunnis.
“The sectarian governments does not feel it enough to let Iraq sink in a sea of blood, but they want to increase its tragedy by having it sunk in water,” the statement added. Situated on the Tigris River, the dam is the largest in Iraq and the fourth-largest in the Middle East. Since the US invasion of Iraq, regular maintenance of the dam has been halted and specialists have repeatedly warned of its possible collapse.

(Guess they got someone’s attention. Hard hats and bullet proof vests required.)

Iraq Awards Contract for Repairing Major Dam

By qassim abdul-zahra, associated press, abcnews.go.com, Feb 2, 2016

BAGHDAD — Iraqi officials say an Italian company has been awarded a contract to overhaul and maintain the Mosul dam in the country's north, days after the top U.S. general in Iraq warned of its possible collapse. Government spokesman Saad al-Hadithi told The Associated Press the Cabinet awarded the contract to Italy's Trevi group Tuesday. He had no precise figure for the contract's value. A Cabinet official told AP it was worth $230 million. He spoke on condition of anonymity because he was not authorized to speak to the media. News of the contract came just days after U.S. Army Lt. Gen. Sean MacFarland warned of dam's potential collapse, which could cause mass flooding. Built in the 1980s, the dam is situated on soft mineral foundations, easily dissolved by water.

(Then why are they fixing it.)

Officials and engineers deny reports saying Mosul Dam in danger of collapse

By Rudaw, 2/1/16, rudaw.net

ERBIL, Kurdistan Region - Officials and engineers at the Mosul Dam northwest of Baghdad denied US media reports about threats to the facility. Speaking to Rudaw Abdullah Taaqi, deputy manager of the Mosul Dam's electricity station, assured people of the safety of Iraq's biggest dam, saying he was surprised by the report. "I was only 20 when I first started working here and now my hair is turning all white. But the dam is exactly as it always was," he said.

According to media a US media report, the Mosul dam could collapse under water pressure, inundating the city of Mosul, Iraq's second-largest city, and parts of the capital, Baghdad. Analysts also said that such disaster could cause up to one million deaths and would displace half a million others.

Concerns about the dam's safety first surfaced after the Islamic State (ISIS) group seized Mosul in June 2014 in a massive blitzkrieg. There has been speculation that the militants would try to bomb the dam in the event of an offensive to liberate Mosul. There are rumors that an offensive for Mosul could be launched this spring or summer. Taaqi explained that worries about the dam have also surfaced because part of the facility is currently not working due to technical issues.

"The station is capable of producing 1,100 megawatts of electricity but due to technical issues now it only produces 750 megawatts. The threats they are talking about is due to the fact that water is only falling out only on one side, unlike before, when it poured down two sides," he explained Taaqi dismissed claims of life-threatening danger at the dam as mere rumor. The Mosul dam is the biggest in Iraq is fourth-largest in the Middle East. Jassm Mohammad, an engineer who has been working in the technical department of the dam for more than 15 years, also sees no reason for panic. "The problem they are talking about existed from day one," he said, adding that it is simple and easy to resolve. According to another engineer, Karim Amedi who claimed he is monitoring the dam day and night, "there is no threat of collapse." Iraqi officials in Mosul province share the same view. Naufal Hamoudi, the exiled-governor of Mosul province, told Rudaw that some parts of the dam need simple repairs. "We told Baghdad there is no big threat and we asked for reconstructing some parts," Hamoudi said.

(Dams don't create pollution, they just trap crap discharged in rivers by others.)

The real story on the Conowingo Dam and bay pollution

baltimoresun.com, 1/29/16

U.S. Geological Survey sets the record straight on pollution and the Conowingo Dam.

Carroll County Commissioner Richard Rothschild's claim that environmental groups and the federal government are downplaying the Conowingo Dam's contribution to Chesapeake Bay pollution and blaming farmers instead is anything but accurate ("Rothschild uses address to discuss Conowingo Dam, bay pollution," Jan. 12)/ The U.S. Geological Survey documented the increase in sediment and phosphorus pollution coming from the dam In 2012.

And in 2015 we released a report that concluded that manure and fertilizers laden with excess nitrogen and phosphorus were the main causes of degraded water quality on the Eastern Shore. We encourage the public to go to our website and read our report on the Eastern Shore for themselves. It is an accurate, useful summation of the state of the science about nutrients from Eastern Shore waterways and their contribution to the Chesapeake Bay watershed. The USGS stands behind its findings. *Dan Hippe, Reston, Va. The writer is deputy director of the U.S. Geological Survey, Northeast Region.*

(Do we ever learn from history?)

Answers prove elusive in deadly 1928 St. Francis Dam disaster, author says

By Claudia Boyd-Barrett, 1/30/16, vcstar.com

Floodpath, looking downstream

Almost 90 years ago, in the middle of the night, a deadly deluge of water poured out of a canyon northwest of Los Angeles toward thousands of unsuspecting people asleep in Ventura County. It was March 12, 1928, and the St. Francis Dam — an enormous concrete barricade holding back a 12 billion gallon reservoir — had collapsed. The torrent of water gushed down the Santa Clara River through Piru, Fillmore, Santa Paula and Saticoy, sweeping away homes, livestock, vegetation and people.

By the time the water reached the ocean, it had taken more than 400 lives and left thousands homeless. The disaster, although seldom mentioned in history books, is considered one of America's greatest civil engineering failures. Jon Wilkman, an author and Emmy-winning filmmaker, set out to uncover the truth of what happened, the drama that ensued in the disaster's aftermath and the real reason for the dam's collapse. On Saturday, Wilkman offered an audience of about 150 people a glimpse into his findings during a talk at the Museum of Ventura County's Agriculture Museum in Santa Paula. "The story I tell combines long-neglected and misunderstood social and political history, dramatic first person accounts of death and survival, and a technological detective story," Wilkman told the crowd. "It was a disaster with a long fuse, extending for miles and taking years to detonate." Floodpath: The Hidden History of the St. Francis Dam Disaster from Jon Wilkman on Vimeo. Wilkman's full account is published in a new book, "Floodpath: The Deadliest Man-Made Disaster of 20th Century America and the Making of Modern Los Angeles." Although he left many questions unanswered Saturday, referring people instead to his book, he offered an overview of the disaster, the people affected by it and key figures involved, including the dam's engineer, William Mulholland, whose career ended in disgrace after the disaster. Wilkman also showed photographs of the aftermath and a video of interviews he conducted with some of now-dead survivors and witnesses. He spoke about a 13-year-old girl who escaped out a back door but whose family was swept away, and of a telephone operator and a motorcycle police officer who risked their lives to warn people of the impending flood.

Wilkman said there is no definitive answer as to why the dam collapsed, but modern technology and computer analysis have enabled answers to emerge that differ from investigation findings in the late 1920s. And while engineers have learned from the St. Francis Dam disaster, the incident still has relevance today, the author insisted. "I believe rescuing the memory of the St. Francis Dam disaster is important for a full appreciation of the sometimes-hidden history of Los Angeles and Southern California," he said, "but just as vital for today's world of climate change, limited

water resources and the challenges of an ignored American infrastructure." Among those attending the event was Carol Reed Glow, 75, of Ventura, who said her father and grandmother lived through the disaster. Reed Glow said she has been delving into the history of the event for the past 15 years. "I just love history and the family history," she said. "I didn't realize that there's so much detail and so much unknown. ... I'm really interested in finding out more."
For more: www.stfrancisdamdisaster1928.com

(Their response is to not call this a smoking gun. Can a dam be safe and yet fail?)

DOCUMENTS: Brazilian Company Knew Failed Dam Was at Risk

Brazil's TV Globo obtained documents which show that the Samarco mining firm was aware of compromised safety at the recently collapsed Mariana dam.

By Derrick Broze ,Jan 31, 2016, truthinmedia.com

Brazil's TV Globo recently reported that it had obtained documents which detail how the mining firm Samarco Mineração SA was aware of compromised safety at the Mariana dam in Minas Gerais state for at least two years before the dam's recent collapse. Samarco is jointly owned by Australia's BHP Billiton and Brazil's Vale.

In November 2015, Truth In Media reported on the collapse of two dams in Brazil which interrupted the flow of drinking water for an estimated 250,000 people and damaged the local ecosystem. On November 5th, two dams burst at an iron ore mine operated by Samarco. The disaster caused the deaths of 17 people and another 500 displaced from their homes. The dams are known as tailing dams which are designed to hold water and waste from the iron ore mine. The Associated Press reported: "TV Globo, the head of Brazil's biggest media group, also said that Minas Gerais investigators believe that Samarco neglected key documents to obtain the dam's license. The company denies that. The TV-led media conglomerate added that the investigation by the Minas Gerais attorney general's office showed that the first concerns about the mine's safety appeared in 2007. Samarco managed to get the environmental license from the state government even though it failed to provide all necessary documents to operate the mine." [RELATED: Massive Environmental Damage in Brazil Following Collapse of Two Dams]
Brazil's federal police force has also indicted Samarco, Vale and seven of their executives for the dam burst. Samarco's CEO was indicted, as well as geology experts and an engineer who said the dam was safe only 4 months before the burst.

The Wall Street Journal also reported that a Samarco engineer claims the company was informed about structural problems a year before the incident. The WSJ reported that engineer Joaquim Pimenta de Ávila, a consultant who worked on the dam, found a crack in the company's Fundão waste-storage facility in September 2014. Pimenta de Ávila says he warned Samarco to increase monitoring and reinforce the dam Samarco denied receiving any such warning. "Cracks or surges can occur in any dam," Samarco told the Journal. "The operator's duty is to report them, evaluate them and treat them adequately, with reports, technical recommendations and contracted projects, as Samarco always did."

(Ready and waiting.)

Flood Control Dams at Required Levels

Feb 01, 2016, kxnet.com

Rafferty Dam

Reservoirs along the Souris-Mouse River in their springtime elevations as required in the international management agreement. The reservoir above Rafferty Dam reached its target elevation on Friday and releases have been stopped. At Alameda Dam, gates were shut down about mid-week after the reservoir hit its target. And Lake Darling is currently slightly below its required February First level. Tom Pabian at Upper Souris National Wildlife Refuge, which manages Lake Darling, says there's a flow of about 75 cubic feet per second coming from Lake Darling Dam - and those releases will probably end next week sometime. All told, Pabian says the system is in good shape to deal with runoff this spring.

(Looks like the end is near.)

New plan to remove Klamath River dams without help from Congress

By Carolyn Lochhead, February 2, 2016, sfgate.com

Iron Gate Dam on the Klamath River near Hornbrook (Siskiyou County), seen in 2009, is one of the dams set to be taken down in a river restoration project. Less Iron Gate Dam on the Klamath River near Hornbrook (Siskiyou County), seen in 2009, is one of the dams set to be taken down in a river restoration project.

WASHINGTON — Federal and state officials in California and Oregon said Tuesday that they had reached an agreement to bypass Congress to remove four hydroelectric dams on the Klamath River to solve a chronic water dispute among farmers, fishermen and American Indian tribes.

Rep. Jared Huffman, D-San Rafael, an ardent environmentalist who represents parts of the river basin, said the demolitions of the four dams combined would constitute the largest such dam removal project yet.

"It's a big deal, but it's also something they have to do," Huffman said, referring to state and federal officials and PacifiCorp, the utility that owns the dams. The dams "have wrecked a really significant salmon and steelhead river that sustains communities and tribes that I represent." The dam removals had been part of a major settlement among water users in the Klamath Basin in Northern California and southern Oregon that was reached after more than eight years of complex and contentious negotiations. The pact was widely considered a model for resolving water disputes. Congress needed to sign off on the deal last year, but the GOP-led

House failed to act because Republicans widely oppose dam removals. Now, California, Oregon, PacifiCorp, federal agencies and Klamath tribes will ask the Federal Energy Regulatory Commission to decommission the dams. If the commission, which oversees hydropower, acts, farmers, a key GOP constituency on water issues, may not get the same assurances of water and power deliveries they had secured under the original settlement. The parties to the new agreement said they hoped to find ways to accommodate irrigators. Interior Secretary Sally Jewell called the new plan "an important initial step as we work toward a comprehensive set of actions to advance the long-term progress and sustainability for tribes, fisheries and water users across the Klamath Basin."

The Klamath conflict drew national attention when federal agencies in a 2001 drought cut water deliveries to farmers, who then threatened to use force to restore them. The George W. Bush administration reversed course the following year, leading to a massive fish die-off.
The cost of the dam removals could be as high as $500 million. Gov. Jerry Brown's administration has already set aside $250 million for California's share. Oregon, PacifiCorp and the federal agencies would chip in. The four dams are used mainly to generate electricity rather than store water. The oldest was built in 1918. Dams were built throughout the West in the past century to provide power and store water for farmers and cities, but they create immense environmental damage, particularly to fish. PacifiCorp faced a daunting relicensing process that would have required constructing fish ladders and other alterations that could have cost nearly as much as removing the dams. Local tribes that saw the water guarantees under the original deal as too generous to farmers have united behind the new plan, Huffman said. Huffman said removal "is not going to be cheap" but opponents face an uphill fight. "When you have the owner of the dams and the two states where dams exist and the key federal agencies all going shoulder to shoulder and requesting decommissioning, that's pretty good news for those who want dam removal and river restoration," Huffman said. "And I think it's a pretty tall order for those who want to find a way to stop it." The new plan is an agreement-in-principle among the two states, the Interior Department and PacifiCorp that will be made final by Feb. 29, proponents said in a statement. The plan would then be submitted to the Federal Energy Regulatory Commission for public comment. If approved, PacifiCorp would transfer ownership of the dams to a "non-federal agency" that would remove the dams in 2020.

(Trying to fill the holes.)

New phase starting for Boone Dam Project

By Lenny Cohen, Digital Media Manager, wcyb.com, Feb 02 2016

Monday was the final walkdown of completed repairs and improvements just downstream of the dam. So far, TVA reported drainage has been improved in the area. Also, the initial sinkhole discovered in October 2014 has been repaired and a new Control Building parking area is complete. The solar panel and equipment box in the picture above is for a piezometer. The device at the site of the sinkhole measures the pressure of groundwater at a specific point. This instrument will provide continuous monitoring of any more movement in the area.

Now, 24 hour-a-day operations are underway. Monday night, first overnight crew arrived. They will work on the exploratory drilling and grouting program on the earthen embankment. Last week, Boone Dam Project Manager Sam Vinson (in yellow above) gave an up-close look at project activities. He highlighted the increased number of drill rigs participating in the expanded exploratory drilling and grouting program, and noted that the project was on schedule for 24-hour operations. Also, Project Director Keith McMillion discussed the planning and design of Boone

Dam in the early 1950s, through its status as one of the region's largest construction projects, with the Johnson City Morning Rotary Club.

(We hope so. You never know with limestone.)

Boone Dam sinkhole repaired; 24-hour work begin

Feb 3, 2016, Associated Press | themonitor.com

JOHNSON CITY, Tenn. (AP) — The original sinkhole discovered at Boone Dam has been repaired, and the Tennessee Valley Authority is installing a device to monitor any new movement in the area. Media outlets report that the TVA also announced 24-hour work began at the site on Monday. A sinkhole at the base of the dam was discovered in a 2014 inspection. In July, TVA launched a $200 million-$300 million project to repair the dam, a process expected to last at least seven years. On Monday, the TVA completed the first phase of the project with repairs and drainage improvements just downstream from the dam. At the site of the sinkhole, the TVA installed a solar panel and equipment box for a piezometer, a device which measures the pressure of groundwater at a specific point.

Hydro:

(Hydro is a good investment.)

Lynchburg dam is an investment option for Liberty University

January 29, 2016, by Jessie Pounds, newsadvance.com

Every day, water rushes over Scott's Mill Dam on the James River near downtown Lynchburg, VA. The dam, built between 1830 and 1840, is a relic that's had surprising staying power long after Scott's Mill burned in 1944. Now some staff members at Liberty University are calculating the financial risks and rewards of enhancing the dam to produce hydroelectric power as a long-term investment for the school. If the project comes to fruition, it would be a run of the river operation, meaning electricity generated would depend upon the natural flow of the James, rather than opening and closing gates. "We are taking baby steps, but it's of interest," said Chris Carroll, the school's vice president for special projects.

He hopes to have an analysis of the project's financial picture ready to hand to Liberty University President Jerry Falwell Jr. in about 30 days. Meanwhile, businessman Mark Fendig, who owns the dam through his company Luminaire Technologies, has been moving ahead in Liberty's name on some small legal steps to prepare the school to file an application for a license from the Federal Energy Regulatory Commission to produce energy on the site. That's meant gathering input from interested parties and stakeholders, looking at potential angels and devils in the details for the river and the public in the preliminary proposals. Feb. 2 marks the end of the public comment period on the pre-application document. Filing for an application would be the beginning of another long, multi-step process with FERC. Fendig also owns other dams in region and said he's passionate about creating renewable energy through hydropower. "It's the do-able renewable," he said.

If the university chose to enhance the dam, it might well consider buying other existing hydroelectric dams on the James, Carroll said, because once the school invested resources and built expertise in hydropower, it could more cheaply involve itself in other projects. The phrase he used was “hydroelectric portfolio.” The school would create a separate entity to handle hydro projects if it chose that route, he said. Carroll said he gets approached daily by people trying to hawk investment opportunities to Liberty, thinking the school is happy to throw money at things. That’s not true, Carroll said, explaining the school takes a hard-nosed, systematic approach to how it invests. It might seem a little out there for a university to get in the business of running hydroelectric power plants, but Carroll said Falwell has an affinity and track record with construction projects and investments in structures and facilities. “Our president is very smart when it comes to real estate and buildings,” he said. “He is a brick and mortar guy.”

On the other hand, Carroll said, he sees reasons for caution. The university passed on an opportunity to purchase Reusen’s dam, the next dam up river, from Appalachian Power in 2015. He said the school still isn’t sure why APCo stopped using Reusen’s dam to produce power a couple years ago, or why it wanted to sell it, and he said that raises a cautionary flag.
The legal filing record of Liberty University’s interest in producing power at Scott’s Mill dates back to 2009, according to Celeste Miller, a spokeswoman for FERC. In 2012, it got a preliminary permit to study the idea, she said. The commission has since given the school an extension on that three-year permit. According to Carroll, the idea of installing hydroelectric power at Scott’s Mill fell off the radar at Liberty for a while. It came up again in 2015, when Liberty came across the opportunity to purchase Reusen’s and then passed on it. On Dec. 2, Fendig and Liberty University consultant Kim Stein gathered with representatives of interested agencies for a meeting to discuss the pre-application document filed in Liberty’s name for the project.
Pat Calvert, the James River Association’s Upper James River Keeper, also attended the meeting. Right now, he said, Scott’s Mill dam isn’t doing much but impeding the passage of fish and boaters on the river. “Ideally, a fully functioning river doesn’t have dams on it,” he said.
With that said, if there’s not much hope of legally tearing down dams like Scott’s Mill, Calvert sees the appeal of using it to generate renewable power.

It’s too early to say if there might be negative environment consequences related to a hydroelectric enhancement prior to the completion of needed studies required by the FERC licensing process, Calvert said, though it’s possible. He’s optimistic about the possibility of getting a few public or environmental benefits attached to the project, if it moves forward. He’d love to see Liberty construct ways for boaters and fish to safely get past the dam and put up signs about its historical aspects and surroundings. At the very least, he said, there should be some public access approved for boaters to portage around it. “Right now, nobody can get around that dam without trespassing,” he said. He even suggested the dam could be used as a back-up power source for Lynchburg’s waste water treatment plant in case of a mass power outage.
Tim Mitchell, the city’s director of water resources, said that idea doesn’t make a lot of sense, because the city already has state funding lined up to install back-up generators for the pumps in its waste water treatment plant. Mitchell said his main interest in a Scott’s Mill hydroelectric project, is that it not disrupt the city’s legal right to use up to a fifth of the flow of the James. Lynchburg uses the James as a backup water supply for the city. Thus far, he said, what he’s seen does not seem to suggest the city’s water intake would be usurped, but he plans to monitor any project to make sure that’s true. Carroll said Liberty is looking at what it would cost to make alterations, such as a way for boaters to float through, as part of its cost and benefits analysis. “We want to be good neighbors and we want to be good citizens, but we want to be prudent too,” he said.

Asked about an Aug. 31 public notice that said Liberty University had “unequivocal” plans to file for a license for the project, Carroll said even with every step already taken, there’s still every possibility Liberty might decide to pass on the project entirely. Given the university’s track record with the Scott’s Mill dam, it also seems possible leaders might try to bide their time before making a decision, though Fendig voiced objection to the idea that current efforts might not lead anywhere. “The agencies don’t really like going through these regulatory processes just for the

sake of it," he said. Carroll said the university has reason to take a patient approach to considering the investment, because spending millions to set up the dam could only realistically pay back the university in the long run. The question, he said, is whether the university would be glad for its investment 100 years from now. "Good things that take a long time continue to flow and you see benefits," he said. Even with all the changes in the world, he said, it seems reasonable to assume the James will stick around.

(Resurrection.)

St. Anthony hydroelectric plant springs back to life

By Lisa Dayley Smith Contributor to the Standard Journal, 2/1/16, rexburgstandardjournal.com

ST. ANTHONY ID — It's back to the future for the community's recently restored hydroelectric plant. While the plant's new owner, Sorensen Engineering, relies on 21st century equipment, it continues to use one major piece of machinery construction workers installed in 1915 when building the plant. "That's the same generator running today," says Sorensen engineer Mike Jardine. "The generator was in good shape." Unique to the west at the time, the generator never suffered from excessive use. "It's been in good shape," he said. While the generator wasn't replaced, workers have installed other machinery like new cooling and cleaning systems as well as other items bringing the plant up to code. "It had some archaic switch gear, and we brought in all new switch gear and electronics. It took about a year to renovate it and to get it operational," Jardine said. Rocky Mountain Power shuttered the plant in 2002 after the shaft connecting two turbines failed. "They were having troubles with the alignment," Jardine said. As a result of the turbines failing, Rocky Mountain Power opted to sell the facility to Sorensen Engineering around 2013. Prior to the sell, the state required the Idaho Public Utilities Commissions (IPUC) to approve the transaction. The organization reviewed the St. Anthony facility and deemed it was in everyone's best interests to sell it.

IPUC explained that doing so would benefit the state, Rocky Mountain Power and its customers, who wouldn't experience a change in rates. As required by IPUC, the Sorensen Company proved it could maintain and operate the plant. Sorensen owns 11 similar hydroelectric plants. Since taking over, the new company has made the plant profitable, Jardine said. One of the best things about the new company is that it's small enough to provide the plant with the kind of daily routine maintenance and oversight that may have proven a nuisance for Rocky Mountain Power, Jardine said. "In such a small facility — for a corporation of that size to take the needed interest and care in it — in my opinion, it was kind of a burr in their saddle. You need some personal interest in it to really stay on top of things and to understand it," he said. That personal interest comes in the form of Dirk Mace, who works as the plant's main operator. Jardine serves as its backup operator. Today, the power the plant now produces is sold to Rocky Mountain Power and is "back on the grid," Jardine said.

According to Boise State University (BSU) there are 136 similar hydroelectric plants in Idaho of various sizes producing 2,468 megawatts each year. That translates into an economic boon of $400 million generated annually inside Idaho. This is all thanks to the 1902 Reclamation Act that allowed Idaho to realize the potential of its waterways with the creation of hydroelectric plants.

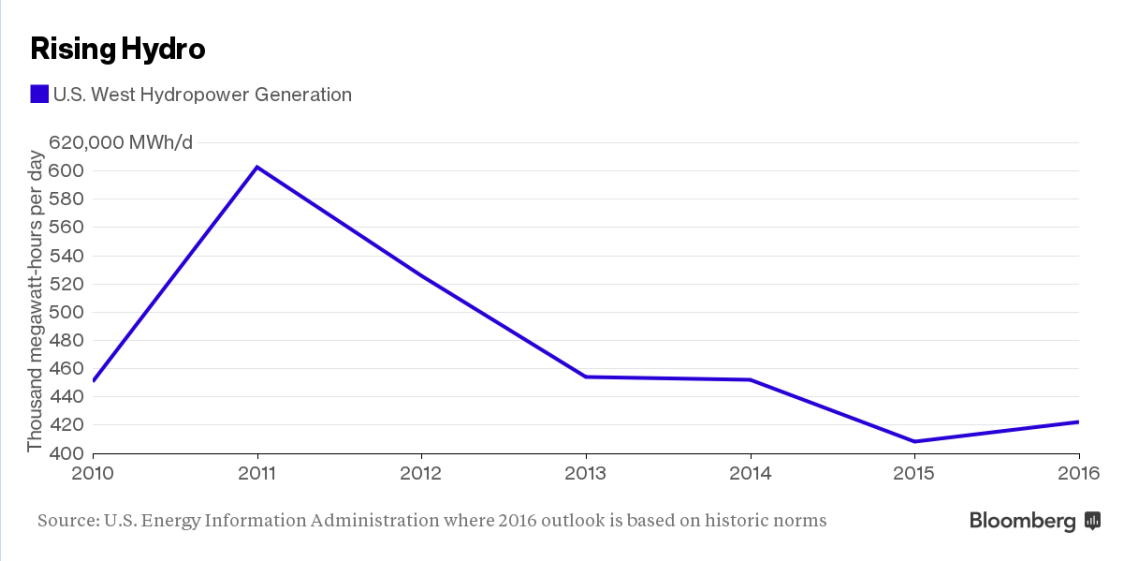
Such facilities, like St. Anthony's, soon sprang to life. Development continued on these plants in subsequent years. During World War II, the federal government considered the hydroelectric plants a huge part of the war effort. A part of St. Anthony for decades, Jardine says that residents have been happy to see the hydroelectric plant spring back to life. "People would come up and say that they wished it had never fallen into a dilapidated state," he said. "I think most people want to see it functioning. It was kind of a wasted resource." The site may prove nostalgic for residents as the facility often served as the place for community events. At one time, a full-time operator lived in an adjoining home and took such good care of the property that residents routinely held weddings there. "It's a nice location. It's got river all around you. It's really pretty," Jardine said. Since it reopened, residents have toured the plant on occasion. "St. Anthony is a pretty tightknit community. Everybody knows somebody involved in the project in some way. Plenty of people have come through it," he said. Service groups like the boy scouts are especially welcome, but Jardine asks that anybody interested in touring the plant first make an appointment. For more information call 208-313-7087.

(Let it rain and rain.)

El Nino's U.S. West Coast Snow Boosts Hydropower Prospects

Naureen Malik naurtorious, February 3, 2016 — bloomberg.com

El Nino may have wiped out winter on the U.S. East Coast, but it's proving a boon to West Coast hydroelectric power prospects. The weather pattern is dumping so much snow in the Pacific Northwest and California that accumulations are topping historic norms, government data show. The snowpack promises a stream of cheap hydropower flowing across the region once the spring melt begins, especially in California where supplies last year fell to the lowest level since at least 2008.



"Hydro generation is expected to exceed the last three years," Todd Crawford, chief meteorologist for The Weather Company, in Andover, Massachusetts, said in a telephone interview. "Snowpack in almost all of the West Coast now is above normal." Last year snow accumulation was less than 50 percent of the norm, Morgan Stanley analysts Stefan Revielle and Adam Longson said in a report to clients late Tuesday. A return to normal conditions this summer may displace as much as 650 million cubic feet a day of natural gas that would otherwise be needed to produce electricity, they said. The West Coast winter stands in contrast to East Coast conditions where mild weather has led to a virtual dearth of snowfall. California's hydroelectric generation stayed below 2,000 megawatts last summer, compared with 5,500 megawatts in 2011, said Chris DaCosta, director of the California grid for Genscape Inc., which tracks real-time power data in Boston. Hydropower is already on the rise this year, climbing 20 percent to average 1,531 in January from a year earlier, Genscape data show.

(If it's good enough for them, why isn't it good enough for us?)

Company eyes hydroelectric facility in county

By JACKSON FRENCH, bgdailynews.com, 2/4/16

A Spanish company has shown interest in building a hydroelectric power source on a section of the Green River that flows through Warren County, KY. On Jan. 19, the Federal Energy Regulatory Commission published a notice in the Daily News saying that it accepted a preliminary permit for a feasibility study from Energy Resources USA, Inc. The company has built 25 hydropower installations in Spain and two in Mexico and are considering breaking into the American market, business development manager Ander Gonzalez said in an email. "Currently we are analyzing the USA Market as we did before in Mexico, where we think we can find opportunities to develop this kind of energy," he said. The proposed project would involve building a new facility on the southwest side of the existing Green River Lock and Dam, which the U.S. Army Corps of Engineers controls, he said. The facility Energy Resources is looking to build would include an intake channel 770 feet long and 300 feet wide and a powerhouse containing two generator units with a 7-megawatt capacity, Gonzalez said. As an example, 1 megawatt powers about 580 average-size homes across the Tennessee Valley Authority's territory, according to spokesman Scott Brooks. The facility, if constructed based on the company's current plans, would produce roughly 39,800 megawatt-hours a year, which it would generate with surplus water from Green River Lock and Dam No. 5, he said. According to FERC's notice, Energy Resources filed the application on Nov. 27. For 60 days after a permit application is filed, other parties can submit motions to intervene and competing applications to FERC, according to spokeswoman Celeste Miller.

The permit, if provided, would give Energy Resources the exclusive right to research the feasibility of pursuing their intended project in the area for three years, Miller said. "This is the first step in determining whether or not they want to pursue the project," she said. Of all 1031 active hydroelectric facilities in the United States, six are located in Kentucky, on the Ohio and Kentucky Rivers, according to FERC data. Currently there are 9 preliminary permits for hydroelectric power sources in Kentucky, the data said. FERC has received no comments on Energy Resources' proposal yet, Miller said, adding that comments related to preliminary permit applications tend to come in close to the deadline. Shortly after the March 19 deadline for comment, FERC will examine the feedback and decide whether or not to award Energy Resources the permit, she said, adding that the length of the deliberations depends on how many responses they get. "If we get a lot of comments, it takes longer to get through the comments," she said.

Environment:

(Never heard of this little guy.)

Hydroelectric Dam Demolition Helps American Dippers

By Joshua Rapp Learn, January 28, 2016, wildlife.org

Breaking the barriers for salmon may lead quickly to a healthier bird population, at least as far as dam removal is concerned. Recent research examined the effect that removing a dam had on the movement of salmon in the Elwha River in northeast Washington state, as well as how the change affected the ecosystem of a bird species: the American dipper (Cinclus mexicanus).

"It makes a big difference to the dippers whether they have access to salmon," said Christopher Tonra, an assistant professor of avian wildlife ecology at Ohio State University and the lead author of the recent study published in Ecography.

Researcher Christopher Tonra bands an American dipper in the field. ©Ohio State University

American dippers live along the Pacific coast from Alaska to Central America. Tonra said that before the dam was removed, populations upstream from the hydroelectric outlet only produced one brood per year on average, had lower annual survival rates and were more likely to migrate. "If there's no salmon access for the dippers, they almost behave like a different population," he said. "The birds with salmon on their territory will stick around all year." The state removed the Elwha Dam over the winter of 2011-2012, and Tonra said that the researchers monitored the area upstream from the dam site from 2010 to 2013. They found that 80 to 85 percent of chinook egg masses laid in the following spawning season were above the site of the former dam. They also measured the levels of nitrogen in American dippers all along the river during the study period. They found higher nitrogen levels in dippers upstream from the dam site by the first breeding season of the salmon in the river after demolition. "Their nitrogen levels were more similar to other animals that had never lived around the dams than to birds that had been obstructed," Tonra said. He added that the levels of nitrogen in American dippers upstream from the dam increased more and more every year after the dam was removed, until they eventually resembled birds that were downstream of the original dam site. "The biggest finding is how fast recovery can begin," Tonra said, though he added that there is still a lot of accumulated dam sediment in the area. "Often with conservation, we don't get a lot of positive stories."

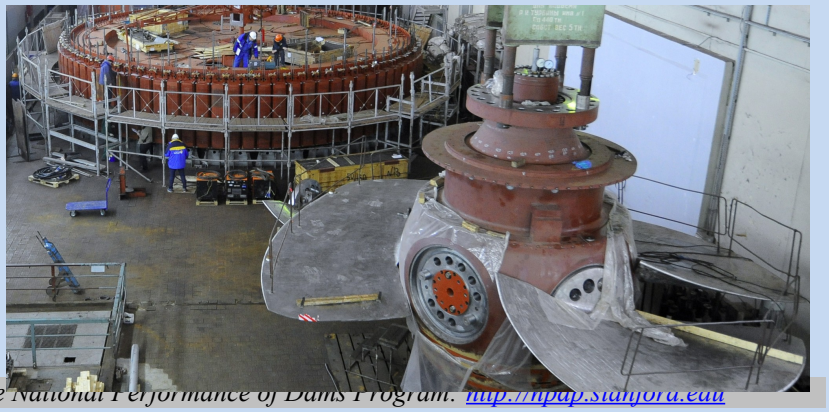
This study was done around the site of the Elwha Dam, but the Glines Canyon Dam was also demolished along the Elwha River in August 2014. Tonra now wonders if the upstream dippers will change their behavior to match more closely with those who were always downstream of the dam site. "It's a really exciting thing to see and it's going to continue to be exciting to see how this progresses," Tonra said. The message for conservation, he said, is that removing dams that don't contribute much energy to the grid can benefit wildlife populations.

(We're talking fish not people.)

Underestimating Turbines' Death Toll

Some turbines are more dangerous than others, but a bias in research means scientists know the least about the deadliest—and most common—type.

By Ben Goldfarb, February 3, 2016, hakaimagazine.com



In the late 2000s, Brenda Pracheil was studying paddlefish migrations in the Missouri River when she started noticing gruesome wounds on her subjects' oddly shaped faces. Paddlefish, an ancient cousin of the sturgeon, derive their name from their

oar-shaped bills—snouts that Pracheil often saw gashed, bent, or amputated altogether. “It was pretty crazy,” she says. “Once we saw a chopped-off head floating by in the water.” It didn’t take much detective work to deduce the culprit: the Missouri River’s dams. Paddlefish were passing through electricity-generating turbines as they swam downriver, and suffering catastrophic injuries as they squeezed past the spinning blades. Though Pracheil has since moved to the US Department of Energy’s Oak Ridge National Laboratory, where she’s an aquatic ecologist, she’s maintained her dam focus. In a new study, she’s revealed significant shortcomings in our understanding of how hydroelectric infrastructure harms fish—deficiencies that might be causing scientists to underestimate the threat that dams pose to many species. When you think about dams and fish, you most likely picture an adult salmon swimming upriver, her belly full of eggs, bumping her head against an impassable concrete wall. But dams don’t just impede fish moving upriver, they also harm migrants heading downstream. Often, swimming downriver through a dam means passing through turbines—whirling, power-generating apparatuses that can weigh as much as a 747 airplane.

For a fish, passing through the turbines’ spin cycle is a perilous ordeal, and death can arrive in myriad ways. If you’re large-bodied, like Pracheil’s paddlefish, you risk being sliced and diced; if you’re small and fragile, like juvenile salmon, the turbulence can literally rip off your scales. Fish of all sizes risk succumbing to barotrauma, when rapid pressure changes rupture swim bladders and pop eyes from heads. Yet when it comes to killing fish, not all turbines are created equal. In the United States, dam operators use around a half dozen different types of hydroelectric turbines. Most dams, however, use one of two varieties: the Kaplan or the Francis. The Kaplan turbine is essentially a giant propeller, one that wouldn’t have looked too out of place on the stern of the Titanic. The Francis, meanwhile, is a more elaborate beast—a nautilus-shaped whorl whose guts bristle with blades. Francis turbines, which are better at handling the high pressure exerted by deep reservoirs, are the more versatile and popular option, generating 56 percent of America’s hydropower. Yet when Pracheil pored over the existing research on the effects of turbines on fish, she discovered that Francis turbines have been proportionally understudied compared to the Kaplans. What’s more, Francis turbines are far more lethal: Pracheil found that while just 8 percent of the fish that pass through Kaplans die, the toll is a grisly 28 percent in Francis turbines. So why are scientists devoting less research to the deadlier machine? The blind spot, Pracheil says, likely exists because Kaplan turbines—though less common nationwide—prevail in the Pacific Northwest, where studying the ecological impacts of hydropower on salmon is a booming scientific industry. “You work on what there’s money for,” Pracheil explains, “and there’s a lot of money for salmon in the Pacific Northwest.”

That Northwest bias has another consequence. While most research has focused on salmonids, scientists have spent comparatively little time studying how other families cope with turbines. Biological differences between fish, however, may have big implications when it comes to mortality. For example, while salmonids have open swim bladders, other common species, like walleye and perch, possess closed bladders. Though salmonids can burp to reduce their internal pressure and avoid barotrauma, their closed-bladder counterparts exchange gases through their bloodstream, a lengthier process that may make walleye and their cousins more susceptible to pressure fluctuations. “We just don’t know how turbines affect a huge diversity of fish,” Pracheil concludes. Recognizing such scientific biases, Pracheil says, should help scientists ask better questions about how turbines affect a broader menagerie of species. That information, in turn, could guide the engineers who design power-producing blades. Indeed, the US federal government has already made plenty of progress on the Columbia River, where many dams sport screens over turbines, and so-called “spillway weirs” keep juvenile salmon near the surface. As Pracheil’s study demonstrates, however, focusing research solely on the Northwest’s salmonids, and the Kaplan turbines they swim through, can leave other species in the dark. It’s time to make all turbines safer for perch, paddlefish, and every river-dweller in between,

Other Stuff:

(Ain't this something. Now, that's windy.)

Waterfalls blown upside down as gale force winds gust across island

STV, 2 February 2016, news.stv.tv

Residents on the isle of Mull were left confused on Monday after the gale force winds from Storm Henry blew two of the islands waterfalls upside down. The water, which was in full flow due to the heavy rains, usually falls dramatically off the side of Ardmeanach, on the Argyll and Bute island's south western side. But the gusts blew up the rock face and forced the water back into the air, causing a trail of spray usually seen at the bottom of a waterfall.

The occurrence was filmed by a resident who was watching from the other side of Loch Scridain on Monday afternoon. Reuben O'Connell, 35, who works for Isle of Mull Holiday Cottages, said: "I was watching it from our holiday houses and it looked really unusual so I thought I'd film it. I've never seen it like that before. "The weather is wild but we're coping fine. The winds are strong but it's not actually that wet. "Even thought the weather is fierce, and you can barely stand up, the island looks really beautiful. It's a wild and rugged place."
(See the video here: http://news.stv.tv/west-central/1341252-gale-force-winds-from-storm-henry-blow-island-waterfalls-upside-down/?utm_content=bufferbbd38&utm_medium=social&utm_source=facebook.com&utm_campaign=buffer).

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