

5/12/2016



Some Dam – Hydro News™ And Other Stuff



Quote of Note: "Everyone who's ever taken a shower has an idea. It's the person who gets out of the shower, dries off and does something about it who makes a difference." - Nolan Bushnell

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"Good wine is a necessity of life." - -Thomas Jefferson
Ron's wine pick of the week: 2012 Nine Stones Syrah & Shiraz (Other than French) "Barossa"
"No nation was ever drunk when wine was cheap." - - Thomas Jefferson



Dams:

(When all else fails you need a good EAP)

9 Investigates: N.C. dam owners failing to submit emergency plans

By: Blake Hanson, Apr 28, 2016 - wsocvtv.com

CHARLOTTE, N.C. — **State environmental records show hundreds of private and public dam owners failed to submit safety documentation to a state agency by the deadline.** Legislation required dam owners to submit an Emergency Action Plan by Dec. 31 of last year. The requirement applies to dams that are considered high-hazard or intermediate. The status high-hazard means a failure could result in loss of life or serious damage but does not refer to the condition of the dam. **The plans are designed to help emergency officials and dam owners respond in a crisis.** Channel 9 requested



data from the Department of Environmental Quality to see how many dam owners followed the deadline. In several Charlotte area counties, approximately 140 dam owners did not submit plans as of April 3.

Almost all of the dams have private owners. However, records showed the City of Kings Mountain, Bessemer City and the Town of Cherryville had not submitted EAPs for municipally owned dams. No one from any of the governments responded to requests for comment Thursday. A Department of Environmental Quality official told Channel 9 that he estimates a little more than 50 percent of owners have submitted EAPs as required. "What will surprise me if we don't get them all in in too terribly a long time," said Toby Vinson, chief of program operations for the Division of Energy, Mineral and Land Resources. Environmental officials said they are not penalizing dam owners who haven't made the deadline. Instead, they said they working with the dam owners and bring them into compliance. Dam owners will get notice during regular inspections informing them of the need for an EAP. "You may incur liability should your dam have a problem or fail, if such results in loss of life or property damage downstream," reads part of the notice. Environmental officials said many owners have informed them that they are working on submitting the EAPs. Officials plan to work with owners longer before considering fines or other penalties. In October, Channel 9 looked into dam safety following historic flooding in Columbia, South Carolina, in late 2015. North Carolina ranks second in the nation for the number of dams classified as high-hazard, according to federal data created in 2013. A 2013 infrastructure study by the American Society of Civil Engineers gave North Carolina a D when it comes to grading the state's maintenance of its dams. The report estimated it would take \$1.9 billion to rehabilitate the state's non-federally owned and privately owned dams.

(Why is this a student project?)

UAH students look to address Alabama's lack of dam inspections

By Travis Leder, waaytv.com, 4/29/16

A group of students representing four schools -- UAH, UAB, Auburn University and George Washington University -- are looking to address what many civil engineers call critical dam infrastructure needs for Alabama. "Alabama is the only state in the United States that doesn't have a dam safety program, and only two percent of Alabama's dams are inspected," says UAH and UAB Ph.D. candidate Ali Darwish.



Ali Darwish flies his waterproof drone which he will use to place sensors near dams.

The team is looking to use waterproof drones to install what they believe is a better dam inspection method than what is currently used. "We are proposing to use a certain type of sensor that are able to report any changes in the crack gaps immediately when this happens using the cloud -- using the connected sensors." Darwish says he successfully tested the drone's durability by catching fish with a hook attached to the vehicle. Darwish and the group of students behind 'Team UAH' are currently trying to win a total grand prize of \$150 thousand in the Infrastructure 2050 Challenge. The challenge, which is organized by the Association of Equipment Manufacturers and herox, is looking for proposals that identify and address critical infrastructure problems facing U.S. infrastructure. Ten teams remain in the competition, and Darwish says Team UAH is hoping to receive local support to help their chances of winning. "We are the only team that is addressing Alabama's dam issues," Darwish explains, "In fact, we are the only team from Alabama, or probably from the South, and we are competing against the other teams from other schools such as UC Berkeley and MIT. So we really need your help."

(Ridiculous!)

\$250k needed to study dam bid

May 01, 2016, rutlandherald.com

MONTPELIER, VT — A working group created to determine if Vermont should try to buy more than a dozen dams on the Deerfield and Connecticut rivers is asking for money to hire a consultant to update a 2004 analysis conducted when the state last considered buying them. Vermont Public Radio reported that the Vermont Hydro Power Working Group recently asked for \$250,000 to have the consultant use the old analysis with more recent information. TransCanada announced in March that the hydroelectric system is for sale. **The state wants the consultant to compile a report for the initial phase of the project, which could cost up to \$75,000.**

If the state bids on the dams, the remaining money would fund a deeper analysis. The working group plans to present its suggestion by August.

(Dams are part of our history.)

The List: 3 dams with links to region's past

By Ryan Blessing, norwichbulletin.com, May. 1, 2016

Dams are easy to find in our region. And where there's a dam, there's usually a bit of history. They often serve as a visible reminder of Eastern Connecticut's industrial past in which the dam supported a grist or saw mill.



Ashland dam

The Ashland dam in Griswold is a fixture of town, and clearly visible from the town's Veterans Memorial Park, which hosts several yearly community events. **It was repaired in 2012 after heavy floods damaged it in March 2010.**

Hanover dam

The 116-year-old Hanover dam lies on the Little River in Sprague. Constructed in 1900, the 26 ½-foot tall, 750-foot long dam impounds about 400 acre-feet of water. The town-owned dam is among six in Sprague. Recent evaluations have revealed it needs work because years of overgrowth and build-up around its base have made regular maintenance difficult.

Norton Mill dam

In Colchester, the Norton Mill Dam is on the Jeremy River next to the remnants of the old Norton Paper Mill. It's easily visible from Route 149 as motorists travel through Westchester. **But get a good look while you still can - plans are in the works to remove both the mill and the dam and turn the area into a town park.**

(More on a worn out subject.)

Letter: Snake River dams waste tax dollars

By Ariel Marie Yseth, Lynnwood, May 1, 2016, columbian.com



Capitalism frequently grapples with saving money over saving nature, but what if one choice could be fiscally and environmentally responsible? Our region faces such a solution. The Snake River, which flows into the Columbia River, boasts 15 dams for largely hydroelectric uses. The four lower Snake River dams, however, prevent endangered chinook salmon from reaching critical spawning grounds. High temperatures in the past two years have obliterated lower-river basin spawning habitat and, thus, chinook returns have hit

unprecedented lows. Experts predict Columbia chinook extinction by 2018. Commercial fishing will likely fall into major decline.

Our endangered southern resident orca whale population relies primarily on Columbia basin chinook for food. Since their endangered species listing in 2005, more than 40 orcas have died due to conditions in which they might have survived had there been adequate salmon supply. Their extinction would equal nearly \$34 million in lost revenue annually in eco-tourism. Furthermore, we are in a power surplus wherein removing the four lower dams would not cause power deficits. However, their continued upkeep wastes taxpayer money as the return is only 15 cents on every dollar spent. **Are we willing to suffer the economic and environmental repercussions that come with doing nothing?**

(Don't see this often.)

Residents OK fee to rebuild Hide-A-Way Hills dam

By [Mary Beth Lane](#) *The Columbus Dispatch* • May 2, 2016, [dispatch.com](#)

SUGAR GROVE, Ohio — **Work to rebuild the dam at the private resort community Hide-A-Way Hills is expected to begin this month after residents approved an assessment of \$3,950 per household to pay for it. Eighty-five percent of voters in the gated community straddling Fairfield and Hocking counties approved the fee in April.** That shows how eager most residents are to reclaim full use of their 100-acre Lake of the Four Seasons — expected next year — once the dam is rebuilt and secured. Rebuilding Hide-A-Way Hills' 1,100-foot earthen dam coincides with the project to rebuild the 4.1-mile Buckeye Lake dam but is far simpler, less costly and privately funded. **The Hide-A-Way Hills dam was built when the rustic community was developed in the 1960s.** The dam is slipping, as shown by the horizontal cracks that have opened in the clay soil along the dam's slope and were first spotted in November 2013. The lake has been kept off-limits to powerboating since then, pending construction to shore up the dam. **The estimated \$2.8 million project** will rebuild the dam by excavating and then solidly repacking the soil. The dam's backside slope will be extended 75 feet farther from the shoreline and made steeper.

The Ohio Department of Natural Resources, which inspects dams — including private ones such as Hide-A-Way Hills' — has approved the design plans developed for the project by Lancaster engineering firm 2LMN Inc. **The plans cost the community an additional \$300,000. No state funding is involved.** "Oh no, it's all us," said resident Paul Heimberger, who volunteers with Jim Krygier and other residents on the community's management committee to oversee the project. "It's a completely private lake. It's not a park" like Buckeye Lake, Krygier said. The state is spending more than \$100 million to rebuild the Buckeye Lake dam. The Hide-A-Way Hills community plans to use a five-year bank loan with a 3.7 percent interest rate to pay for its project. The special assessments, payable up front or spread over three years or five years, will repay the loan. **The project is expected to be finished in November.** The rebuilt dam will need the approval of state dam-safety inspectors. Residents want dry weather so the project stays on schedule. "God willing and the creek don't rise. That's actually an appropriate metaphor in this case," Krygier said. **If all goes according to plan, people will be able to put their powerboats back in the lake next year.** "People are so excited," Heimberger said.

(Bet it's harder to blow up than a balloon. The seagulls like it.)

Sunbury inflatable dam may be world's largest

By Rick Dandes, 5/2/16, [dailyitem.com](#)

SUNBURY, PA — **The state Bureau of Parks has begun inflating the Adam T. Bower Memorial Dam, a process that should be completed within two weeks, said John Clifford, Shikellamy State Park manager.** Once inflated, the dam creates the 3,060-acre Lake Augusta, and the marina at Shikellamy State Park "This brings a major boost to the local economy with the addition of fishing and recreational boating," Clifford said, Monday. "Rowing clubs from our area universities, Bucknell and Susquehanna, use the lake. Lake Augusta Outfitters will have their jet skis and boat rentals available. Several local businesses, too, are looking forward to the season, which begins just before Memorial Day."

The dam is slowly inflated so the downstream is not quickly dried up, he said. The inflatable portion of the dam consists of six 300 foot long, and one 175 foot long inflatable rubber bags, and all together comprises what is believed to be the longest fabri-dam in the world, at 2,100 feet. "I've heard rumors that there is a longer one in China, but it hasn't shown up in the record books," Clifford said. Lake Augusta is about five miles long, covering



an estimated 3,000 acres, and the water depth ranges from about 8-10 feet deep, Clifford said.

The Central Susquehanna Valley Thruway bridge project will not affect water levels, he said. The park's docks installation will begin after the fabri-dam is inflated and fully open to boaters by Memorial Day, Clifford said. The docks are a summer staple since 2012, when the park was official dedicated and opened.

The idea for the dam began in the mid-1960s, as part of an extensive state-wide plan hatched by Maurice Goddard, the Secretary of the Pennsylvania Department of Forests and Waters, a forerunner to the Pennsylvania Department of Conservation and Natural Resources. Goddard's idea was to create a state park within easy driving distance of every resident in the state. The dam was named after Adam T. Bower, the Chief Clerk of the Pennsylvania House of Representatives, from 1967-68. Construction of the fabri-dam completed in 1969, Clifford said, "and was completely destroyed by Hurricane Agnes a few years after that, leaving only the concrete base intact." The park staff inspects the bags twice a year – in the spring and in the fall. The DCNR engineering staff comes out every few years to do a more detailed inspection – the last one was in November 2013. The inflatable portion of the dam consists of six 300 foot long, and one 175 foot long inflatable rubber bags. For a total of 1,975 feet. The concrete piers between the bags make the main part of the dam about 2,100 feet long. There's another 500 foot-long concrete section on the Shamokin Dam side. So depending on how you want to count it, the dam is either 2,100 feet or about 2,600 feet long.

"We had some damage to some of the bags last year because the river froze. This year it was in good shape," he said Monday.

Two of the bags will need replacing next year, at a cost of about \$600,000 a bag, Clifford said. "It's about time. Bags one and seven are 30 years old. They are beyond the 25 year expected life span for the bags, even if they are in relatively good shape for their age. They just don't take the beating the bags in the middle of the river do. The next oldest bags were installed in 2000, so they've got another almost 10 years to go. "I expect we will have an announcement to put out about the bag replacement project for bags one and seven in the not too distant future," Clifford said. "But the project won't be done during the 2016 season."

(When someone offers you money, take it.)

Bill would allow for repair, maintenance of vulnerable dams

5/2/16, .montgomery-herald.com

WASHINGTON, D.C. — In an effort to protect the public by preventing dam failures and improving dam safety in communities across the country, U.S. Senators Shelley Moore Capito (R-W.Va.) and Jack Reed (D-R.I.) are introducing the High Hazard Potential Small Dam Safety Act.

This bipartisan legislation seeks to provide federal grant assistance for the rehabilitation and repair of non-federal high hazard potential dams. Dams play an important role with respect to our water supply, flood control, recreation and other community uses. High hazard potential dams are those dams where failure is probable to cause loss of human life and endanger population

centers and ecosystems, especially in periods of extreme weather and flooding. According to the Association of State Dam Safety Officials (ASDSO), the number of high-hazard potential dams increased nationally from 9,281 in 1998 to more than 14,700 in 2013. Currently, there is no federal program to assist states with the repair or removal of non-agricultural, non-hydroelectric, non-federal high hazard potential small dams. There are programs to help address dams built by the U.S. Department of Agriculture, but this leaves many dams vulnerable and some states without the ability to address the risks posed by small dams whose failure would likely result in the loss of lives, homes and businesses.

“Investing in critical infrastructure like dams is paramount to public safety. In West Virginia, we have 422 dams classified as high hazard potential. This bill will help facilitate the repair or removal of high hazard dams before an incident occurs, which could end up saving lives and future costs. I am glad to join with Senator Reed to introduce this important bipartisan bill,” said Senator Capito. “Dams are a crucial part of our infrastructure and dam safety is critical to public safety. But many communities lack the funding and resources to keep local dams in safe condition,” said Senator Reed. “This bipartisan bill will help provide federal grant assistance to high hazard potential dams in need of rehabilitation. By assisting in the repair or removal of high hazard dams before they fail, the bill makes an investment in future cost savings, not to mention lives and property saved.” According to the American Society of Civil Engineers (ASCE), the average age of dams in the United States is 52 years old. The High Hazard Potential Small Dam Safety Act expands FEMA’s existing National Dam Safety Program to allow non-federal entities to apply for matching grants for the repair and removal of non-federal, non-agricultural, non-hydroelectric small dams that have been identified by a state dam safety agency as a high hazard potential. The program is non-mandatory, allowing states to determine which, if any, dams they would submit for assistance. The allocation of funds is based on a one-third equal distribution and two-thirds need-based formula, with a sixty-five – thirty-five percent cost share, to ensure the participation of a wide number of states. The bipartisan bill is supported by the Association of State Dam Safety Officials and the American Society of Civil Engineers.

(Some good news.)

Two old dams that had been deemed by New Mexico water managers as most likely to fail have been replaced with a new larger structure

By THE ASSOCIATED PRESS , May 03, 2016 - dailyjournal.net

SPRINGER, New Mexico — Two small, old dams that had been deemed by New Mexico water managers as most likely to fail have been replaced. Officials with the Office of the State Engineer and the town of Springer gathered Monday to celebrate the completion of the new Springer Dam with a ribbon-cutting ceremony. State Engineer Tom Blaine says the new dam will help provide a safe and reliable water supply for the northern New Mexico community. The project was funded by \$7 million in state capital funds along with a grant loan match of \$732,000 from the state Water Trust Board. The new dam took nearly two years to construct.



(Here we go again!)

Judge Rejects Feds' Latest Plan To Help Salmon Survive Columbia River Dams

By Cassandra Profita OPB/EarthFix | May 4, 2016, opb.org

In a ruling Wednesday, Federal District Court Judge Michael Simon rejected the government’s latest plan for protecting salmon in the Columbia River Basin, saying the system of fish-blocking dams “cries out for a new approach.” It’s the fifth time a federal judge has ruled against the plan that guides dam operations on the Columbia and Snake rivers. The question of how to offset the

impacts of hydroelectric dams on threatened and endangered salmon and steelhead has been subject to more than 20 years of legal conflict. Wednesday's ruling is a continuation of a lawsuit that was filed in 2001. "Basically this is strike five for the federal agencies," said Todd True, lead attorney with the challengers and EarthJustice. "I think this is a particularly comprehensive rejection of the way the agencies have been trying to avoid modifying the operation of those dams."



The first powerhouse of the Bonneville Dam, 40 miles east of Portland, on the Columbia River. WikiCommons

Federal agencies that run the Columbia River hydropower system have repeatedly rewritten their salmon protection plan, known as a biological opinion or BiOp. The plan was reworked under the Clinton, Bush and Obama administrations, but each time it's been challenged and ultimately rejected in court. In a statement, the agencies said they will continue their efforts to protect and recover salmon and steelhead. "The U.S. government is disappointed that the court has not agreed with our approach in this long-standing litigation," the agencies wrote. "The decision will require time and effort to analyze and fully understand. We sincerely appreciate the region's unprecedented collaboration and commitment on behalf of salmon, and the important progress that it has produced." Terry Flores of Northwest River Partners, a group that includes utilities and river users who support the federal salmon plan, said the judge did his own "deep dive" analysis instead of deferring to the agencies that have the expertise. "Judge Simon did what we were fearful he would do," she said. "We're extremely disappointed and frustrated with the ruling today. I'm concerned it's really going to set this region back."

Flores said the ruling raises questions about whether the Endangered Species Act is actually working, given the extensive effort and analysis that went into the latest plan. Conservation groups along with the state of Oregon and the Nez Perce Tribe challenged the 2014 biological opinion. Judge Simon found that plan violates the Endangered Species Act and the National Environmental Policy Act, so the U.S. Army Corps of Engineers, National Oceanic and Atmospheric Administration, U.S. Bureau of Reclamation and Bonneville Power Administration will have to write a new one. In his 149-page ruling, the judge called for a whole new environmental analysis of how dams affect salmon as well as a new plan by March 2018. He wrote that a new analysis that considers alternatives such as dam removal "may elucidate an approach that will finally move the listed species out of peril" and "break through any bureaucratic logjam that maintains the status quo." Flores said the judge is requiring "an impossible task" that will send the agencies "back to square one" and unravel years of collaboration among agencies, tribes and river users. Supporters of the 2014 plan said strong salmon returns in recent years prove the latest plan is working. But opponents said it doesn't do much more to protect salmon than previous plans already struck down by the courts. Simon's predecessor, federal judge James Redden, rejected the Obama administration's 2011 salmon plan. After announcing he would step down from presiding over the case, he said in an interview that the four dams on the lower Snake River should be removed as a way to help struggling salmon runs. He also supported spilling more water over dams and increasing water flows to help young salmon and steelhead migrate to the ocean. Simon did not call for the removal of the lower Snake River dams, but he did call on the agencies to try a new approach, noting that they have "ignored the admonishments of Judge (Malcolm) Marsh and Judge Redden to consider more aggressive changes ... to save the imperiled listed species." Simon said the agencies have minimized their efforts to improve dam operations while putting most of their efforts to save salmon into habitat restoration. "Despite billions of dollars spent on these efforts, the listed species continue to be in a perilous state," he wrote. "The [Federal Columbia River Power System] remains a system that 'cries out' for a new approach."



Hydro:

(History.)

How Woody Guthrie became unlikely spokesman for Pacific Northwest

BY JOSH KERNS, KIRO Radio Reporter | April 28, 2016, mynorthwest.com

Can you imagine if some big Wall Street firm hired Bernie Sanders to promote investing in the stock market? That's sort of what happened 75 years ago when folk legend Woody Guthrie became an unlikely spokesman for hydroelectric power, the Grand Coulee Dam and the promise of greener pastures in the Pacific Northwest. But the remarkable story was almost lost in an attic forever. At the tail end of the depression and the New Deal, the Bonneville Power Administration was looking for a way to sell the idea of hydropower, irrigation and the Grand Coulee Dam to the voters of the Northwest. A producer for the agency



Woody Guthrie became an unlikely spokesman for hydroelectric power, the Grand Coulee Dam and the promise of greener pastures in the Pacific Northwest. (AP)

came up with the idea of a documentary with someone famous. "They wanted to tap into this idea of folk singing common man as the narrator or spokesman. So who better than Woody Guthrie," said Greg Vandy, host of the Roadhouse on KEXP, and the author of a brilliant new book called "26 songs in 30 Days: Woody Guthrie's Columbia River Songs and the Planned Promised Land in the Pacific Northwest."

"At the time Woody Guthrie was in sort of a winter of discontent in early 1941, living in Los Angeles. And he was unemployed and married with three kids," Vandy said. Guthrie needed a gig. But the bosses weren't sure if an outspoken Socialist – the Bernie Sanders of his day – was the best for the job. But he drove up to Portland anyway and with the help of the producer, talked his way into a deal and signed on to bang out 26 songs in just 30 days. "You know, it wasn't like he wrote the White Album in 30 days," Vandy said. "He used traditional melodies as the base of his songs, but he was able to distill the idea of what the Columbia River projects were all about and also wrote beautiful, almost love letters to the Northwest." They would eventually become some of Guthrie's most iconic songs and immortalize the Northwest for the rest of the nation. Songs like "Pastures of Plenty," "The Grand Coulee Dam" and the classic "Roll on Columbia." Vandy says it was one of the most productive periods of Guthrie's career. But it almost didn't come to be. The documentary got made with one of his songs in it but was shelved because of World War II and the end of the new deal. The avowedly socialist singer would be blacklisted as the political climate changed and he became persona non-grata with the feds. It wasn't until the BPA started planning for its 50th anniversary in the 80's that Guthrie's Northwest legacy would come to light. Vandy says an audio-video guy named Bill Merlin discovered the film in a box somewhere and stuck it on a projector to see what it was about. "And he realized there was a Woody Guthrie song in there, and there was Woody Guthrie in the credits. And then he realizes that Woody Guthrie actually worked there," Vandy said. Merlin went searching for other artifacts in the attic from the musical legend and hit the jackpot: 17 original acetate recordings of songs Guthrie wrote and recorded during his month in the Northwest. "That was thrilling and one of the best discoveries was his actual vocal version of 'Roll On Columbia,' which no one had known he had actually recorded before. Everyone knew the song from other people, or songbooks or school," Vandy said.

Stories like that have captivated Vandy for years, which he chronicles in detail in the new book. He hopes it brings widespread awareness of what he says is Guthrie's unprecedented musical contribution to Northwest history. **This year marks the 75th anniversary of Woody Guthrie's groundbreaking visit to the Pacific Northwest.** Along with the book, a number of special activities are planned. Friday night, Vandy will hold a reading and discussion at Seattle's Town Hall with award-winning Seattle rock writer Charles Cross. It'll also feature performances of the lost songs. On May 26, there will be a concert at Benaroya Hall featuring a number of great musicians including Dave Alvin of the Blasters, John Doe from X, Shelby Earl and more. Vandy will host a special Woody Guthrie Day at Grand Coulee Dam on May 28 featuring film screenings on the dam itself, book readings and song performances. **Sadly, Guthrie never saw how much of a mark he would ultimately leave on the Northwest and America.** He suffered from Huntington's disease the last 17 years and stopped playing music altogether. It was only after his death his true legacy would come to life, Vandy said.

(The FERC says no.)

Environment Report Says License Should Be Denied for Bear River Narrows Dam

By JUDY FAHYS • 4/28/16, kuer.org

A scenic stretch of the Bear River just north of the Utah line has been eyed for years as the proposed site for the Bear River Narrows Dam. **The staff for the Federal Energy Regulatory Commission concluded this week that the dam can't be built without ruining a popular tubing and fishing spot and millions of dollars of habitat restoration.**

Kathy Rinaldi of Greater Yellowstone Coalition says the 4.5-mile stretch is special and the last truly wild section of the Bear.

"To think of that area inundated, with a dam and another reservoir," she says, "is pretty heartbreaking considering the environmental impacts as well as the recreational amenities that it provides folks and the economic benefit it provides to the communities down there." Other critics include the Idaho-based Shoshone Bannock tribe and historians set on preserving the Bear River Massacre site.

The Twin Lakes Canal Company has proposed the dam for storing water for irrigation and for 10 megawatts of hydropower. **Company President Clair Bosen says the fight's not over.**

"We've been working on this 14 years, and spent millions of dollars," he says, "and we wouldn't have kept going if we didn't feel like we were making headway and that FERC was saying anything derogatory about the project."

Bosen says the dam offers other benefits to the community, like improved water conservation and stability for farmers who often face irrigation shortages.

But other observers say the staff's advice is almost certain to mean the commission will deny the license. A final decision's not expected for several weeks.



The Twin Lakes Canal Company has been proposing a dam for the Bear River Narrows for years, but an environmental impact statement for the project concludes by saying the Federal Energy Regulatory Commission should deny a license for it. Kevin Lewis / Idaho River United

(We've known this in what seems forever.)

Non-powered dams have big energy potential in the United States

April 29, 2016 | Matt Mills, e-wisdom.com

Don't forget about hydropower

When talking about renewable energy source in the U.S., solar energy and wind energy typically dominate the conversation. **But don't sleep on hydropower.**

According to the U.S. Energy Information Administration (EIA), hydropower actually outpaced all other renewable sources in electricity generation in 2015. **Last year, hydropower accounted for**

roughly 6 percent of total U.S. electricity generation, while wind power accounted for about 4.7 percent and solar energy trailed far behind with a 0.6 percent share. All three of those renewable sources trail far behind coal, natural gas and nuclear power as electricity sources, but the three have made big increases in recent years. Coal and natural gas still each accounted for about a third of U.S. electricity in 2015, while nuclear energy powered about 20 percent of U.S. electricity.



The potential of NPDs

They recently said that it expects about 1,083 megawatts (MW) of hydroelectric power capacity to be installed in the U.S. between 2015 and 2019. Of this expected 1,083 MW of new capacity, the EIA expects 39 percent (422 MW) to come from non-powered dams (NPDs). NPDs are already-existing dams that do not currently have electricity-generating capabilities. **Back in 2012, the Department of Energy (DOE) estimated the power potential of NPDs in the U.S. and determined that NPDs had the potential to generate up to 12 gigawatts (GW) of electric power.** With that in mind, the 422 MW of new electricity capacity that the EIA expects from NPDs between 2015 and 2019 is just the tip of the iceberg. The DOE believes that hydropower has far more potential than that modest gain.

Kentucky, West Virginia & Ohio

Kentucky and West Virginia will each see large increases in capacity from NPDs this year, the EIA noted. Kentucky should increase its hydroelectric capacities by about 32 percent in 2016, while West Virginia should see a 15 percent this year. Kentucky will increase its overall renewable capacity by 30% by the end of 2016. **Of all the new and planned NPD capacity additions, nearly three-fourths of them are taking place along the Ohio River.** Since 2012, four NPD projects have started up along the Ohio River: Cannelton Hydroelectric Project, Meldahl Hydroelectric Project, Smithland Hydroelectric Project, and Willow Island Hydroelectric Project. **According to the EIA, the completion of those four projects will result in a 130 percent increase in hydroelectric capacity along the Ohio River — from 313 MW to 554 MW.**

(Going with the flow.)

NRECA Lauds Partnership with Hydropower

By Cathy Cash | ECT Staff Writer, May 2nd, 2016

NRECA interim CEO Jeffrey Connor told the National Hydropower Association how clean, reliable hydropower is vital for electric cooperatives.

Addressing the National Hydropower Association April 26 in Washington, Connor praised the 25-year relationship NRECA has shared with NHA and how the organizations must continue to work on project licensing reform and other issues to sustain hydropower. **"We are very, very pleased to work with NHA on licensing reforms. In some cases,**



NRECA interim CEO Jeffrey Connor underscored how clean, reliable hydropower is vital for electric cooperatives and how the association will continue to partner with hydropower producers to ensure the resource's future.

projects have sat on the shelf for 10 years or more,” Connor said. “It still always surprises me the resistance we get and how hard it is to tell the story of hydropower in Washington.” The organizations labored with key advocates and lawmakers to include provisions to reform the licensing and relicensing of hydropower projects in broad energy legislation moving through Congress this year. “We have a path forward through partnership,” Connor told the audience of nearly 800 attending NHA’s annual Waterpower Week. “In order to continue to have that kind of influence we really have to work closely together. Not just to improve licensing but to keep an eye on all the infrastructure concerns that we share.”

Connor noted that the Clean Power Plan and regulations from the Environmental Protection Agency to crack down on power sector carbon dioxide also give cause to join forces in support of hydropower.

(Everybody else knows best.)

Alaska has incredible potential for hydropower, when it's done right

By Rand Hagenstein, Corinne Smith, Dustin Solberg, May 4, 2016, adn.com

When you flip a light switch in Alaska, do you know where the electricity comes from? It doesn't all come from the same place. While natural gas and oil account for most of the state's electricity, more than a fifth comes from renewables. This tells us two things. First, renewable energy has a proven track record here. Second, there's room for more, and on this point the state of Alaska is already on the move. The nation's on board too: Sen. Lisa Murkowski's bipartisan energy reform bill, recently approved by a wide margin in the U.S. Senate, supports building a new era in renewables.

In fact, Alaska's goal calls for producing half of the state's energy with renewables such as solar, wind, tidal and hydropower by the year 2025. As Alaskans, we're eager to get there. What Alaska community doesn't seek low-cost, clean and reliable energy options? And given the changes we are seeing to our climate, we're increasingly aware of the imperative for carbon-neutral energy sources.



Pictured: The Blue Lake Expansion Project during construction in 2014. The project, now complete, raised the height of an existing hydroelectric dam near Sitka in Southeast Alaska, increasing its power generation capacity. Courtesy Blue Lake Expansion Project

Currently, 20 percent of Alaska's electrical production, compared to 7 percent for the U.S. as a whole comes from hydropower. In Alaska, opportunities to tap the energy of flowing water still cover the map. At the same time, Alaska has a particularly special relationship with its rivers: Our state produces more salmon than any place on Earth. Salmon are a mainstay of our state's economy and they're essential to the Alaska way of life. Fortunately, science has already taught us what salmon need to thrive. For hydropower to make sense here, it needs to pass an Alaska litmus test: Developing hydropower cannot come at the expense of salmon. The next step, then, is to conceive, design and operate all hydropower projects with salmon in mind from the very beginning so that they meet these criteria:

- Hydropower projects should avoid salmon streams whenever possible;
- Hydropower projects must allow fish to migrate freely, both upstream and downstream;
- River flows must not be altered beyond minimum and maximum thresholds that allow fish populations to thrive;
- Development must allow for the downstream transport of the river's natural sediment and wood -- a key function of a healthy river; and

- A dam must be designed and operated in a way that doesn't alter downstream water temperatures.

Our analysis -- in the form of an ecological risk assessment of hydropower development on large braided rivers with salmon -- shows large dams would have a hard time meeting these criteria. There's good news too: It's entirely possible for an Alaska hydropower project to pass our litmus test. In fact, many already have.

To list just a few examples: Near Valdez, the Allison Creek hydroelectric project now under construction is a run-of-river development -- that is, it doesn't block fish or the river's natural sediment. Projects at Blue Lake near Sitka and Black Bear Lake on Prince of Wales Island generate electricity on systems where salmon aren't present. Cordova's Power Creek run-of-river hydropower project is built upstream from spawning areas and allows natural sediment to travel downstream. Energy from Alaska's 50 licensed hydropower facilities displaces millions of gallons of fossil fuels annually, at a big savings for communities.

Alaska has already come far, but we can do more. Our state's own renewable energy goal challenges us to do so.

Worldwide hydropower production is expected to double over the next 20 years. We're not envisioning a new boom in megaprojects like those of the past. Instead, smaller, more efficient and far less environmentally damaging technologies are gaining momentum. Alaska is poised to help lead the new era of sustainable hydropower.

The time for unleashing innovation and a healthy dose of Alaska know-how is now. So long as we take care of the natural assets that have always provided for us, we'll have a bright future ahead.

Rand Hagenstein is Alaska state director for The Nature Conservancy in Anchorage. Corinne Smith, of Talkeetna, directs the organization's Mat-Su program. Dustin Solberg, of Cordova, is a commercial fisherman who directs outreach for The Nature Conservancy. The views expressed here are the writer's own and are not necessarily endorsed by Alaska Dispatch News, which welcomes a broad range of viewpoints. To submit a piece for consideration, email commentary@alaskadispatch.com. Send submissions shorter than 200 words to letters@alaskadispatch.com or click here to submit via any web browser.



Environment:

(Wonder if this will work.)

50-year deal could help American shad get over Conowingo Dam

By - Associated Press, April 29, 2016, washingtontimes.com

CONOWINGO, Md. (AP) - A 50-year deal could help millions of American shad get over the Conowingo Dam.

The Baltimore Sun reports (<http://bsun.md/1SCYbSr>) in a new agreement struck this week with the U.S. Fish and Wildlife Service, the dam's owner, Exelon Corp., pledged to increase the capacity of a fish lift to help more migrating fish get upriver. The agreement is part of Chicago-based Exelon's efforts to renew its federal license governing dam operation, and follows years of discussion about how to help the fish migration. Wildlife advocates say the numbers of American shad journeying from the Atlantic Ocean to spawning grounds in the Susquehanna River each year could climb to 2 million over the next 50 years. The numbers of shad and herring that have passed the Conowingo have dwindled in recent years.



(Do you know what a beaver looks like? [Click on the link and take the quiz.](https://www.buzzfeed.com/katangus/a-dam-important-quiz?utm_term=.rqOMW1bXRJ#.fy2kdNZab3))
[https://www.buzzfeed.com/katangus/a-dam-important-quiz?
utm_term=.rqOMW1bXRJ#.fy2kdNZab3](https://www.buzzfeed.com/katangus/a-dam-important-quiz?utm_term=.rqOMW1bXRJ#.fy2kdNZab3)

(Maybe that's the way Mother Nature intended.)

Fish win, birds lose in Klamath agreements

2 deals would remove 4 dams, restore habitat along the Klamath River

Agreements offer hope for survival of endangered salmon

But they offer nothing for the refuges along the Pacific Flyway

By Jane Braxton Little, APRIL 30, 2016, sacbee.com

Fish gotta swim. Birds gotta fly. Most of us support their survival in equal measures. So, no doubt, do the conservation groups that were part of two recently approved deals to remove four dams and restore more than 400 miles of habitat along the Klamath River. **But in the settlements signed last month, fish trump birds.** Both the pact to remove the dams and one to protect Klamath Basin farmers snub the wildlife refuges that provide habitat for 80 percent of the waterfowl along the Pacific Flyway. **The agreements, which cap decades of often acrimonious**



efforts to restore the iconic river, leave the 310-square-mile Klamath Basin Wildlife Refuge complex high and dry. While the Klamath agreements offer the best hope for the survival of endangered salmon, they offer nothing for the refuges already chronically shorted on water supplies. "They've always been treated as second-class recipients of water," said Mike Lynes, Audubon California's director of public policy.

The Klamath River flows from southern Oregon through Northern California to Requa, where it empties into the Pacific Ocean. Of the six separate refuges within its basin, it is the Lower Klamath, established in 1908, that is the hardest hit. Before rail lines and roads were built between them, **the Klamath River spilled into the lowlands that are now part of the refuge.** Today the 11,000-acre Lower Klamath has no water source of its own. The bald eagles and white-faced ibis it hosts are dependent on a system of agricultural irrigation canals, which are already over-allocated to the farmers who share the refuge. Both the pact to remove the dams and one to protect Klamath Basin farmers snub the wildlife refuges that provide habitat for 80 percent of the waterfowl along the Pacific Flyway. **The nation's first waterfowl refuge, created by Teddy "Conservation President" Roosevelt, suffers frequent water shortages that are devastating to birds.** This comes when the Lower Klamath and refuges like it are increasingly vital to migrating birds – sanctuaries amid the agriculture, development and drought that are drying up their habitat. Before the Gold Rush, California boasted more than 4 million acres of wetlands. Today there are less than 300,000 acres. White pelicans and black terns, stopping off to rest and stage for the next leg of their journeys, are crowded into increasingly small spaces. Avian cholera, botulism and other diseases are taking their toll, killing tens of thousands of birds. As long as refuges remain a zero priority, birds will continue to suffer.

State, federal and conservation officials have a chance to remedy these refuge wrongs. The recent Klamath accords are widely viewed as the first of several steps designed to restore the habitat of the entire Klamath Basin. They replace a much more comprehensive plan that fell apart when Congress failed to act on a crucial piece of the pact by a Dec. 31 deadline. The failed legislation developed a template for water allocations, and it's available to the next negotiators.

They should use it to identify a firm water supply for wildlife refuges. And they will, said John Bezdek, a solicitor with the Department of the Interior. The parties understand the need to continue to negotiate on the bigger suite of issues and are already beginning to address them, he told me. But after years of tedious, rancorous meetings, new talks labor under a cloud of negotiation fatigue. What if there is not enough momentum to address the refuge issues? That would leave snow geese stranded without the respite they need to fly the 1,500 miles to their nesting grounds in the Arctic tundra. It would leave eared grebes fewer inland waters for nesting. The Klamath Basin negotiators have done well to ensure a future for salmon returning from the Pacific to their natal spawning grounds. We can all rejoice in this success. Now they must turn their attention to the birds and the wetlands that sustain them. *Jane Braxton Little, a freelance writer, covers science, natural resources and rural Northern California from Plumas County.*

(Good question. What's next?)

Environment: Can dams be operated without killing rivers?

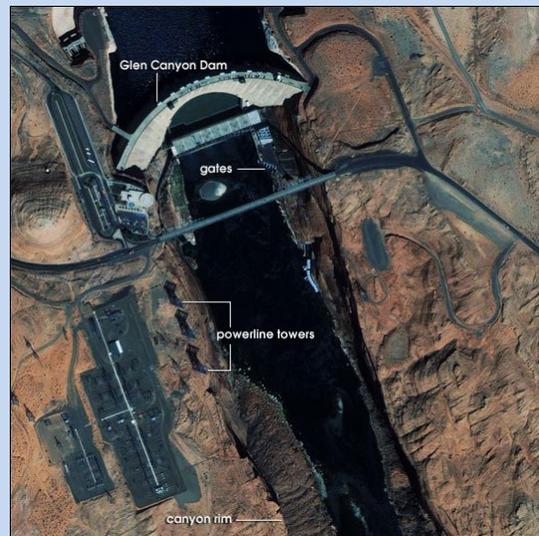
May 3, 2016, by Bob Berwyn, summitcountyvoice.com

New study eyes impacts to aquatic insects

Staff Report

Using a vast sample of data collected in a citizen science project, researchers say they've been able to discern how hydropeaking affects aquatic insects that form the base of river food chains.

The information could help resource managers develop alternative hydropower practices that aren't as harmful to ecosystems, according to a new study published in the journal *BioScience*. Hydropeaking refers to the practice of increasing river flows at times of peak demand, generally during the day. This study shows how abrupt water level changes affect aquatic insects in every stage of life. The research was done by scientists with the U.S. Geological Survey, Oregon State University, Utah State University and Idaho State University. "For the first time, this study determines the ecological impacts of hydropeaking separated from other dam-imposed stressors, and identifies the specific cause-and-effect relationships responsible for biodiversity loss below hydroelectric dams," said Ted Kennedy, USGS scientist and lead author of the study.



Glen Canyon Dam. Image courtesy NASA Earth Observatory.

The scientists evaluated more than 2,500 insect samples taken on the Colorado River in the Grand Canyon, downstream of Glen Canyon Dam. This dataset was collected almost entirely by river guides, educational groups, and other citizen scientists. Researchers also tested the effects of abrupt water levels changes on river health by comparing insect diversity across 16 large dammed rivers in the western United States that vary in the degree of hydropeaking. Hydropower is, of course, one of the world's key sources of clean energy, generating about 19 percent of the world's electricity supply. That's much more than solar, wind, and other renewable sources combined. But when water releases drastically change river flows with huge daily fluctuations, it creates artificial tides along river shorelines to which freshwater organisms are not adapted. Insects that lay their eggs near the shoreline of streams are particularly vulnerable to impacts from hydropower dams. Ecologically important insects groups, such as many species of mayfly, stonefly or caddisfly, lay their eggs attached to rocks or vegetation slightly below the water surface, where they soon hatch. If water levels rapidly drop and expose the eggs, they can dry out and die before hatching.

"These large daily rises and peaks in river flows due to hydropower dams are not normal. Prior to the construction of dams, there were almost no major daily changes in river levels in places like the Grand Canyon," said David Lytle, Oregon State University professor and co-author of the paper. "This can interrupt the egg-laying practices of some species, and the impact of this was poorly appreciated. Until now, no one really looked at this aspect, and our results show that it causes serious problems for river health." The new study shows that daily hydropeaking operations on Glen Canyon Dam are at least partially responsible for the absence of mayflies, stoneflies and caddisflies in the Grand Canyon. Changing flow regimes by leaving water levels stable for at least a few days could give bugs a few days to lay their eggs with success. "If mitigation flows are successful, a more diverse community of aquatic insects should improve the health of the Colorado River ecosystem in Grand Canyon, including the largest remaining population of endangered humpback chub," said Kennedy. "Many urgent questions in ecology remain unanswered, because scientists are bumping up against data limitations where it is impossible for them to collect sufficient data to answer complex questions across large landscapes," said Kennedy. "This study is a powerful example of how citizen science collaborations can fundamentally advance learning and generate important new insights." To learn more about USGS science in the Grand Canyon, visit the USGS Grand Canyon Monitoring and Research Center's website.

(What a ride.)

Migrating fish lift at Holyoke Dam

The fish got a lift today over at the Holyoke Dam.

By Jennifer Pagliei, May 4, 2016, wwlp.com

HOLYOKE, Mass. (WWLP) – The fish got a lift today over at the Holyoke Dam. 22News was at the Holyoke Dam to watch the fishing being lifted and how it happened. It was a little cooler out today, and believe it or not, fish like warmer sunny days like we do. The Robert Barrett Fishway opened its annual viewing season at the Holyoke Dam, Wednesday. Located off Bridge Street in Holyoke, the Barrett Fishway is the first and most successful fish lift on the Atlantic Coast. After swimming 80 miles up the Connecticut River, the fish arrive to be lifted up and over the dam.



Mark Rzewski, from Granby, loves coming to the opening day of the fish lift, "We usually come once a year the earlier the better check out the stripers. Hope to see some which we haven't seen any today but still always nice to come and get a glimpse of nature."

The fish take an elevator from the lower level to the top of the dam. Once the fish are lifted up and over the dam they are then let out into this tank where they are individually counted.

Counting the fish is important. They need to keep track of the Salmon and Striped Bass populations. Some fish, like shad, enjoy the warmer air and water. Only a couple of hundred fish were lifted on this cool rainy day. Kate Sullivan, Marketing Coordinator of Holyoke Gas & Electric, told 22News, "The conditions are a little cool and also the sun isn't shining the shad really like when the sun is shining and the water starts to warm up, were not seeing as many as we would see but the migration has started." The fish swim up-river to spawn every year in the Springtime when the water warms up.



Other Stuff:

(Renewables on the way with their higher energy costs.)

U.S. Renewables 'Swamped' Natural Gas In Q1



Setting a new lopsided quarterly record, U.S. renewable sources (i.e., wind, solar, biomass and hydropower) outpaced – in fact, swamped – natural gas by a factor of more than 70:1 for new electrical generating capacity placed in-service during the first quarter of this year, according to a report from nonprofit SUN DAY Campaign.

Citing data from the Federal Energy Regulatory Commission's (FERC) latest Energy Infrastructure Update, the report says nine new "units" of wind provided 707 MW in the first quarter, followed by 44 units of solar (522 MW), nine units of biomass (33 MW) and one unit of hydropower (29 MW). By comparison, only two new units of natural gas, totaling 18 MW, came online during the period. There was no new capacity reported for the quarter from coal, oil, nuclear power or geothermal steam. Furthermore, the report says solar (75 MW), wind (72 MW) and biomass (33 MW) accounted for 100% of new generating capacity reported by FERC for just the month of March. Solar and wind were the only sources of new capacity in January, as well. The report says renewable energy sources now account for 18.11% of total available installed generating capacity in the U.S.: hydro – 8.58%, wind – 6.39%, biomass – 1.43%, solar – 1.38%, and geothermal steam – 0.33%. For perspective, when FERC issued its very first Energy Infrastructure Update in December 2010, renewable sources accounted for just 13.71%, the report notes. Moreover, the share of total available installed generating capacity now provided by non-hydro renewables (9.53%) not only exceeds that of conventional hydropower (8.58%) but is also greater than that from either nuclear power (9.17%) or oil (3.83%). "While often touted as being a 'bridge fuel,' natural gas is increasingly becoming an unnecessary bridge to nowhere," comments Ken Bossong, executive director of the SUN DAY Campaign. "As renewables continue to rapidly expand their share of the nation's electrical generation, it's becoming clear that natural gas will eventually join coal, oil and nuclear power as fuels of the past."

(From a friend - [Great photos of Grand Canyon](#). Click on the link, or copy and paste it into your browser.)

<http://www.humfer.net/gcanyon/index.html>



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