

8/05/2011



Some Dam – Hydro News™

And Other Stuff



Quote of Note: "You can't live a perfect day without doing something for someone who will never be able to repay you." - - John Wooden

"Good wine is a necessity of life." - -Thomas Jefferson

Ron's wine pick of the week: Lapis Luna Romanzo Moon Lodi Shoup Vineyard Zin 2007

"No nation was ever drunk when wine was cheap." - - Thomas Jefferson

Other Stuff.

One week it's all about hydro, the next week mostly about dams!

BPA Agrees To \$3 Billion Settlement

Cassandra Profita | July 27, 2011, news.opb.org

The Bonneville Power Administration has settled a long-running legal battle over how to share the benefits of cheap public hydropower with private utility customers. The BPA has agreed to pay more than \$3 billion to investor-owned utilities over 17 years. Power rates for Bonneville customers will increase by nearly 8 percent starting Oct. 1. But BPA spokesman Doug Johnson said the rate increase would have been higher without the settlement. Investor-owned utilities will pass the money on to their customers through lower electricity rates. All six investor-owned utilities in the Northwest have agreed to the settlement. But not all of Bonneville's publicly owned utilities have signed onto the deal. Portland General Electric is expecting \$9 million in the first year of the settlement. Spokesman Steve Corson says that will save PGE customers 1 percent on their electricity rates come January, but other costs could offset those savings.



Dams:

Controversial Willow Creek Dam, built to prevent repeat of deadly 1903 flood in Heppner, saves the day

By Richard Cogle, The Oregonian, oregonlive.com, July 24, 2011

Heppner, Ore. -- Scoffers laughed because it leaked. They said the U.S. Army Corps of Engineers built it in the wrong place. They called it the "Berlin Wall." But Willow Creek Dam -- a

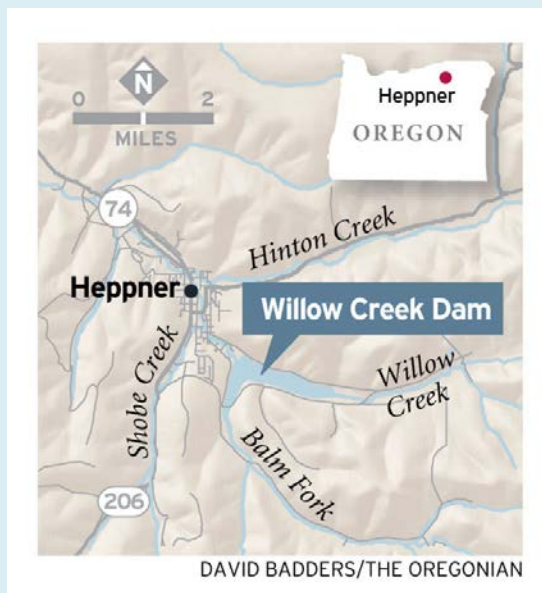
revolutionary roller-compacted concrete impoundment built to prevent a replay of a tragic 1903 flash flood -- proved its mettle against two potentially deadly high water events this spring. Without the 1,780-foot-long, 165-foot-high dam, "we'd have had a monster flood," said Heppner Fire Chief Rusty Estes. "That dam did its job." Heppner, population 1,291, is tucked into a treeless bunchgrass canyon where four occasionally unruly creeks converge. It's probably the worst possible town site a group of 19th century pioneers could have picked. Lazy and tranquil most of the time, the streams occasionally transform into violent, frothing whitewater nightmares. That happened during late May and early June when unusually heavy rains and melting snowpacks in the Blue Mountains triggered two dangerous flash floods. The worst of them unleashed 1,400 cubic feet of water per second that headed for Heppner in Willow Creek and Balm Fork. At the same time, 1,300 cubic feet of water per second raged down nearby Hinton and Shobe Canyon creeks.



Willow Creek and Balm Fork flow directly into Willow Creek Reservoir behind the dam. But Hinton Creek and Shobe Canyon Creek flow unfettered through the downtown. At Estes' request, the Corps of Engineers closed the dam spillways, cutting the flows through town in half. Many residents had no idea that Heppner avoided possible disaster, but reservoir levels later told the tale:

The water level behind the dam reached a record-breaking 2,090.57 feet above sea level on May 18 after the first flash flood, said Scott Clemans, a Portland District Corps of Engineers spokesman in Portland. The previous mark was 2,082.99 feet on May 8, 1995. The second flash

flood on June 6 lifted the level even higher to 2,092.44 feet. The Portland district of the Corps of Engineers oversees most of Oregon and southwest Washington, including 13 dams in the Willamette River Basin and two in the Rogue River Basin, most for flood control, he said. Clemans estimated Willow Creek Reservoir contained 9,122 acre-feet of water at the high water peak, well beyond the 6,249 acre-feet it typically holds. An acre-foot is the amount of water needed to cover an acre to a depth of one foot. "That is the highest I have ever seen them back up the water in all the years it has been in existence," said Terry Tallman, chairman of the Morrow County commissioners. Nobody's saying that another 1903 flood -- which killed 247 Heppner residents -- was in the offing. But without the dam, the situation could have been dire, all agree. "I believe the dam ought to have an attaboy," said Heppner Mayor Les Paustian.



Tragedy shapes town

Downtown Heppner is little changed from the close of the western frontier. False-front western buildings of local stone, brick and wood dominate. A 20-foot shamrock decorates the middle of Main Street, a reminder that Irish immigrants from County Tipperary, County Leitrim and County Longford settled the place. Teenagers here travel 45 miles one-way to Hermiston or 62 miles to Pendleton to see first-run movies, because a fire destroyed the old Star Theater in 1962 and no

one rebuilt it. It's a close-knit community forged out of tragedy and hardship that has shrunk steadily from 1,648 residents in 1950. The 1903 flash flood killed roughly a fifth of Heppner's townspeople. Another flood in 1971 inundated the business district. A 1990 fire wiped out most of a downtown city block. Heppner residents stick together, said 17-year-old Zech Hintz, waiting tables last week in a sandwich shop downtown. "If something happens, there's going to be food at your door and people supporting you," said the high school senior. "If you go to a football game, half the town is there. Century-old records suggest the 1903 flash flood followed an estimated 1 1/2 inches of rain that fell over 20 square miles above the town in a matter of a few hours. This spring's storms may have been worse, triggered by rainfall that some estimated totaled 4 inches in the same period. The difference is that the water roaring down Willow Creek and Balm Fork emptied into the reservoir, not the town. The Corps of Engineers squeezed down the outflow from the reservoir to a mere 50 cubic feet per second, Clemans said.

Dam controversial

Paradoxically, given the tragic loss of life in 1903, the initial proposal to build Willow Creek Dam was never popular here. Townspeople voted by a narrow 297 to 272 in 1981 to allow the federal government to construct it, but only because they feared they'd be unable to obtain flood insurance, loans and construction permits without a dam. When in place, the \$34.7 impoundment was regarded with suspicion. The reasons:

- Some insisted it was built in the wrong place. While the 1903 flood roared down Willow Creek, most flash floods between 1903 and the early 1980s came down Shobe Canyon to the southwest or Hinton Creek to the northwest, detractors said.
- The dam leaked like a rusty bucket. Seepage frightened some and resulted in vegetation so dense on its concrete face that a local logger threatened to graze sheep there. In 1988, a Corps of Engineers lake scientist warned that water and chemicals from the nutrient-rich reservoir were dissolving the concrete. An inspection team later declared the dam safe, but the Corps said water action eats up to 20 metric tons per year of the dam's 900,000-ton weight, though not enough to weaken it.
- Its revolutionary design put off many. The dam was the first in the nation built entirely of roller-compacted concrete. Sand, rock, cement and water were spread into 1-foot-thick layers and compressed, instead of pouring concrete into a form. It was constructed in only five months, about a third the usual time for dam of comparable size.
- Its presence was intimidating. The dam was designed to hold 18 million tons of water in suspension 100 feet above downtown.

Clemans said Willow Creek Dam could have handled worse storms than this spring's. "Even though this is the highest we have seen Willow Creek Reservoir, we still had something on the order of 14 feet of storage space left," he said.

Holding back danger: Region's aging dams await repairs; costs reach into millions

lohud.com, Jul. 24, 2011

Taxpayers and owners are spending millions of dollars to repair dams along Lower Hudson Valley waterways as the region's "high-hazard" structures show signs of age and the state steps

1903 flood

The day: A debris-laden wall of water roared down Willow Creek into Heppner at 12 mph on a muggy Sunday afternoon on June 14, 1903, killing an estimated 247 people and becoming enshrined in Oregon history as the state's worst natural disaster.

Aftermath: The flood caused \$1 million damage in turn-of-the-century dollars to bridges, a community water system, telegraph lines, businesses and graceful Victorian homes paid for by wheat, sheep and cattle fortunes. Survivors among the 1,146 Heppner townspeople spent a miserable night on high ground and commenced a miles-long search for bodies after daybreak. The remains of loved ones were brought back to Heppner in horse-drawn wagons and prepared for burial on the floor above the Beleveder Saloon by women of the community. Teams of men worked around the clock as gravediggers in the Heppner Masonic Cemetery.

Warning: The town has an alarm system with siren towers to warn of flash floods. There are three rallying points on high ground in case Heppner is ever inundated again.

up enforcement to prevent failures. "They're older structures down your way, some 100 years old or more," said Alon Dominitz, an engineer and chief of the state's dam safety program in Albany. "It's rare that we inspect a dam and find no deficiencies."

A Journal News computer-assisted analysis of the dams in Westchester, Rockland and Putnam identified 16 "high-hazard" dams that hold potential danger along with millions of gallons of water. The analysis was based on records obtained from the state Department of Environmental Conservation under the Freedom of Information law.

Among the findings:

- The 389 dams in Westchester, Rockland and Putnam average 75 years old, with the oldest dating to 1800.
- A Rockland County dam needs millions of dollars in repairs that have not been done, despite a 5-year-old report saying the structure's failure would cause flash flooding in minutes.
- In at least one case, ownership disputes have blocked repairs even with water seeping over failing spillways.
- Lacking funding, government agencies want to put off repairs but in some cases are forced to proceed under orders from the state Department of Environmental Conservation. Such is the case with two dams in Westchester that are to undergo \$12 million in state-mandated repairs.
- One breached structure no longer holds water but can't be delisted without expensive engineering studies to meet state requirements.



High-hazard dams aren't necessarily on the verge of breaking; they're classified that way primarily because they hold back enough water that a release would cost lives and heavy property damage.

Such structures get inspected every two years. Dominitz, who oversees the state's 7,000 dams for the DEC, said there are several dams in the downstate area that the agency is aggressively working to get repaired. State engineers are most concerned with two areas on a dam — spillway capacity and stability. Spillways pass water from the upstream side of the dam to the downstream side. When they're big enough, they keep water flowing where it was designed to go instead of flooding surrounding areas. Stability is a measure of the structure's strength — its ability to hold back the volume of water behind it without collapsing. As recently as 1980, about two of every three dams in New York fell short on those two criteria. Inspections and enforcement moved along incrementally, state officials said, until a 2004 dam break spilled billions of gallons from Hadlock Pond in the Adirondack community of Fort Ann, destroying nearby homes and roads. Hamstrung by a lack of funding and staff reductions, and stung by a 2006 state comptroller's report that detailed the DEC's problems with dam oversight, regulators about five years ago began filling key engineering posts, triaging the worst problems and pushing forward on those most in need of repair. Less than two months ago, the wheel stopped on Westchester, when county lawmakers were forced to spend more than \$12 million to repair two county-owned dams — Pocantico Lake in Mount Pleasant and New Rochelle No. 3 in Eastchester. Tough economic times prompt strong opposition to spending money, but with the DEC mandating renovations on both structures, the county approved the money. "The design work is almost completed," said Peter Tartaglia, a spokesman for the Westchester County Parks Department. "There are no construction dates per se, but

Problem Dams

Indian Brook Reservoir
Furnace Brook Lake
Swan Lake Dam
New Rochelle #1
New Rochelle #3
Pocantico Lake Dam
White Plains #1
White Plains #2
Lake Lincolndale
Browns Reservoir
Mamaroneck Dam
Lake Sebago Dam
Hillburn Reservoir
Pine Grove Lake
Congers Lake Dam
Garnerville Dam
Lake Casse Dam

we know we have to begin construction in 2012, and we're on target for that for both." Down the road from the New Rochelle dam, off Exit 18 on the Hutchinson River Parkway, sits a dam that may prove difficult to repair. Known as New Rochelle No. 1 and holding back Lake Innisfree, the dam needs spillway repairs. A U.S. Army Corps of Engineers report said in 1979 that it had "seriously inadequate spillway capacity and structural stability issues." Unfortunately, the owner is a corporation that has been defunct for decades, and the \$500 in daily fines the state could be assessing might have to be levied against whatever part of the state government might now own the dam. Who owns the structure at this point is still up for debate. "There is an open investigation," said Kathleen Gill, general counsel for New Rochelle, which owns adjacent property that was taken for back taxes and is now part of the renovation puzzle. "There is a portion of the property that the state has taken; we're trying to work out what portion of the dam structure they've taken." Gill said the city can't spend taxpayer money fixing a dam it doesn't own but noted that there does appear to be seepage on the sides of the dam. "What we do know is that the big problem — the tower — isn't owned by (New Rochelle)," Gill said. "We haven't gone to assess the dam because we would be trespassing." Gill said until the title has been verified, there is little anyone but the state can do. She said New Rochelle has even explored the idea of setting up a tax district or neighborhood association to maintain the dam for the benefit of those who live on the lake, but it's premature. No estimates have been done for the cost of renovation.

"The state has done some tracking of the (defunct corporation) but hasn't found any of the principals," Gill said. Dominitz declined to discuss the case in depth, saying only that state doesn't believe it took ownership of the defunct company's land and the matter is still being researched. Those who live around Lake Sebago in Rockland are also awaiting word from the state and from those who control the purse strings. The state has not yet approved money for at least \$2 million worth of repairs for the Lake Sebago Dam in Harriman State Park, despite a 2006 study showing it could cause flash flooding in Suffern and Sloatsburg in a matter of minutes if it were to fail. A state inspection in November found concrete deterioration and evidence of leaks, and DEC officials said the Palisades Interstate Park Commission hasn't responded to repeated requests to discuss repairs since 2008. Park officials said they've requested funds for the repairs and are still awaiting state approval. Rockland County officials are eyeing a large engineering bill to take care of a dam that no longer holds water. Pat Orlando has been living next to the Garnerville Dam for 30 years, and friends and relatives have enjoyed swimming there. But she doesn't miss the lake since the county reduced it to a wide spot in the Minisceongo Creek in 2007. Mostly it was a nuisance to the neighborhood, washing away parts of her yard in bad weather and drawing noisy, unsupervised children. "They would jump right off the dam into the waterfall and the rocks — God forbid," Orlando said. "Since they changed it, we haven't had any trouble."

The stone dam was built in 1875 as part of the Garner family's original water-powered industrial complex on the stream. But by 2003, the property had fallen behind on its taxes and was seized by Rockland County. After damage from Hurricane Floyd in 2007, the county spent \$650,000 to lower the spillway by 5 feet, effectively doing away with the lake. "In many areas, lakes are considered a nice amenity, but I don't think that was the case here," said Vincent Altieri, the county's drainage director. The county's now working to get reimbursed for repair costs and to get the dam reclassified as low-hazard, Altieri said. But the county estimates \$100,000 in engineering costs just to meet the state's reclassification requirements, even though the dam no longer holds water. Dominitz said he hadn't heard of such engineering reports hitting six figures but acknowledged that costs do run into the tens of thousands of dollars, a price that falls to the official owners of a structure. Overall, the state says the dams in the Lower Hudson Valley are in pretty good shape for their age. The problem areas need to be solved, and it takes willing and interested owners as well as state enforcement, Dominitz said.

A good example is the Croton Falls Dam, holding back 14.2 billion gallons of water on the border of Putnam and Westchester. That and the high-profile Kensico Dam, which holds back 30.5 billion gallons, have been renovated by the New York City Department of Environmental Protection at a cost of more than \$80 million for both. "The Croton Falls Dam is a success story," Dominitz said. "To their credit, the DEP hired a dam safety engineer to make sure they were in compliance." The

work at Kensico is finished, and DEP officials say the work on the 101-year-old Croton Falls Dam should be finished by the fall. "The upgrades will extend the useful life of the dam for 50 to 100 years and bring it into compliance with the latest state and federal standards," DEP spokeswoman Mercedes Padilla said of the \$49 million renovation.

(Gee, what's the problem – green power and a green dam!)

Will Dam Removal in the West Restore Salmon?

Anne Minard for National Geographic News, July 25, 2011, news.nationalgeographic.com

This story is part of a special National Geographic News series on global water issues.

A controversial plan to remove four dams from the Klamath River to save endangered salmon could make its way to Congress in the coming weeks. Capitol Hill lawmakers will consider taking down California's Iron Gate, Copco 2, Copco 1, and John C. Boyle dams at a cost of about \$1 billion, half of that potentially funded with federal tax dollars. The removal plan has the backing of several Native American tribes on the Klamath who rely on the river for salmon fishing, as well as farmers who depend on its water for irrigation. The plan also has the support of PacifiCorp, Warren Buffett's power company, which owns the dams. Buffett's company could benefit from dam removal because it might cost more to install the required modifications for fish passage if the dams remain. But if dams come down, salmon would be the biggest winners. ([Read the 2008 National Geographic magazine article on the Klamath River.](#))



Salmon runs have dwindled in the past century—from millions of fish to less than 100,000 in most years—primarily because of the dams, according to nonprofit environmental groups such as American Rivers and native tribes that depend on the fish. Those same groups say hits to water quality such as farm runoff are also to blame. Mike Belchik is a fisheries biologist for the Yurok Tribe in California. The tribe maintains that it has relied on the fish since "time immemorial," Belchick says, adding that archaeologists say humans have lived and fished in the area for at least 9,000 years. He says taking out the dams would allow the fish to return to their historic and more productive cold-water mountain streams, which are currently blocked by the dams, and help resolve disruptions to the main stem Klamath where they're just barely hanging on today.

No Silver Bullet

But a recent scientific review of the dam-removal plan warned that if dam removal went forward, it would not be a silver bullet. The independent [report](#), commissioned by the U.S. Fish and Wildlife Service, reported that dam removal could help boost Chinook salmon population if other factors, such as water quality and warming due to climate change are in kept in check. Belchik and the other proponents agree. Dam removal, even with its uncertainty, would open the door for a salmon rebound, he says—and helps assure their long-term survival. "That water's going to be stable even in the face of climate change. We need to get these dams down and get these fish to these cold water springs," he says. "That's their future."

Crash in the Klamath

The Klamath River originates in eastern Oregon and empties into the Pacific in northern California. Its diverse course—beginning with huge snow-fed springs and flowing over high desert on its way to the sea—supported thriving migratory salmon populations for thousands of years. In turn it also supported people who depended on the fish including the Yurok, Karuk, Klamath, and Hoopa Valley Indian tribes and, more recently, non-tribal fishermen. Just before the start of the 20th century, farmers moved into the basin. Some dams—including two on the upper Klamath that aren't planned for removal—were put in for irrigation. The other four Klamath dams—the

ones on the chopping block—are used solely for hydropower. Previous estimates have suggested the dams together produce the energy equivalent of 360 tons of coal, or enough to power about 70,000 homes. As the Klamath was developed, its salmon runs dwindled. Spring-run Chinook salmon have gone extinct near the dams, and species such as the Coho are so imperiled they can't be fished. Now, subsistence and commercial fishers alike are relying on just the fall-run Chinook. Once teeming with a million adult salmon, that run now sees fewer than 100,000 fish. Federal agencies are working on an economic analysis of the fishery, but it is not ready yet. Still, when the Yurok and Karuk tribes first asked more than a decade ago for the removal of the dams, "We got laughed at," Belchik said. But that was before 2001, when irrigation was shut down for the salmon's benefit, hitting some Klamath farmers' bottom lines. The next year, the government erred in the other direction—giving farmers too much water at the expense of the fish—resulting in a devastating fish kill. "Those disasters got the farmers and us talking," Belchik said. Greg Addington, executive director of the Klamath Water Users Association, which unifies the river's farmers, said most of his members believe there should be more dams, not fewer. But, as part of the dam-removal plan that the association now supports, irrigators will be guaranteed a reliable amount of water from year to year out of the Klamath. It's less than what they'd like, but it will allow them to stay in business, Addington said. (Read Addington's account from the field in "After Decades of Conflict, Adversaries Join Forces to Save the Klamath River—and Themselves.")

Ambitious Plan

Last year, 28 stakeholders, including the farmers, the tribes and PacifiCorp, signed the Klamath Hydroelectric Settlement Agreement. It spells out a laundry list of preliminary requirements that must be completed—studies, interagency agreements, and approvals all the way up to Congress and the Interior secretary—leading to removal of the dams by 2020. The recently completed scientific review was one of the requirements. The public utility commissions in both Oregon and California have signed off on the agreement, and Congress is the next stop. The forthcoming legislation won't request any congressional funds for the actual removal of the dams. The various interest groups have pledged the necessary \$450 million for that. But Congress would be required to approve up to \$500 million more over the next decade for companion projects necessary to restore fish habitat, such as replanting along the sides of streams, restoring water quality, and working with farmers and ranchers on water conservation. Rep. Tom McClintock, R-California, who chairs the House Water and Power Subcommittee, would be a pivotal figure in any congressional negotiations. "The attempt to destroy four perfectly good hydroelectric dams on the Klamath River at a cost of more than a half-billion dollars and at a time of severe electricity shortages is insane," he wrote in an email, adding that the proposal would also shut down the state-owned Iron Gate Fish Hatchery, which has started its own salmon recovery efforts. Should the agreement make it through Congress, the next step is for the Interior secretary (not capitalized?) to sign off by next March. ([See dam, irrigation, and water infrastructure photos.](#))

A Precedent

Klamath dam-removal advocates could get a boost from two dam-removal efforts in Washington State that are slated to start this fall. American Rivers is celebrating the pending removal of the Elwha River's 210-foot Glines Canyon Dam, as well as the Condit Dam on the White Salmon River, a tributary of the Columbia River. "When the dams were built 100 years ago, they served a useful purpose," Amy Kober, an American Rivers spokesperson, wrote in an email. "Today, we value our imperiled salmon runs and free-flowing rivers, and all the recreation, spiritual, and economic benefits they provide."

([Dam history – Yellowtail Dam](#))

Recreation area celebrates construction of Yellowtail Dam

By Brett French Of The Gazette Staff, The Billings Gazette | July 27, 2011, billingsgazette.com

A Wall Drug sign once hung on a rock cliff in the Bighorn Canyon, put there by some Wyoming-area jokesters. The sign said how far it was to the famous store located in the badlands of South Dakota.

Interesting facts

That's one of the interesting facts Jonathan Hall has unearthed this summer while collecting oral histories of the canyon and the construction of Yellowtail Dam, which backed up the Bighorn River and created a 70-mile-long reservoir that crosses the Montana-Wyoming border. "I feel like we've learned a lot, but come September we'll still have lots of questions and angles we wished we could have expanded on," Hall said. Hall and his fellow historian from the University of Montana, Shawn Bailey, are collecting histories through September to commemorate the 50th anniversary of the beginning of construction of Yellowtail Dam. The National Park Service, which manages the Bighorn Canyon National Recreation Area around the reservoir, is holding a celebration on Saturday at the Yellowtail Dam Visitor Center from 9 a.m. to 5 p.m. to mark the event. Refreshments will be served, historic film footage of river trips down the Bighorn River before the waterway was dammed will be shown and people with stories to add to the oral history are invited to attend.



Historical records

Hall and Bailey have been interviewing people in the Lovell, Billings and Hardin areas as well as researching newspaper archives to capture views on the impact of Yellowtail Dam on the people and places surrounding the canyon. The stories will become part of a historical record for future generations. Anyone with photos or other items to add to the research is encouraged to share them with Hall and Bailey. Work on Yellowtail Dam officially began in 1961. At least one worker died during the construction, which was finished in 1965. The dam was dedicated on Oct. 31, 1968. The dam is named after Robert Yellowtail, who was the Crow tribal chairman at the time. The Crow Tribe generally opposed the dam's construction and considered the canyon sacred ground. The 525-foot-high dam, the 15th-largest in the United States, was built for flood control, to generate power, create recreation opportunities and provide water for irrigation. Hall and Bailey have interviewed 21 people so far, ranging from dam workers to those who once lived in the canyon. They would like to collect up to 50 oral histories.



(Corps 1 – Anti-dam Advocates 0)

No ark needed

We've got West Hill

telegram.com, July 27, 2011

Often enough, government takes heat for something it does that makes things worse, or gets criticized for taking far too much time and money to do something it ought to have done long ago. And then there are those projects that the government does right and on time, and which make a real difference. The West Hill Dam, MA constructed a half-century ago on the West River in Uxbridge and managed by the U.S. Army Corps of Engineers, is just such a project.



The dam, whose construction was spurred by the deaths and property damage caused by Hurricane Diane in 1955, cost \$2.3 million and was built between 1958 and 1961. It opened 50

years ago this week. Few government projects have such a clear record of paying for themselves. Authorities estimate the West Hill Dam has prevented \$90 million in property damage over the years. However you figure inflation, that's some 40 times what the thing cost. And that doesn't take into account the years of pleasure that area residents have derived from the surrounding recreational land, which has been the backdrop for years of swimming, picnics, hikes, and sand castle contests. Not bad for government work.

Lawmakers OK system for Mass. dam improvements

July 29, 2011, boston.com

Boston—The Massachusetts Senate has approved a bill aimed at improving the safety and maintenance of dams across the state. The bill calls for emergency action plans to be drafted in case a dam fails, and requires dams to be inspected regularly. Under this bill, cities, towns, and owners of private dams will have access to low-interest long-term loans to cover the cost of dam inspections, repair, and removal. Those loans would be funded by unused money from the state's water pollution abatement trust, which currently has \$14.5 million available. Taunton Democrat Sen. Marc Pacheco, who sponsored the legislation, says it will improve the quality of dams and protect communities, including his, put at risk by unsound dams. The bill now moves to the House for approval.



Hydro:

(Fuzzy pic, but you get the idea – Big Project! This is something we've not seen in many years.)

Multibillion-Dollar Susitna Hydroelectric Dam Makes Progress

Alaska Governor Sean Parnell said Monday that the Susitna hydroelectric dam project is making progress.

By Bill McAllister, Jul 26, 2011, ktva.com

Alaska Governor Sean Parnell said Monday that the Susitna hydroelectric dam project is making progress. The Alaska State Legislature approved \$66 million for planning this year, and the governor signed a bill directing the Alaska Energy Authority to develop the project. The governor says that the AEA is recruiting its core project team with a goal of submitting a formal application to the Federal Energy Regulatory Commission in November. Parnell emphasized that the time for studying the Susitna dam is long past.



"Designing and building a hydro project is kind of like a game of golf...it's a long game. You can't putt your way to building a hydro project of this magnitude. You've got to pick the right driver and when you go to hit the ball, you've got to commit," said Parnell. The project is estimated to cost \$4.5 billion and is scheduled to come on line in 2023, generating 2.6 million megawatt hours of electricity a year.

Despite Troubled Past, Hydro Remains Dominant Renewable Energy Source in West

Although the era of building massive dams may be passed, states still look to harnessing the power of water to meet demands for renewable resources.

By Jamie Bedwell, Guest Writer, 7-27-11, newwest.net

About This Series: Students from The University of Montana School of Journalism, with the help of American Public Media's Public Insight Network, reported and wrote stories for New West on the energy economy of the Rocky Mountain region. The project originated as part of the Green Thread initiative at UM.

Long before the political quest for renewable resources, hydropower provided reliable energy to most of the West – and lots of it. But it came at the cost of a massive effort to dam the Colorado, Columbia, Missouri, Snake and almost every other major river in the region. Dams provide enough energy to power millions of homes and they irrigate huge swaths of land. The Hoover Dam alone produces over 2,000 megawatts (MW) of electricity, enough to power more than 2 million homes by itself. Compare that to the largest wind farm in the world, which generates less than half that amount. Although hydropower is by far the most widely used renewable resource, the political push to diversify renewable portfolio standards in the U.S. has shifted the focus from building large dams to upgrading operating capacity at existing ones, and building smaller hydropower plants that affect the waterways less.



Palisades Dam

From Dams to Neutrons

Through the 1950s and '60s, the Bureau of Reclamation, along with the U.S. Army Corps of Engineers, built more than 600 dams in the West, including the Hoover Dam on the Colorado River. By the 1960s, environmental concerns regarding the impact of the dams and the continued growth of the Northwest began to force regional planners away from further hydropower projects. So in the 1970s, the region embarked on an ambitious program to build nuclear power plants. "At the time, it was considered to be the go-go resource of the future," John Harrison, information officer at Northwest Power and Conservation Council, said. The Northwest decided to build five nuclear power plants to help augment the hydropower plants, hoping they would be able to meet the region's needs and produce enough energy to sell additional power for a profit. "It didn't work. And it didn't work in a spectacular fashion," Harrison said, adding planners vastly overestimated the future demand for power. As the costs of the nuclear plants mounted and the American public turned away from nuclear in the wake of the 1979 Three Mile Island nuclear accident in Pennsylvania, a project being constructed by the Washington Public Power Supply System collapsed. It was the largest municipal bond default in United States history at the time. "We are still paying, today, for nuclear plants that were never constructed, and we will be until about 2025," Harrison said.

Caught Between Default and a Fish Place

Even as regional power authorities reeled from the collapse of the nuclear effort, environmental activists were arguing against the older large-scale dams, saying they were causing dramatic drops in salmon populations. To help address the dual issues, Congress authorized the states of Idaho, Montana, Oregon and Washington to form the Northwest Power and Conservation Council. According to its website, "the Council develops and maintains a regional power plan and a fish and wildlife program to balance the Northwest's environment and energy needs." Although there are other interstate compacts, none have the degree of responsibility that Congress granted the panel. "It's an unusual beast. It's an interstate compact authorized by federal law, there's nothing else like in the nation," Harrison said of the 30-year-old agency. The council set out to address the three primary concerns facing energy consumers in the region. First, in the wake of the nuclear energy debacle, it developed a plan to guarantee reliable, low-cost energy to the Northwest for the next 20 years. This plan is reviewed and revised every five years. Second, to address diminishing populations of salmon and other wildlife concerns, the council developed a program to protect and rebuild fish and wildlife populations affected by hydropower development in the Columbia River Basin. Bonneville, the federal power agency in

charge of the region, is required to pay for this. The council's final task is to educate and involve the public in its decision-making processes. "Bonneville is required to make decisions about future power supply that are 'consistent' – that's the verb in the law – with Northwest Power and Conservation Council's plan," Harrison said. That agreement would end up leading to an era of continued growth in the use of hydropower, until the energy picture in the region changed. "When I first started, it was all about Bonneville having no power. They were going to start cutting people off, so renewables were really hot at that point. And we had what was called the 'hydro-gold rush,'" said Jan Lee, executive director Northwest Hydroelectric Association.

Later, natural gas became a leading technology, and when the price of power went down, interest in hydro dropped with it. By the 1990s, many dams started turning 50 years old, meaning they would need to go through a lengthy process of relicensing, further cooling interest in major hydro power efforts, but as the interest in big energy shrank, many took a look at more modest hydropower projects. "Now the trend in hydro is towards more renewable resources and small hydro," Lee said.

Small Hydro Vs. Big Hydro

What exactly defines "small" versus "big" hydro is somewhat in the eye of the beholder. Canada, for example, considers a 50 MW facility to be small hydro. The United States, by contrast, generally considers 10 MW as the upper limit of what can be termed small hydro, although, even here, some states stretch the definition to include 25 or 30 MW facilities. Is small hydro a way of preventing widespread environmental impacts or is it actually creating many more, but smaller impacts? The rise of smaller hydro projects gave rise to a new raft of green concerns as Amy Linn wrote about for New West in 2009, saying it could be the wave of the future "or a death-knell for wild and free rivers and habitats." But small hydro projects continue to spring up across the West, including Youngs Creek in the Cascade Foothills of Washington, as Linn wrote. Like most similar projects, this is being built above where salmon and other migratory fish swim. The project is slated to be completed this year and will generate 7.5 MW of power at its peak, enough electricity to power between 3,500 and 7,500 homes. "We're seeing water and irrigation districts, cities with pipelines doing small hydro within their pipeline systems, which are called conduit exemptions," Lee said. It takes six months to a year to get most conduit exemptions approved by the Federal Energy Regulatory Commission. "It's a fairly quick process. It uses existing diversions and existing pipelines so it's low cost power, and there's a lot of it that is in small pieces," added Lee, making conduit exemptions very low impact as well. However, small hydro just doesn't stack up to big hydro in terms of sheer numbers. Since one MW of power is enough to power 1,000 homes, by definition, even the largest "small" hydro facility can only power up to 10,000 homes at its peak, since most states consider anything above 10 MW to be big hydro. In contrast, the Chief Joseph Dam upriver from Bridgeport, Wash. has a capacity of more than 2,500 MW, enough to power 2.5 million homes. So if existing large hydropower facilities generate so much more power than small hydro, then why the push for small hydro?

How It Fits

Even though hydropower is technically a renewable resource – one that accounts for more than half of all renewable resources being used today in the United States – there is a political debate in many states whether to include hydropower to meet their Renewable Portfolio Standard (RPS). Many states have passed laws pledging to produce a certain percentage of renewable electricity by a certain year. Montana's renewable energy standard is 15 percent renewable energy by 2015. Washington's goal is 15 percent by 2020 and Colorado's is 30 percent by 2020. "If you were to allow existing hydropower to qualify as a renewable resource under the renewable portfolio standards law, then you wouldn't have to do much else, because there's so much of that already available," Harrison, information officer at Northwest Power and Conservation Council, said. So lawmakers in many states have decided to count only new and small hydro as renewable. "In other words, existing resources would meet so much of the requirement that there wouldn't be any need to build new ones," Harrison said.

Moving Forward

Since most of the available locations for large hydropower dams have already been dammed, the focus for these bigger producers is to improve production and provide safe passage for fish. More than 2,500 MW of power could be added by simply improving efficiencies at existing hydropower plants and adding hydro to non-generating dams, such as those used for reservoirs or agricultural irrigation, according to the U.S. Hydropower Resource Assessment for Washington state in 1997. The Bureau of Reclamation recently awarded \$25 million to Andritz Hydro Corporation to overhaul all four hydropower turbines at Palisades Dam in Idaho. "The old runners were the original ones – 50 years old," Karl Wirkus, regional director of the Pacific Northwest branch of the Bureau of Reclamation, said. "The new runners will help the facility produce power at its fullest potential," Wirkus said, which is 176.5 MW. The Bureau is also doing a complete overhaul of the third power plant at Grand Coulee in Washington. Wirkus said the third power plant has the largest generators in the world. Although large hydropower plants like this one generally aren't being built anymore, the Grand Coulee, Palisades and many other dams still provide for a majority of the renewable power in the west. "And that's nice because many of these dams will last 100 years," Lee said, compared to wind and solar projects, "that's pretty good."



Environment

(With all the problems we have, this is what's important!)

Sea Lions Rejoice: Feds Revoke Kill Authorization

By International Business Times Staff Reporter | July 27, 2011, ibtimes.com



Following a Humane Society of the United States petition, federal officials have decided to revoke the authorization for Oregon and Washington to kill sea lions eating endangered salmon at the Bonneville Dam on the Columbia River. The Humane Society said the decision means the two states cannot kill any of the federally protected sea lions unless NOAA fisheries approves a new request. Federal allow permits official to kill sea lions only if the government proves that they have a significant negative impact on salmon. Since 2008,

Oregon and Washington have killed dozens of sea lions that feed on salmon migrating upriver to spawn in the spring as they hit the bottleneck of fish ladders over Bonneville Dam on the Columbia River east of Portland, bendbulletin.com reported Wednesday. "We're delighted the agency has changed its mind and revoked the State's authorization to kill hundreds of native sea lions for having the audacity to eat fish for dinner," Jonathan R. Lovvorn, senior vice president and chief counsel for animal protection litigation for The Humane Society said, in a statement. "It's time to face the fact that killing sea lions doesn't do anything for salmon, and focus instead on real salmon conservation threats, like hydropower and commercial fishing." Steve Williams, assistant chief of fisheries for the Oregon Department of Fish and Wildlife, took a different view of the intervention to save the sea lions, and said they would apply for a new permit, and expected to get it. "It's a disappointing, frustrating situation for us in the state, but it appears to be the best course of action at this point in time," he said, bendbulletin.com reported. "We believe that removal of the animals at the dam has been effective."

Environmental Analysis:

In the years ahead, look for more petitions from animal rights and related environmental groups as they continue to lobby for way for humans to live in more harmony with animal life and the natural world. The new paradigm is not anti-development, but seeks a development that does not harm the animal or natural worlds.



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8/12/2011



Some Dam – Hydro News™

And Other Stuff



Quote of Note: *"An ounce of performance is worth a pound of promises."* -- Mae West

"Good wine is a necessity of life." - -Thomas Jefferson

Ron's wine pick of the week: California Winetasters Society Pinot Noir North Coast 2009

"No nation was ever drunk when wine was cheap." - - Thomas Jefferson



Dams:

Idaho to spend nearly \$2M to study proposed dam on Weiser River

John Miller, Associated Press, July 30, 2011, therepublic.com

Boise, Idaho — State water managers have voted to spend \$2 million to study building a big new dam on western Idaho's Weiser River. The Weiser-Galloway dam has long been a dream of Gov. C.L. "Butch" Otter, power companies and others with their eye on this site not far from Midvale as a means of boosting water storage, fulfilling obligations to help endangered salmon and steelhead and boosting electricity production downstream on the Snake and Columbia rivers. The Idaho Water Resources Board voted unanimously Friday to further assess whether the site would safely accommodate a dam and reservoir, including by taking core samples to make sure the river banks will support such a structure. That's critical, given Idaho's history of catastrophic dam failures, with the Teton Dam's collapse in 1976 killing 11 people and 13,000 cattle. Jack Peterson, the Idaho agency's liaison with the federal government, called the board's vote Friday "courageous" because "it's been a long time — 40 or 50 years — since a major storage site has been examined in the American West." An irrigation diversion dam already has been built near the proposed dam site. The massive structure foreseen to replace it, according to its promoters, would be strategically located, providing a water source to help reduce temperatures on the degraded Snake River where the Idaho Power Co. has slackwater reservoirs behind the three dams that form its Hells Canyon hydroelectric complex. In addition to providing water to improve fish habitat downstream, a new dam could also provide irrigation and flood control along the Weiser River's course that extends to its headwaters 50 miles upstream in the Nez Perce National Forest near the Seven Devils Mountains.

Just last March, the Idaho Water Resources Board and the U.S. Army Corps of Engineers completed a new analysis of the Weiser-Galloway project, concluding there were two major gaps in information that needed to be remedied before dedicating even more money toward a comprehensive feasibility study. The \$2 million approved — which is being taken from the state water agency's revolving development account that finances project to boost Idaho's water supply — will pay for taking and analyzing core samples, as well as for mapping and seismic testing to determine the safety and integrity of the land at the dam and reservoir site. The money will also help determine whether the proposed dam will actually provide the benefits its defenders promise, including helping improve salmon habitat on the Columbia River system. Peterson has said numerous landowners along the river where a new dam and reservoir would be built still must be convinced of the project's merits. What's more, environmentalists at Idaho Rivers United in Boise who have made a name for themselves calling for removal of four Lower Snake River dams to help boost salmon runs are casting a skeptical eye on this proposal. They say they'll look closely at what comes of the \$2 million study before weighing in on whether a big new Weiser River dam is necessary. "What's the real purpose and need for another expensive reservoir?"



said Kevin Lewis, Idaho Rivers United policy director. "And what are the impacts to the Weiser River?"

Hydro.

Bend council eyes hydropower project

July 30, 2011, bendbulletin.com

Bend City Councilors (Oregon) will decide Wednesday if they want to add \$5.6 million to the \$62.6 million reconstruction of the Bridge Creek water system for the chance to generate green energy using hydropower. City staff members have recommended that councilors add the hydropower unit to the overall project because they believe it will generate enough revenue over time to help limit future rate increases. Without the hydropower component, the Bridge Creek project, which includes a new water treatment facility and a 10-mile-long pipeline that will run under Skyliners Road, will increase residents' monthly water bills by 7 percent annually. HDR Engineering, Inc., which is the firm the city will pay more than \$12 million for design and consulting services, performed a study that found Bend could generate up to \$11.7 million in hydropower revenues by 2060.

(Hydro history – over 100 years and counting. Guess you could call the contracting an international crew. I bet the Italians brought the wine.)

Counting down to a new Rainbow Dam

Written by Bob Covington, Jul. 31, 2011, greatfallsbtribune.com

The Rainbow hydroelectric plant has been part of Great Falls' economic growth from the very beginning, and it symbolizes a tradition of hydroelectric energy that has been part of Montana's history and the Great Falls area for more than 100 years. According to journals and other written accounts, the people employed by Paris Gibson's Great Falls Light & Power Co. began work building Rainbow Dam on Aug. 24, 1908. That day a small crew began constructing a road from the Boston and Montana Copper Smelter to the Rainbow Falls and established a temporary tent camp, big enough to house and feed about 50 men.

The work crew was truly a melting pot. Austrians, Croatians and Italians were well



Original Dam

regarded for their skills working with rock and excavation, while Americans, Swedes and Norwegians focused their skills on moving timber, machinery and work requiring the use of rope and tackle. Union pay scale, considered to be good wages for the time, ranged from \$3 a day for common laborers to \$4.50 a day for carpenters, painters and steelworkers to \$6 a day for bricklayers. Health care was provided right at the work camp by three local physicians. Their fee was \$1 a month for each man on the payroll, which included medicine. It included nursing services and work site visits twice a week. Office and boarding house buildings were equipped with good sanitary plumbing systems and supplied with distilled water for drinking. Sixteen cases of typhoid fever, resulting from workers drinking river water in a day of poor public sanitation, were reported during the two years of work building Rainbow Dam, even though there were verbal and posted warnings to drink only the distilled water provided. Apparently, the workers didn't like its flat taste. Cleanliness also extended into the construction areas, where the use of an innovative compressed air system allowed workers to easily clean machinery and equipment and remove snow from timber and other exposed surfaces.

Rainbow was the second dam built along the Missouri River in Great Falls, coming soon after the Black Eagle Dam. In 1910, Rainbow was a larger, more powerful plant that supplied the energy to help power the industrial revolution in Montana. The dam is a testament to the kind of engineering and quality of workmanship that these people put into it 100 years ago.

Cushman Dam Settlement Approved

Written by Dedrick Allan Sunday, 31 July 2011, masoncountydailynews.com



A federal judge has approved the settlement agreement between the Skokomish Tribe and the City of Tacoma's public utilities department, possibly ending a decade-long, \$6 billion litigation dispute over fishing rights and dam construction. The Skokomish Tribe filed the class action in 1999, claiming that Tacoma's 75-year-old Cushman hydroelectric dam project has had "pervasive and

destructive environmental, economic, social, cultural and other impacts" on the tribe's fishing rights in the Skokomish River and "virtually eliminated the salmon and steelhead productivity of the entire North Fork" of the Skokomish. After several dismissals and a change of venue, the City and the Tribe negotiated a settlement under the supervision of the 9th Circuit's mediation program. The agreement, which became effective on July 18, has the city agreeing to pay the tribe \$6 million in compensation, \$5 million for flood mitigation and \$1.6 million to settle the tribe's trespass claims against the United States. The settlement also grants \$23 million worth of land around the Skokomish River, including a camp on Lake Cushman and a 500-acre ranch and park on the Hood Canal. U.S. District Judge Robert Bryan approved the consent decree between parties last week, finding it to be "fundamentally fair, adequate, and reasonable."

(It may be small potatoes to some, but it helps pay the bills)

City expects to save at least \$50,000 per year in energy costs through power purchase agreement

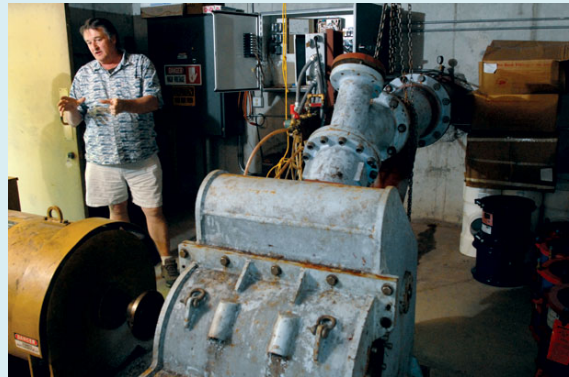
Whitefish to Refurbish Abandoned Hydroelectric Plant

By Myers Reece, flatheadbeacon.com, 07-31-11

With a power purchase agreement in place, the city of Whitefish can now pursue in earnest its plan to refurbish a defunct hydroelectric plant and begin producing its own electricity for the

power grid, with the potential to eventually save at least \$50,000 a year in energy costs. John

Wilson, Whitefish's public works director, said it's rare for a municipality in Montana to have its own small-scale hydroelectric plant. The only other town he knows of is Philipsburg, which has two plants that were installed by the same group of engineers around the same time as Whitefish's back in the early 1980s. "I'm not aware of any others – there may be another city or town in the state, but it's not common," Wilson said. "It will be interesting to see over time if more do it." At a July 20 meeting, the Whitefish City Council approved a 20-year agreement with Flathead Electric Cooperative split into two phases. In the first phase, the cooperative



pays the city \$400,000 in advance for 6.65 million kilowatt-hours of energy delivered to the power grid over an eight-year period. If the city fails to meet those conditions it will provide cash reimbursement to FEC. After eight years under the terms of the agreement, FEC will continue accepting energy in exchange for electricity delivered to selected accounts within the city's governmental departments. The value of this exchange to the city is estimated at about \$50,000 per year, but as electric rates increase Wilson said the city stands to save more money. "It's reasonable to expect that rates will be higher in eight years than now, so we expect (the agreement) will be even more attractive then," Wilson said.

The city accounts that will likely receive money from the exchange include the water and wastewater treatment plants, and perhaps Stumptown Ice Den and street lighting. Based on a consultant's research, the plant can generate enough energy to power the equivalent of 150 to 250 homes, which Wilson said would translate to no more than three or four selected city accounts. After construction in the early 1980s, Whitefish's facility had fallen into disrepair by the early 1990s, due to a combination of business reasons and a lightning storm, according to research by Jeff Arcel of Mother's Power Inc. Arcel produced a report for the city to help plan for reopening the facility, which is located near the water treatment plant. Philipsburg's hydroelectric facilities are still in operation. Richard Hoehne, director of public works in Philipsburg, said his town is its own power provider and uses the two plants to generate energy for seven city accounts and its school districts. If the city needs more energy it purchases it from NorthWestern Energy, and conversely it sells any excess to NorthWestern. "For us, it's worked out pretty well," he said. To restore the Whitefish plant to operating condition, the city will replace the turbine and generator, along with installing new controls and electric components. Work will also be completed on the building itself and new screens will be placed in the watershed to keep debris out. The city will use the \$400,000 from FEC plus \$200,000 from an Energy Efficiency and Conservation Block Grant to pay for the renovations. The city has contracted with Dick Anderson Construction out of Bozeman and CTA Architects Engineers' Missoula office. Wilson imagines outside work on the building to begin this summer. The turbine and generator won't arrive until winter or spring, "then hopefully we'll be able to have it running in time for spring runoff." "It's a very interesting project," Wilson said. "When the opportunity's there we're happy to do it. It's sort of like our recycling program – it reflects the values of our community."

(Good news – two articles - about what everyone knew would be the outcome. Now, what will International Rivers Network and American Rivers do to claim hydro is not a renewable energy source?)

New Findings on Hydro Power Could Shake up Renewable Policy

Susan Kraemer, August 1, 2011 in Climate Change, cleantechnica.com

Hydroelectric power has long been left out of renewable energy counts, on the assumption that it creates some greenhouse gas emissions as vegetation caught in damned rivers rots. But that may be about to change, with the [results of new research just published by Dr. Jonathan Cole in](#)

[Nature Geoscience](#) finding that hydroelectric power reservoirs are responsible for only about a sixth of the carbon dioxide and methane previously attributed to them.

An international team of scientists has amassed the largest data set to date on greenhouse gas emissions from hydroelectric reservoirs. The new analysis of 85 globally-distributed hydroelectric reservoirs revealed that these systems emit only 48 million metric tons of carbon annually, much lower than the earlier estimates of 321 million metric tons. In addition, most of the emissions only occur when



reservoirs are newly built, as construction leaves behind decomposing vegetation and soil organic matter. But as they age, carbon and methane emissions decline, with cold-water systems stabilizing much more rapidly than warm water hydroelectric power stations. But even so, including both cold and warm systems, all hydroelectric reservoirs represent only 16% of the greenhouse gas emissions from all man-made reservoirs such as for municipal water supplies.

Along with geothermal power, hydroelectricity is one of the oldest methods of generating renewable energy, and at this point, represents 85% of "renewable" energy produced, and 20% of all energy. Yet most policies requiring the production of additional renewable energy do not include hydro power. Although some states in the Northeast and Northwest do allow various percentages of hydro power to count towards renewable energy requirements, most states disallow hydro, because of the much higher emissions found by earlier research. The new findings could really shake up the world of renewable energy policy. Utility-scale hydro-electricity does not count towards the renewable energy standards (RES) mandate in California. Any new hydroelectric power must not require any appropriation or diversion of water from a watercourse, so utility-scale hydro-electric power will never be built in California, which has a 30 MW upper limit. Only future wave energy off-shore would qualify for its strict renewable rules. But if its old existing hydro power were included in the count of California's renewable energy supplies for example, the state would almost meet its 2020 mandate to get 33% from renewables. Although the state currently gets 18% from true renewables (solar and wind, geothermal and bio), if the 14.5% it gets from hydro were included, then the total is already 32.5% from renewables.

The study was funded by the Swedish Foundation for International Cooperation in Research and Higher Education and [The Cary Institute of Ecosystem Studies](#), in upstate New York. States in the Northeast with an abundance of cold water are already a little more lenient in allowing hydroelectric power to count towards state renewable energy targets than are the states in the hot and parched West. (Most of the South lacks renewable policy). The state of Maine, one of the first to pass the original Renewable Portfolio Standards allows (30%) hydropower to count and including it gets 55% from renewable energy. Tiny, cold, wet Vermont allows hydro up to 200 MW to count towards its renewables policy, six times what California allows. According to the NOAA, both the Northeast and the Northwest will see greatly increasing precipitation events with climate change, so encouraging hydro power there makes policy sense. This study would seem to back up the wisdom of that regional variation in policy, with the finding that it is warmer water that is largely responsible for the (now much lower) greenhouse gas emissions that are estimated to come from hydro power. But since the emissions estimate itself is so much lower, this study might also influence policy in warmer regions – at least in states that have adequate water resources – if the findings by Dr. Cole and his team wind up being replicated by other researchers.

Public release date: 1-Aug-2011

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[Cary Institute of Ecosystem Studies](#)



Greenhouse gas impact of hydroelectric reservoirs downgraded

Site design and location can minimize carbon dioxide, methane emissions

An international team of scientists has amassed the largest data set to date on greenhouse gas emissions from hydroelectric reservoirs. Their analysis, published today in the online version of *Nature Geoscience*, posits that these human-made systems emit about 1/6 of the carbon dioxide and methane previously attributed to them. Prior studies based on more limited data cautioned that hydroelectric reservoirs could be a significant and large source of both carbon dioxide and methane to the atmosphere. Through an analysis of 85 globally-distributed hydroelectric reservoirs, the authors revealed that these systems emit 48 million metric tons of carbon dioxide annually, a downgrade from earlier estimates of 321 million metric tons. Further putting things in perspective, hydroelectric reservoirs are responsible for less than 16% of the total carbon dioxide and methane emissions from all types of human-made reservoirs combined.

Furnas Dam Brazil



Manso Dam Brazil

"Our analysis indicates that hydroelectric reservoirs are not major contributors to the greenhouse gas problem," comments Dr. Jonathan Cole, a limnologist at the Cary Institute of Ecosystem Studies and one of the paper's authors. "But there are some caveats. To date, only 17% of potential hydroelectric reservoir sites have been exploited, and impacts vary based on reservoir age, size, and location." Carbon dioxide and methane are two of the main greenhouse gases created by human

activities. Carbon dioxide is produced during the combustion of nearly any organic material; methane has a variety of industrial sources. Both gases are also produced naturally, particularly in wetlands and lakes. When rivers are dammed to make the reservoirs needed for hydroelectricity, flooding creates lake-like conditions that generate carbon dioxide and methane. Emissions are the highest following reservoir construction, due to decomposing vegetation and soil organic matter. As reservoirs age, emissions decline, with cold-water systems stabilizing more rapidly than their warm-water counterparts. -----.

Read the full original article here: http://www.caryinstitute.org/press_2011-08-01.html

(This will be the largest hydro project in a millennium. Wonder how long it will take for the anti-dam folks to get revved up and delay the license forever!)

Water power

State starts work on FERC license for Watana hydro project

August 3, 2011, By Tim Bradner, peninsulaclarion.com, Morris News Service-Alaska, Alaska Journal of Commerce

Alaska's state energy authority is preparing to file a preliminary license application with the U.S. Federal Energy Regulatory Commission for a 600-megawatt hydro project in Watana, on the upper Susitna River north of Anchorage, Gov. Sean Parnell announced June 25. The Alaska Energy Authority is also recruiting staff for the core project development team, the governor said. Parnell recently signed new state legislation authorizing the project as well as a \$67.5 million state appropriation for work on the preliminary FERC license application this year. The project, expected to cost \$4.8 billion, involves a 700-foot-high dam on the Susitna River that would create a 39-mile reservoir with a maximum width of two miles. It would supply about half of the expected electricity demand of the state's Southcentral and Interior Alaska communities that are connected to a power grid. Utilities in Southcentral Alaska now generate most of the power needed with natural gas supplemented by hydro power from the 120-megawatt Bradley Lake hydro project near Homer. In Interior Alaska, utilities generate power with oil and buy wholesale gas-generated power delivered over a long-distance transmission system.

The Watana project could be built and in operation by 2021, offsetting a need to burn 50 million to 70 million cubic feet of gas per day in power generation, Dan Fauske, president of the Alaska

Gasline Development Corp., told state legislators during a briefing July 25. AGDC is a state corporation working on an in-state gas line pipeline system. The state did substantial work on a Susitna River hydro project in the 1980s that was much larger than what is now contemplated, and which was shelved. That project would have involved two dams, an earth-filled dam in Watana, where the current project would be located, and a concrete dam in Devil's Canyon. The latest plan involves only the Watana dam.

(No clue what this is all about. Strange looking hydro plant! At \$20K, must not be much there!)

Over outcries, county offers option to buy hydro plant

August 6, 2011, eastoregonian.com, Samantha Tipler, East Oregonian

The Umatilla County Board of Commissioners extended to investors an option to buy the Boyd Hydroelectric Project power plant in Hermiston, over objections voiced by neighbors of the plant. The board voted unanimously Wednesday to extend to year's end the Boyd Hydro LLC option to buy the plant for \$20,000. The option would have expired this week.



(Maybe they should let this guy succeed or fall on his face!)

LAKE ELSINORE: Hydroelectric plant's backer may proceed alone

pe.com, August 6, 2011, By GENE GHIOTTO, The Press-EnterpriseWater

A backer of the plan to build a hydroelectric plant in the mountains above Lake Elsinore has asked federal regulators to allow the company to drop the Elsinore Valley Municipal Water District from the project. "Allow us to remove our co-applicant from the application ... and proceed to complete this application," Rexford J. Wait, vice president of The Nevada Hydro Co., wrote in letter to the Federal Energy Regulatory Commission. Wait contends Nevada Hydro has a right to do that under the contract with the district. Wait's letter follows the July 12 decision by commission's Office of Energy Projects to dismiss the application by Nevada Hydro and the district to build the project. The dismissal notice cited differing views on the scope of the project. The commission gave both 30 days to appeal. David Kates, project manager for Nevada Hydro, said an appeal would be filed next week. He also said the district has ended its contract with Nevada Hydro. A spokesman for the district could not be reached on Friday. But in an email last month, spokesman Greg Morrison said the district board would ask its attorneys to terminate the contract. Wait wrote that Nevada Hydro has invested more than \$26 million in the project since the effort began about 14 years ago, and that Nevada Hydro has reapplied for a preliminary permit to protect that investment.

The Lake Elsinore Advance Pumped Storage project calls for building a pumped-storage facility and dam in the forest, where water pumped from Lake Elsinore at night would be stored. Water would be released through turbines in the daytime to generate electricity during peak demand hours, then it would be transmitted over the proposed lines. In dismissing the application, the commission said the district and Nevada Hydro have different goals, with the district wanting to build the transmission lines and the pump station and Nevada Hydro just the lines. Wait pointed out to federal regulators that he expects California Public Utilities Commission to approve the transmission lines, which he said would connect the hydroelectric plant to the electric grid. "The allegation that we're only interested in the transmission lines is another piece of evidence on how disingenuous they are," Kates said of the district.



Water.

(Even the pro-dam advocates don't see it happening!)

Years after failure, Teton Dam still sparks debate

John Miller, Associated Press, seattlepi.com, August 7, 2011

Boise, Idaho (AP) — When the newly built Teton Dam failed spectacularly in 1976, Dale Swensen was spared the worst: Only the basement of the then-26-year-old farmer's rental home was flooded when billions of gallons of water came crashing down the canyon. The deluge around him killed 11 people and thousands of livestock. Despite the calamity, Swensen, now director of the Fremont-Madison Irrigation District, has become a big advocate of rebuilding what's recorded as one of America's greatest engineering failures. Just two years ago, he promoted an \$800,000 study — paid for by Idaho and the federal Bureau of Reclamation — to examine new water storage sites above the Henry's Fork of the Snake River, including a new Teton Dam. Today, however, Swensen believes the dam idea is doomed. "I'd love to have Teton Dam rebuilt. There would be numerous benefits from that project," Swensen told The Associated Press. "But boy, you've got to be able to afford it. And I just don't think we can." Idaho has myriad reasons for wanting to boost its water supply: To produce more electricity, guarantee that industry in cities can grow and that farmers can irrigate, and to help its endangered salmon spawn, swim to the Pacific Ocean and return. Last week, federal officials presented findings from the 2009 study to the Idaho Water Resource Board, the eight-member panel that governs state water policy, about what they've concluded, so far. Bureau of Reclamation managers say the Teton Dam, now projected to cost some \$550 million, is still part of the conversation, but mostly as a benchmark for other, potentially cheaper storage alternatives. "I would say, it (the Teton Dam) is not coming up as a high priority," said Robert Schattin, the Bureau of Reclamation official helping lead the Henry's Fork Basin Study. Instead, the focus over the next five months will be on seven smaller water storage proposals, including raising the Ashton Dam and Island Park Reservoir, as well as adding smaller dams to tributaries of the Teton River. Those projects that survive scrutiny may move forward to a more-detailed engineering analysis. And more than just water storage is on the table.

Schattin and others will examine how canal expansion, conservation, schemes to move water to where it's most needed, and expanded recharge of the Eastern Snake Plain Aquifer beneath southern and eastern Idaho can play a bigger role in preserving the state's most precious resource. The Lake Erie-size aquifer, depleted by overuse and changing agricultural practices since the 1950s, is critical to Idaho's economic future, with \$10 billion in goods and services generated by the region it flows beneath. Schattin expects any proposals from the Henry's Fork Basin study this December will include a combination of storage, conservation, recharge and market-based incentives. Managing Idaho's water resources "really needs to be in a broader package," he said. "It's not just storage." For their part, Idaho officials say it's premature to abandon discussion of the Teton Dam, or any other storage project. Gov. C.L. "Butch" Otter has been a vocal fan of storage projects since his 2006 election. And just last week, the Water Resource Board approved spending \$2 million to study a dam proposal on the Weiser River, which runs more than 100 miles from the Payette National Forest in Adams County to the Snake River in western Idaho.

Brian Patton, the Idaho Department of Water Resources planning bureau chief, said building a dam is a decades-long endeavor, one that will outlast recession-driven budgets that have defined Idaho's priorities since 2008. That, coupled with multi-year droughts of the future, could provide new impetus for big construction projects like those of the 1950s, 1960s and 1970s.

"Even looking at some of the reservoirs that were built in the 1970s, the planning for those started in the '30s and '40s," Patton said. "So there's a lot of time in there for priorities to shift and for budgets to turn around. The upshot is, it's way too early to tell if the state should back away from or jump in and build new storage." Environmentalists at American Rivers and Trout Unlimited were alarmed when proponents of the 2009 study left the Teton Dam's resurrection in the mix. They're pleased that conservation is part of discussion, but suspect that state and federal managers favor storage projects over other, less-ambitious measures, said Kim Trotter, Trout Unlimited's Idaho Water Project director in Driggs. For example, among the seven storage projects the Bureau of Reclamation will scrutinize through December is a man-made lake a mile above sea level in Fremont County that would be filled with water from a creek that's prime spawning ground for Yellowstone cutthroat trout. Tapping the creek could push a fish already dubbed a "species of special concern" closer to Endangered Species Act protection, Trotter said. "This is now less about rebuilding the exact same Teton Dam, and more about building some other storage facility that would have the same deleterious effect," she said, adding measures like modernizing irrigation systems could save enough water to make new storage unnecessary. "And it would be a fraction of the cost," she said. Studies like the Bureau of Reclamation's may spur debate over storage, said irrigation district manager Swensen, but projected costs stretching into the hundreds of millions, coupled with inevitable opposition from environmentalists, make a new era of Idaho dam building unlikely. "I guess you have to be a realist, and I think that's what the realities are," Swensen said. "My personal opinion is, when the alternatives all get hashed out and studied, putting water into the Eastern Snake Plain Aquifer is going to be the cheapest alternative."



Environment

(This is no surprise – nothing will ever satisfy Judge Redden. And, I just learned a new word – reservoirized!)

Judge beaches feds' Columbia River salmon plan

blog.seattlepi.com, 8/2/11

A federal judge in Portland ruled Tuesday that an Obama administration plan is illegal because it fails to include measures assuring recovery of dam-damaged salmon runs on the Columbia and Snake rivers. U.S. District Judge James Redden applied a legal lash to federal agencies managing the Northwest's major river system, citing "the history of the Federal Defendant's lack of, or at best, marginal compliance" with requirements of the Endangered Species Act. Redden directed that federal agencies, specifically the Bonneville Power Administration and the U.S. Army Corps of Engineers, provide the court a new salmon recovery plan by January of 2014. "Thus far, Federal Defendants have not implemented the habitat actions necessary to avoid jeopardy," Redden wrote. "More importantly, there is no indication that they will be able to identify and implement the actions necessary to catch up." The ruling may put on the table such controversial measures as breaching dams on the Snake River, or lowering reservoir levels during periods when young salmon migrate downstream.

"The decision sends the exhaustive plan back to federal agencies for a redo for the third time, with a focus on habitat improvement after 2013," the Oregonian reported. Redden ordered that federal dams continue their annual "fish flush," spilling water during runoff to speed young salmon on their migration to the Pacific Ocean. The Bonneville Power Administration has campaigned against the spill on grounds that it loses money from power sales. The Columbia-Snake system was once home to as many as 16 million salmon, a fish population now reduced by more than 80 percent. Grand Coulee and other high dams cut off hundreds of miles of upstream spawning habitat, while low dams hinder downstream migration of young salmon. Just one healthy wild salmon population remains in the Northwest's master river system: the fall chinook run north of

Richland. The Hanford Reach is the only non-reservoirized stretch of Columbia River between Bonneville Dam and the Canadian border. Salmon swimming upstream on the Snake River travel nearly 900 miles and must pass through eight dams before reaching historic Redfish Lake in south-central Idaho. One year, a solitary salmon – nicknamed “Lonesome Larry” – made it to the weir at Redfish Lake. Salmon supporters lit votive candles and posted signs with such slogans as “Spawn Until You Drop” and “Spawn Your Brains Out.” The population has inched back up, but Snake River salmon have never recovered from four dams built by the U.S. Army Corps of Engineers during the 1970s. Barging young salmon around the dams has failed to restore fish populations.

Washington and Idaho politicians, irrigation interests and power producers have defended federal plans, saying the government has spent billions to keep healthy salmon populations in the river. President George W. Bush was a strong defender of Snake River dams, using Ice Harbor Dam as a backdrop for one speech defending recovery efforts. It was Bush who declared – in a much-quoted Bushism - “The man and the fish can coexist.” And, in a Spokane speech, Bush referred to the Snake River as “the river on the Snake.” The Obama administration has tinkered with, but not fundamentally changed, fish plans from its predecessor. Its latest plan was challenged by the state of Oregon, the Nez Perce and Spokane Indians, plus sport and commercial fishery interests and environmental groups. Applauding Tuesday’s ruling, Zeke Grader, executive director of the Pacific Coast Federation of Fishermen’s Associations, said: “Now is the time for the Obama administration to walk the talk on real salmon solutions. As this ruling highlights, the federal government has spent nearly 20 years spending enormous sums of money foolishly by doing all the wrong stuff.” It is, added Grader, time for “facing the problem squarely, including potential removal of four fish-killing dams on the lower Snake River.” Pat Ford, executive director of Save Our Wild Salmon, said it’s time for the Northwest’s political leaders to intervene after federal agencies have struck out on recovery plans. “In the real world,” Ford said, “the possibility to wed true salmon recovery, clean energy transition and job growth can only be seized by active response to the verdict, not the passive response Bonneville and the Corps of Engineers will seek.”

(Can't make anyone happy!)

PGE's water mixing and fish passage facility at Round Butte Dam in hot water with fishermen

oregonlive.com, August 06, 2011, By Special to The Oregonian



A massive water mixing and fish passage facility in Central Oregon is again drawing complaints from Deschutes River fishermen and fish groups who claim the project is contributing to harmful high temperatures in the lower 100 miles of one of Oregon's premier rivers. But data Friday showed the Pelton Round Butte hydro project was within state limits for the temperature of its water releases, said Don Ratliff, senior biologist for Portland General Electric. PGE and the Confederated Tribes of Warm Springs operate the three-dam complex and one-year-old \$110 million water mixing facility east of Madras. Ratliff said operators were ready to release colder water into the Deschutes if data showed it was outside its permit. Although that wasn't the case, he said, there's a good chance of that happening in a week or two. "Right now is the peak of the warm water temperatures," Ratliff said. "If the weather gets hotter there's a good chance we'll change the water mix in mid-August."

That's still not sitting well with fishing guides on the lower river and fishing groups which monitor river and fish health. "Why are they repeating the mistakes of last year? It just doesn't make sense," said Brad Staples, who operates Western Fishing Adventures. PGE built the one-of-a-

kind mixing tower and fish passage facility as part of relicensing for the power-generating dams and after splitting their ownership with the Warm Springs tribe. The 273-foot underwater tower mixes warm water from the top of Lake Billy Chinook with cold water at the bottom, adjusting the mixture by computer at the first of each month. The mixing was designed to help re-establish runs of spring Chinook, steelhead and sockeye into the upper Deschutes, Metolius and Crooked rivers and their many tributaries in central Oregon. The mixing tower started operating in April 2010 and immediately caused concern in the lower 100 miles of the river because trout and steelhead fishermen were unaware that it would lead to warmer temperatures in the spring and early summer and lower temperatures in the late summer and fall. That was the opposite of what had been occurring since the dams started operating in 1964. PGE made adjustments last August, increasing the percentage of cold water released and called it a "transition" year as it learned to operate the tower and work with its computer program and controls. This spring PGE was pleased when 435,000 sockeye, spring Chinook and steelhead smolts were pulled downriver through the tower and fish passage facility. They expect a small percent of those to return in two to four years. But fishermen in the lower river again grew concerned when they recorded afternoon water temperatures in the upper 60s in June and 70 degrees in late July and last week. The higher temperatures affects fishing success, puts additional stress on steelhead, encourages competing fish like whitefish and suckers, and changes the biology of the river. They also worry that the lower Deschutes is being changed for small returns of salmon and steelhead to the upper river. "We're off three to four degrees, which is a big difference," said Staples, who starts guiding on the Deschutes in June and doesn't leave until November. "It's obvious that something is wrong." Staples and others maintain that every other river in the Northwest is running higher and colder this summer because of deep snowpack and late spring rain. The Columbia River at The Dalles and John Day dams is 67-68 degrees, which is 2-3 degrees cooler than normal – and less than the Deschutes, according to the Columbia River Fish Passage Center.

But Ratliff counters with historic water temperature data reaching back decades, showing Deschutes water temperatures of 70 degrees is not unusual for late July and August afternoons. He also says that 80 percent of the Deschutes originates in springs, which is cooler than surface runoff feeding other streams. "I don't want to discount their worries, but I think they're pointing the finger in the wrong place," Ratliff said of the guides. "The fish are behaving differently at the mouth but we think it has more to do with the Columbia. I'm not advocating 70 degree temperatures, but the daily average is 67 degrees and it's not dangerous."

Tom Larimer of Hood River, who has been guiding flyfishers on the Deschutes for 11 years, said there has been a dramatic effect on fishing the past two summers and like many others believes PGE's computer models for setting water temperatures are incorrect. "But I'm more worried about how this is going to change the river," Larimer said. "Anytime man starts playing with the ecosystem it's usually not for the better. The fate of this river is running on a computer program." Bill Bakke, executive director of the Native Fish Society, considers PGE "very progressive" for incorporating science into its dam operating permits, but is also not sure if he entirely trusts computer models to make water quality decisions. "I'm disturbed in one sense, but I'm also encouraged because PGE is open to making adjustments," Bakke said. "There's going to be more discussion." The Oregon Department of Environmental Quality, which oversees the water release permit, says while the higher temperatures may have shifted to earlier in the year "PGE is doing what we've asked them to meet in its permit," said Bonne Lamb, a natural resources specialist in the agency's Bend office. "We're going to continue to evaluate this, but I think it's a shift that we all need to get used to on the river," Lamb said.



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8/19/2011



Some Dam – Hydro News™

And Other Stuff



Quote of Note: *"Suppose you were an idiot. And suppose you were a member of Congress.... But then I repeat myself."* - Mark Twain

"Good wine is a necessity of life." - Thomas Jefferson

Ron's wine pick of the week: Campus Oaks Old Vine Zinfandel 2007

"No nation was ever drunk when wine was cheap." - Thomas Jefferson

Other Stuff.

(It's the hydro stupid! Without hydro, there would be no headline. The article has a photo of a wind farm so I didn't include it.)

Renewable Energy Consumption Passes Nuclear

by Steve Duda, August 9th, 2011, earthtechling.com

[Editor's Note: This story has been updated to reflect consumption patterns as detailed by the EIA.]

Renewable energy consumption in the United States recently exceeded current and historical consumption levels for nuclear energy, a government study reports. According to the U.S. Energy Information Administration, during the first quarter of this year a combination of nuclear outages related to plants shutting down for refueling and the start of the high water season for hydropower generation caused the shift in consumption. Seasonal variations in renewable energy, said the EIA, are dominated by the annual cycle of water availability for hydroelectric power production. Hydropower constitutes a significant yet highly variable portion of total renewable energy consumption, accounting for 31% of renewable energy consumption in 2010." Joining this is a multi-year upward trend in renewable consumption driven by increasing consumption of biofuels and wind capacity additions. In the context of this study, renewable energy consumption is defined beyond electric power generation from hydro, wind, solar, and geothermal sources. Sources including biofuels for transportation (such as ethanol and biodiesel) and biomass (such as wood and wood wastes) for space heating and industrial steam production as well as for electric power generation are counted as renewable resources. With regards to data from the EIA, the various modes of energy consumption are put into common units (British thermal units, or Btu) for comparison purposes, with the end result of information representing the amount of fossil fuel consumption that might be displaced by the renewable generation. It is believed this approach produces a value greater than the result of a simple kilowatt-hour-to-Btu conversion. It should be noted as well, the EIA mentioned, that with regards to the electricity-only portion of primary energy data, other energy use such as transportation, heating, or industrial steam

production is excluded. When this is the case, renewable electricity generation—a subset of



renewable energy—remains slightly below nuclear generation.

Dams:

(A lot of fuss over such a little dam. Hope the cost is worth it. You'd think something else would be more important! Seems like a lot of money for a jackhammer and backhoe job! How come a similar dam removal in New England on a dam almost 3 times longer is estimated to cost about 3/4 as much?)

Harpeth River's only dam slated for demolition

Project in Franklin seen as big step in reviving river

tennessean.com, Aug. 9, 2011, Written by, Kevin Walters | The Tennessean

Franklin, TN — For the first time since 1963, the Harpeth River will flow freely along its 125-mile path through five counties, allowing native fish to thrive while fishermen and canoers will have more reason to seek out its waters. The only thing standing in the way is the Harpeth River's lone dam. Built by the city of Franklin nearly 50 years ago, the concrete and steel structure backs up the river to help supply drinking water to the city. But the 6-foot-tall, 63-foot-long dam divides the river, preventing fish from swimming upstream to get more food and limiting species, stagnating water downstream and posing a potential danger to unassuming paddlers who might tumble over its top. Now, a plan using approximately \$871,000 in federal, state and city monies will reconnect the river. It's a single but important step in resuscitating a river that's as blessed with natural beauty as it is beset by years of manmade pollution along its course from its Rutherford County headwaters to its confluence with the Cumberland in Cheatham County. "It's a biologist's dream to basically remove a structure that affects wildlife," said Dorie Bolze, executive director of the Harpeth River Watershed Association. "This is a big deal."



Few rivers in state have no dams

Removal of the dam, slated for next year, will allow the Harpeth to join only a handful of other Tennessee rivers that do not have dams. "Dams can often have a profound impact on the fisheries and water quality of a river by blocking fish passage and causing stagnant waters," said Meg Lockhart, Tennessee Department of Environment and Conservation spokeswoman. "In smaller streams, dams can cut off water to downstream neighbors," she said. "Therefore, TDEC will look for an opportunity to remove dams that are no longer needed." The Franklin dam is known as a "diversion weir," or lowhead dam that impounds a portion of the river. Water taken from the river is kept in a reservoir behind the city's water treatment plant off Lewisburg Pike before being treated for use. Franklin buys most of its water from the Harpeth Valley Utilities District, which pumps water south from the Cumberland River, but uses the Harpeth to supplement the supply. While the Franklin diversion weir is one of only three such dams in Tennessee, it is the first one Environment and Conservation officials have directed to be removed. It is also the only removal in which state environmental regulators are actively participating. Typically, dam removal is done voluntarily, but state officials specified Franklin's dam be taken down as part of the city's state water withdrawal permit, if studies showed it was feasible. Bolze projects the river's fish population — as well as a greater diversity of fish — will be increased because fish will be able to swim the length of the river. That potentially will attract more fishermen to its shores. "When you have dams, you change the biological makeup of rivers," Bolze said. "You change them into lakes. Lakes typically don't have variety."

Bargain for Franklin

While the dam belongs to the city of Franklin, a new financial arrangement means the city will not have to foot the bill for all of the work. Franklin will pay only around \$275,781 of the project's \$871,000 cost. A U.S. Fish and Wildlife Service grant will provide \$350,000, and the state will provide labor and resources amounting to more than \$189,000. "This was a collaborative partnership, and TDEC appreciates the efforts the city and the Harpeth River Watershed Association have put forth to make these improvements, which will be beneficial to the overall health of the Harpeth River," Environment and Conservation Deputy Commissioner Shari Meghreblian said in a statement. Work on the project has created more cooperation between the city and HRWA. In years past, discussions about the river and dam sometimes were contentious. Even though the dam will come down, Franklin will still be able to draw water from the Harpeth to use for its roughly 17,000 water customers. "We still want them to be able to withdraw water," Bolze said. All the final costs and agreements between the city, HRWA and the state still must be addressed. However, it is likely they will be approved in the fall, clearing the way for demolition to begin possibly as early as next summer. Though there was friction about the dam's removal in the past, Franklin officials today are happy about the partnership and the city's share of the cost. "This is a way to (improve the river system) at basically the cost to remove the dam," said Eric Stuckey, Franklin city administrator. "We get all sorts of other community benefits, ecological benefits. It's a more sustainable solution, long term."

'A hidden gem'

Demolishing the dam is only one part of the project. Crews must create deep pools in the river from which Franklin can draw its water. Logs will be installed in certain places to help stabilize riverbanks. With no dam, kayakers and boat paddlers will have better access to areas upstream and won't have to risk taking a tumble over the dam. "Generally, lowhead dams do present quite a bit of risk to paddlers and swimmers," said Trent Ganstine, an avid paddler and president of the Tennessee Scenic Rivers Association. "They're one of the most dangerous of any type of waterway." Carrie Drury, owner of Franklin Canoe and Kayak Co., sees the dam's removal as key to Franklin residents finally appreciating a river that once was used as a dumping ground for household refuse, trash and garbage. "It's just right here in our backyard," Drury said. "It's kind of a hidden gem."

(This should send chills up the spine of everyone associated with dams. The threat is real!)

Dams disaster and terrorist attacks

By: Anna Doro-on; Aug. 12, 2011, environmental-expert.com, Courtesy of IWA Publishing

Dam destruction is one of the greatest man-made disasters that can instantly generate casualties and will carry out disastrous consequences. Public are more concerned on cyber-attack, bioterrorism, and chemical terrorism, however, these threats do not create long term economic distress. Al Qaeda priorities are not to destroy national symbols, but to bring the United States (U.S.) economy to its knees (T&A, 2004). Biological terrorism is least likely and is only a temporary threat, and yet gets the most media play (T&A, 2004). Amid all the dire warnings and alarming statistics that the subject: so far, there has been no recorded instance of a terrorist cyber-attack on U.S. public facilities, transportation systems, nuclear power plants, power grids, or other key components of the national infrastructure (Weimann, 2004). Cyber-attacks are common, but they have not been conducted by terrorists and they have not sought to inflict the kind of damage that would qualify them as cyber-terrorism (Weimann, 2004). According to Weimann (2004), when the U.S. troops recovered Al Qaeda laptops in Afghanistan, officials were surprised to find its members more technologically adept, than previously believed. They discovered structural and engineering software, electronic models of a dam, and information on computerized water systems, nuclear power plants, and U.S. and European stadiums (Weimann, 2004).



Hydro:

(Hydro history in Utah. I wonder what that gold would be worth today.)

Olmsted power plant on Provo river a working piece of history

Reva Bowen - Daily Herald, heraldextra.com | August 7, 2011

Largely hidden away beneath stately shade trees in a spot near the mouth of Provo Canyon lies a gem of history -- the Olmsted hydroelectric power plant and grounds. Some locals may recognize the name as the site -- for a number of years -- of the Timpanogos Storytelling Festival, before Orem city built Mt. Timpanogos Park in Provo Canyon to serve as the home of the annual event. But Wayne Barnes, a hydro foreman for Rocky Mountain Power who has worked at Olmsted for the past 35 years, said he encountered many festival participants who told him that although they had lived in the community all of their lives, "they had no idea what was down in here." What Olmsted has in the quiet, sequestered setting is a plant that first began operating in 1904 and is still functioning. The plant still uses some of the original equipment to produce electricity that is added to Rocky Mountain Power's system. When the rivers are full and everything is running at peak performance, Barnes said, the plant produces 12 megawatts per hour, enough to power about 3,000 homes.



Circa 1904

On the grounds of the property are a number of historic buildings that date from the early 1900s, when Olmsted was on the cutting edge of the development of a new technology -- alternating current generation and transmission. There are two other power plants from the same era as the Olmsted still operating in Utah, Barnes said, and both are in Big Cottonwood Canyon. One is called Granite (1896), and the other is Stairs (1895). The plant got its name from Fay Devaux (Fred) Olmsted, who worked with two brothers from the east coast to develop the plant. As Barnes tells the story, L.L. Nunn and his brother, Paul, a mathematics teacher, went to Colorado to make a fortune in the mining business in the 1800s. The mines needed energy in order to separate the valuable metals from the impurities during the mining process. Trees were cut and burned for steam to drive turbines, but as the trees were harvested further and further out from the plant, that source of energy became ineffective, as did hauling in coal. L.L. Nunn foresaw the potential value of streams in the production of electricity, but there was a catch. At the time, direct current was the only electrical power system in use, and it could not be safely used to take the necessary amount of power the required distances from the streams to the mills. Barnes said the Nunn brothers contacted George Westinghouse to enlist his help in developing the technology to take falling water and use it for hydro-powered generators, transformers, switches and whatever else was needed for the safer alternating current. At a meeting with Westinghouse, the brothers said they were serious about getting the technology, and offered him a pouch of gold worth \$50,000. Other published historical accounts have the value of the gold as \$100,000. (Barnes said that makes the story twice as good.) Regardless, the money made it all happen. The Nunnns later took their success from the Colorado mines to Utah, and developed the plant in Provo Canyon, which transmitted power to mines in the Eureka District. Olmsted, who was an assistant to Paul Nunn, died of tuberculosis before the power plant was completed, and the Nunnns named it for him. The Olmsted facility not only had a power plant, but was also an educational facility. Workers attended classes part time to learn more about the new electrical technology and other subjects, including history, English, German, algebra, geometry, physics, drawing and public speaking. There were offices, a dormitory building, a laboratory and a personal residence for the Nunnns. Barnes and his family now reside in what was the Nunn residence. Although some buildings have been torn down over the years, there are quite a few remaining, and the Olmsted has been a draw as a setting for the movie and television industries. The attraction can probably

be attributed to the architecture and isolation that make Olmsted unique, while the facility still maintains a definite proximity to town.

Barnes said the movie "Halloween 5" was six weeks in production at Olmsted. He also remembers "The Stand" miniseries filming there, along with "Outlaw Trail," "Hollywood Detective" on the A & E Channel and commercials. Rocky Mountain Power spokesman David Eskelsen said the Olmsted is likely to be a "centerpiece" in the 100-year anniversary celebration for the company in 2012. The parent company, Utah Power & Light, was incorporated in 1912. The Telluride Power Company, which owned the Olmsted, was one of the companies purchased by Utah Power & Light. From the turn of the century to the 1920s, Eskelsen said, small hydroelectric plants like the Olmsted formed the backbone of the early power system, and many are still operating dependably after 100 years.

(We know that we have reached the point of ridiculous when it takes longer to get the permits to build this project than it will take to actually build it! Too bad it didn't get built the first time around.)

Alaska Governor Authorizes \$4.5 Billion Dam Project

circleofblue.org, 10 August 2011

Because of old age and a desire to restore fisheries, in many parts of the United States old dams are being removed. But in Alaska, the state legislature and the governor want to build what would be one of the nation's tallest hydroelectric facilities. If built, the 200-meter dam on the Susitna River would be the nation's fifth tallest, completed by 2023. At a press conference in Anchorage on July 25, Alaska Governor Sean Parnell signed a ceremonial copy of a bill to authorize a 200-meter (700-feet) rockfill dam on the currently dam-free Susitna River. Parnell signed the official bill on July 13, after it had passed the state legislature in June, the Anchorage Daily News reports. Senate Bill 42 gives the Alaska Energy Authority (AEA), a public corporation owned by the state, the power to issue bonds and enter into contracts to build the dam, which is scheduled to be completed by 2023 and is estimated to cost \$US 4.5 billion — a figure that does not include some of the new transmission lines that would be built, according to Karsten Rodvik, AEA's external affairs manager.

The Susitna Dam, planned for a site halfway between Anchorage and Fairbanks, will create a storage reservoir 63 kilometers (39 miles) long and three kilometers (two miles) wide at its broadest. If completed, the dam would be the tallest built in the U.S. since the 218-kilometer (717-foot) Dworshak Dam in Idaho, which began construction in 1966 during the height of the American dam-building era. Plugging the Susitna River would also destroy nine miles of spawning habitat for the Arctic grayling fish, and change river flows and temperatures, which would help some species and hurt others, according to a preliminary evaluation prepared by the AEA in November 2010. Salmon would not be affected because they do not spawn above the dam site. The state flirted with the Susitna project starting in the 1970s, when the U.S. Army Corps of Engineers first drew up a proposal. Construction was provisionally approved but then cancelled in 1986 due to an economic downturn and cheaper natural gas supplies flowing from new production in the Cook Inlet. Alaska's lawmakers have revived the project partly because of a law — passed last year — that requires the state to get half of its electricity from renewable and alternative energy sources by 2025. According to the U.S. Energy Information Administration (EIA), 20 percent of Alaska's 6.7 million megawatt-hours generated in 2009 came from renewable sources, with 99 percent of those renewables classified as hydropower. The Susitna Dam will add an estimated 2.6 million megawatt-hours of generation and will serve half the current energy demand of the Railbelt, the most densely populated area of the state. At 15.1 cents per kilowatt-hour, the average cost of electricity in Alaska is among the highest in the nation. This is in stark contrast to 9.8 cents per kilowatt-hour, the nation's average electricity cost, according to the EIA. The AEA's preliminary evaluation pegs the cost of Susitna electricity to ratepayers at only six cents per kilowatt-hour, but that figure assumes the state will pay for half of the project's \$US 4.5 billion price tag. AEA's spokesman said that money matters have not yet been settled. "We do not know the nature or level of state financing at this point," Rodvik told Circle of Blue. "We're not even in the formal FERC process." FERC is the Federal Energy Regulatory Commission, the

agency that oversees hydropower development. The AEA will begin the permitting process this fall when it applies to FERC for a license. The permitting phase is expected to take six years, followed by five years of construction.

(This is not an important or large project but it says where we are. If this small project meets this much opposition, what is next? There is opposition to anything that doesn't look like a whirly bird. All a permit gives is the right to study, not to build. The inmates are really running the asylum.)

Hydroelectric project on North Fork faces diverse opposition

August 10, 2011, By Dan Catchpole, snovalleystar.com

Thom Fischer wants to tap into the Snoqualmie River's power. He is the president of Tollhouse Energy, which develops hydroelectric projects. The Bellingham-based company wants to build the Black Canyon hydroelectric project on the river's North Fork, near Ernie's Grove. But conservation groups and the Snoqualmie Tribe have asked the Federal Energy Regulatory Commission to deny the company's application for a preliminary permit. The company needs the permit to begin studying the project in detail. Several other parties have filed with the regulatory commission to weigh in on the application. Conservationists and the tribe say the project would hurt the local environment, is unnecessary and would be sited on protected land. Fischer said he is confident Tollhouse Energy can work with Black Canyon's critics to find middle ground. "What they fear is the unknown. I think they'll want to work with us once they understand our position," he said. The Black Canyon project will affect the local environment, but the extent of any negative impact won't be clear until studies are finished, Fischer said. "You don't really know all the changes until you study it," he said.

Tollhouse Energy can begin a battery of studies that will take about three years to finish if its preliminary permit application is approved by the regulatory commission. It applied in March. The commission isn't required to take action in any particular amount of time, regulatory commission spokesman Craig Cano said. But a review of pending preliminary permits on the commission's website indicates that most applications are denied or approved within a few months.

Not a traditional dam

Black Canyon would not include a traditional dam, but would require a structure built across the river. The structure would have an inflatable dam for when water levels are low. "We're not looking to build big dams like in the past," Fischer said. It would be a run-of-river project, meaning water would be diverted from the main flow, run through turbines to generate energy and then be returned to the stream downriver. The hydroelectric plant operated at Snoqualmie Falls by Puget Sound Energy is also run-of-river. Its water intake does slightly raise the river's level, but it is entirely below water. The project's underground pipe would run for more than a mile to a powerhouse northeast of Ernie's Grove. To access the powerhouse, a logging road would have to be extended by about three-quarters of a mile. To connect to the power grid, a 4.2-mile transmission line would have to be built. Black Canyon would produce about 10.2 megawatts of power annually. The project is necessary to keep up with the area's growing demand, Fischer said. Tollhouse Energy is happy to work with groups — even critics — that want to be involved in the project, he said.

Critics question cost and benefit

Plenty of groups and property owners want to weigh in on the permit application for a variety of reasons. The main opposition to the project comes from two groups of conservation and outdoor recreation organizations, and the Snoqualmie Tribe. Critics say the project is unnecessary and offers only limited benefits for high environmental costs. Much of the state's growing energy needs could be met by conservation, according to Rich Bowers, the regional coordinator for the Hydropower Reform Coalition, which asked the regulatory commission to deny Tollhouse Energy's application. More energy could be drawn from existing dams not being used for hydroelectric generation. A 2007 Washington State Resource Assessment Report found that nearly 250 dams either do not produce electricity or are not operating at peak production. Using those dams could create as much as 2,500 megawatts, according to the report.

Washington state already gets more than 60 percent of its energy from hydroelectric projects. "Hydro has over 100 years of impact, so we know what those are," Bowers said. Hydroelectric facilities disrupt the local ecosystem and the river's ecosystem. **The Hydropower Reform Coalition would rather see no new projects built on rivers.** The proposed project area has been recommended for federal protection as a Wild and Scenic River by the U.S. Forest Service, and King County owns the development rights to the land. Hancock Timber still owns the logging rights for much of the area. **Several of the groups fighting the Black Canyon project represent outdoor recreation users. The stretch of river below the proposed intake site is popular with experienced kayakers.** Diverting water could dry up the run, the groups contend. Fischer, who worked as a river rafting guide for several years, said diverting water could also make the run manageable during the spring and early summer when the water is too high. The Snoqualmie Tribe asked the regulatory commission to deny the permit, because it could threaten genetic diversity among the Snoqualmie River's trout population and could contribute to the river's overheating. The North Fork is home to a trout that are genetically different from the steelhead trout found below Snoqualmie Falls, according to a 2010 report commissioned by Puget Sound Energy. The fish in the North Fork offer a genetic reserve for the downstream trout, the tribe said in its motion to intervene.

The upriver fish can also boost spawning populations downstream in low years, the tribe said. The water in the North Fork cools down as it runs through Black Canyon. Potentially decreasing the amount of cool water entering the river could raise the Snoqualmie River's temperature, which could hurt its ecosystem and fish populations, according to the tribe. North Bend asked the regulatory commission to deny Tollhouse Energy's application, because it would affect the city's access to drinking water. The project "is of questionable benefit to any ratepayer, and in fact would create an impact to the North Bend water customers through an increase in water rates," said Ron Garrow, the city's director of Public Works, in North Bend's letter to the regulatory commission. Snoqualmie also filed to weigh in on the project for two reasons: flooding and drinking water. The city has no opinion on the project, Mayor Matt Larson said. But it wants the regulatory commission to know that it has flooding issues and 10 percent to 20 percent of its drinking water comes from Canyon Spring, near the project area.

Meeting increased demand

The issue remains that Washington residents are expected to need more energy in the future, and it has to come from somewhere or lights have to go out. **Hydroelectricity is an excellent carbon-free source of energy, said Todd Myers, director of environment research at the Washington Policy Center.** While the Black Canyon project is small, it is a start, Myers said. Other alternatives, such as wind turbines and solar panels, require long transmission lines, just as Black Canyon would, he said. **But the impacts of transmission lines are more aesthetic than environmental,** Myers said. "Too often we make energy decisions based on political concerns," he said.

(In life there are many mysteries and this is a new one. The Seneca Tribe issued a press release that wasn't too clear that says the FERC issued a preliminary permit for new capacity at a location upstream of a dam. How do you do that? I guess they actually are referring to a 2nd pumped storage project. Should be interesting!)

Nation Granted Permit

August 12, 2011, by Sharon Turano (sturano@post-journal.com), The Post-Journal, post-journal.com

A permit has been given to the Seneca Nation of Indians by the Federal Energy Regulatory Commission to spend three years studying the feasibility of developing unused power at the Seneca Hydroelectric Project at the Kinzua Dam near Warren. **The permit does not "encumber" FirstEnergy Corp., which operates the Seneca Pumped Storage Project at the dam, from also studying the matter if it so chooses, reports FERC spokeswoman Celeste Miller.** She said the permit gives the nation priority to study developing the unused power over a third party, if one were to come along. **FirstEnergy's license to operate the pumped storage project at the dam is up**

for relicensing, with the nation also pursuing the endeavor. FirstEnergy Corp.'s license expires in November 2015. It is a competing applicant with the nation to operate the project. "This is a positive first step in what will be a lengthy process that started last November in the Seneca Nation's determined effort to win back the Kinzua Dam, the Allegany watershed and our flooded ancestral lands and use them for the benefit of our bi-state region," said Seneca Nation President Robert Odawi Porter.

The Army Corps of Engineers built the Kinzua Dam between 1960 and 1965 to provide flood control and pollution flushing for Pennsylvania, flooding 10,000 acres of Seneca land and displacing Senecas and graves. The nation applied to FERC to operate the pumped storage project last November. It generates 450 megawatts of electricity. Nation officials report the hydropower project uses Seneca land and water. "The nation seeks to utilize the dam at its highest energy potential without further effect on the environment," report nation officials, who said they would be "the best licensee because of the nation's commitment to healing from the taking of its lands and the nation's regional effort to empower itself and its neighbors to spread economic opportunities over two states and scores of communities that can benefit from it." The nation is required to provide a progress report to FERC every six months. "Regaining our rights to our land and water is something we'll work tirelessly for in the next five years," said the nation's Kinzua Dam Relicensing Commission.

(This is good news for the hydro industry)

The Next Generation of Hydropower Engineers and Scientists

August 11, 2011, energy.gov

The fellowship program (See this link for description of program: <http://www.hydrofoundation.org/fellowshipOverview.html>) is currently providing up to two years of financial assistance to 23 graduate students, enabling the fellows to research hydropower technology topics including hydroelectric turbine efficiency improvements and environmental mitigation techniques.



"The Fellowship Program is key to providing new leaders, with fresh ideas, to the hydropower industry -- which is expected to lose up to 40% of its workers to retirement in the next five years," says Deborah Linke, Hydro Research Foundation Program Director. Each of the fellows is also paired with a mentor to gain real-world knowledge of the hydropower industry. The selection process is rigorous; each of the 23 fellows is already making important contributions to advance the nation's clean energy economy. Here are three of them:

- Lisa Dilley, a doctoral candidate at Washington State University, is developing an optimization model for using pumped storage hydropower as a multi-purpose water resource. Dilley will demonstrate the regional economic potential for the optimization model's development using the Columbia River as a case study.
- Garrett Monson, a master's degree candidate at University of Minnesota, is developing structures to help aerate the waters around weirs and dams. Increased aeration leads to higher levels of dissolved oxygen and a healthier water stream.
- Sue Nee Tan, a doctoral candidate at Cornell University, is putting together a portfolio of systems analysis methods to examine how to use hydropower resources to complement the increasing amount of electricity coming onto the grid from variable renewable energy sources like wind and solar.

Visit the Hydro Research Foundation's website for a complete list of fellows and their work.

Since the 1880s, hydropower has been a major source of renewable and reliable energy for the United States. In 2010, hydropower accounted for 6% of total U.S. electricity generation and 60% of generation from renewables. For more information on how the Office of Energy Efficiency and Renewable Energy works to accelerate the development and deployment of hydropower technologies, visit the Wind and Water Power Program website.



Water.

(What is going on here – common sense in California? Is that an oxymoron? No offense to all my CA Friends who have impeccable common sense.)

Another View: Hetch Hetchy efficiently sends drinking water to 2.5 million

By Ed Harrington, Aug. 7, 2011, sacbee.com

Re "Imagine a Yosemite with Hetch Hetchy open to all again" (Editorial notebook, Aug. 1):

Any discussion about the Hetch Hetchy Regional Water System must begin with a simple fact – this is an important regional system that provides drinking water to more than 2.5 million residents and businesses in San Francisco, San Mateo, northern Santa Clara and southern Alameda counties. This same system also efficiently uses gravity to transport water, and creates 1.6 billion kilowatt-hours of clean, greenhouse gas-free hydroelectric power. Commentaries, like The Bee's editorial notebook, opine on ideals but shortchange the far-reaching financial and environmental consequences of dismantling one of the cleanest and most efficient water and power systems in the world. Hetch Hetchy Reservoir stores about 117 billion gallons of water. Relocating this amount of water storage carries significant environmental impact. In fact, every feasible proposal by advocates calls for relocating this storage by flooding other valleys and ecosystems. Combined with the lost hydroelectric energy, destruction and rebuilding of large infrastructure, reliance on energy intensive pumping and filtration, the removal of O'Shaughnessy Dam appears to be a step in the wrong direction of improving environmental sustainability.

Then there is the issue of costs. According to the California Department of Water Resources, the upfront costs to re-engineer the Hetch Hetchy Regional Water System will be up to \$10 billion. Advocates have repeatedly stated that "state, federal and private resources will need to be raised to restore the valley and cover the cost of retrofitting San Francisco's water delivery system to accommodate the transfer of storage." With alarming deficits on every governmental level, saying "state and federal resources" is simply code for the California ratepayers and taxpayers who will be asked to foot the \$10 billion bill. Today the Hetch Hetchy Regional Water System plays an important role in water delivery for the state of California. It is a source of water for millions of people, operates with a small environmental footprint and is a source of clean hydroelectric power. Given the critical water supply issues facing California and the need for more water storage due to climate change, getting rid of a fully financed, built and efficient water system seems like one of the last ideas anyone should be considering.



Environment.

(They're zeroing in again on the dams in the NW for removal. The only way that will happen is if someone running for office thinks it will make a difference in an election. If you would include all the articles on this subject, the Newsletter would be 100 pages. It's clear that there is a sense of

opportunity here to get the dams removed. A little caustic too. I guess the editorial uses the word baloney because it's not good meat. Personally, I prefer pastrami!)

Our Opinion

No more salmon baloney

mtexpress.com, August 12, 2011

A federal judge ruled last week that salmon baloney is inedible—and harmful. The National Oceanic and Atmospheric Administration Fisheries Service, formerly called the National Marine Fisheries Service, is the federal agency tasked to protect and recover endangered salmon in the Northwest. U.S. District Judge James Redden issued a scathing review of the agency's efforts on behalf of the iconic fish. In 2008 and 2010, the agency issued opinions that the operations of 14 sets of hydroelectric dams, powerhouses and reservoirs on the Columbia River System were not likely to put the continued existence of salmon in jeopardy. The judge called the opinions "arbitrary and capricious." He further wrote that "NOAA Fisheries' approach to these issues is neither cautious nor rational." In other words, the agency's claim to be helping the species is a big fish story.

The agency presented documents to the court showing that it had scurried around and piled up a lot of agreements with other groups in its effort to keep dam-battered salmon runs from disappearing from the Northwest. But in the end, the documents were just a pile of paper good only for shuffling. They also showed that while the agency expressed hope for recovering salmon, it didn't have any specific projects scheduled between 2013 and 2018 that would help salmon survive. The judge sent NOAA Fisheries back to the drawing board. He ordered continued spring and fall spills on Northwest dams to protect salmon migration. He ordered the agency to re-examine dam operations, to continue to report to the court and to come back by 2014 with real plans—no baloney. Northwest conservation organizations, including the National Wildlife Federation, which was the lead plaintiff, hailed the decision as a victory for salmon. Idaho Rivers United hailed it as a victory for Idaho and businesses that depend on the millions of dollars the runs generate from fishermen and tourists. Yes, it's another battle won. But the outcome of the struggle to save salmon is disturbingly far from certain. Salmon face obstacles higher than any dam. They are built of disdainful and careless politicians, sleepwalking bureaucrats and commercial interests whose profits may be threatened by salmon recovery. The clock is ticking. It's not just NOAA Fisheries that must do better. It's Congress, Northwest state governors, cities, businesses and dam operators. If the legendary fish are to survive, they need more than a judge. They need a team that refuses to dish out baloney—and a public that refuses to buy it.



¹This compilation of articles and other information is provided at no cost for those interested in hydropower, dams, and water resources issues and development, and should not be used for any commercial or other purpose. Any copyrighted material herein is distributed without profit or payment from those who have an interest in receiving this information for non-profit and educational purposes only.

8/26/2011



Some Dam – Hydro News™

And Other Stuff



Quote of Note: *"It is well enough that people of the nation do not understand our banking and monetary system, for if they did, I believe there would be a revolution before tomorrow morning."* -- Henry Ford

"Good wine is a necessity of life." - -Thomas Jefferson

Ron's wine pick of the week: Cruz Andina Malbec 2008 Mendoza, Argentina

"No nation was ever drunk when wine was cheap." - - Thomas Jefferson



Dams:

(Lately, we are seeing many reports like this one. They are labeled under the heading of "dam safety" when they should be labeled "public safety". In my many years at FERC, there were no dam failures that caused loss of life, only a few low-hazard incidents that caused damage to the dams, but there were hundreds of deaths caused by people doing things around dams that were dangerous and sometimes irresponsible. As we said many times, the truth is that more deaths were caused in public safety incidents near dams than from dam failures. The Corps of Engineers came up with a simple fix on the Potomac River – fill the area downstream with bags of concrete mix from Home Depot!)

Group advocates for dam safety

By Theresa Freed on August 15, 2011, 6lawrence.com

A group is working to make sure a Lawrence man did not die in vain. Ryan Moore is the latest person to drown along the Kansas River, and some believe future tragedies can be prevented. On July 15th, Moore was traveling along the Kansas River in Topeka when his kayak was sucked into the Topeka water intake dam, a place considered dangerous because of the strong current. His body was recovered near the dam. A similar accident happened in 2007. Two men were canoeing from Lawrence to Topeka when their canoes capsized and went over the spillway near the water treatment plant. 25 year-old Joshua Bryant and 30 year-old Richard Heyroth, both of Topeka, drowned. Bryant's father has since filed a wrongful death lawsuit with a trial date set for March. Family and friends of the latest victim are going a different route. They're starting an online campaign to make part of the river safer. The "Fix the Topeka Dam" Facebook page is

dedicated to gaining support for what they say are low-cost measures to prevent future deaths. They say the dam creates a deadly hydraulic effect, and once someone is trapped in it, they're pulled toward the dam and under water, making escape nearly impossible. They say other communities no longer consider this design safe and have made changes. They suggest filling the area just below the dam with rock so the energy of the water can no longer trap people.

(It looks like a fix to prevent overtopping of the right and left embankments – wish article said more on that.)

MWRA to lower water, build new structures in Framingham's Foss Reservoir

By Jaclyn Reiss, Town Correspondent, boston.com, August 15, 2011

Massachusetts Water Resource Authority officials will soon lower Framingham's 130-year-old Foss Reservoir water level by 10 feet this fall in preparation for capital safety improvements to the dam. Authority officials say the dam is not in danger of imminent failure but has been classified as "high hazard" due to its proximity to residents and needs to comply with state regulations issued in 2006 and designed to ensure that such dams can withstand catastrophic events.



Artist's view of parapet wall etc.

The improvements, which include building a parapet wall and adding a concrete fusegate, will prevent the dam from spilling and eroding due to storms, according to MWRA spokeswoman Ria Convery. "We're building on top of [the dam] so in the event of a major wet weather storm, it won't wash the dam out, but let the water out more gently," Convery said. The work, done by T. Ford of Georgetown, will start around late August or early September and will last until December, Convery said. "It's a big job," Convery said. "They have to lower the water to physically get to the dam. Then the dam itself, the top is stone blocks, so we need to raise that, as well as the dam itself and the walls along the side. Then we construct a structure on top called a fusegate, which is a concrete structure that will enable water in a huge storm – if it comes up too fast – to go over the dam to stop from eroding it. If there are big waves sending water over the dam, this lets the water flow over in a safe manner." The contractors will also remove dead trees from the surrounding embankment, Convery said. Convery said the work should not affect the town or the area, since the reservoir serves as a back-up supply in case of emergency. The reservoir is one of five bodies of water allocated \$3.4 million total for capital improvements by the MWRA. Others are the Sudbury Reservoir in Southborough and Marlborough, the Chestnut Hill Reservoir in Brookline, the Weston Reservoir, and the Wachusett Open Channel in Southborough. "The biggest chunk of work needs to be done in Framingham, since we're building a new structure," Convery said.

(The video with the article says the boaters were "foreigners", but didn't say where they might be from! If you click on the letter – it can be enlarged if you want to read it. Full article to watch video: <http://www.ksl.com/?nid=148&sid=16825521>)

Suspicious activity prompts investigation at Echo Dam

August 16th, 2011, By Pat Reavy, ksl.com

Coalville — A bizarre incident involving boaters on Echo Reservoir who appeared to be closely looking at the dam, is raising red flags for federal officials. "Just the very nature of the way they went about their business, it just did not seem right," said Bureau of Reclamation spokesman Barry Wirth. On Aug. 7, a group of about a dozen people took two boats onto Echo Reservoir about 1:30 a.m. They paid at the fee station to launch their vessels and then took them out on the water, Wirth said. He was not sure Tuesday what kind of boats they were using.

2115 ECHO BARRIED
COALSVILLE, UT 84601

AUG. 7, '71

DEAR CAMPERS,
YOUR HELP IS NEEDED.

The other night 3 boats came in at 1:30 A.M. Unloaded and put two \$40.00 to put the boats in the water. They left part of the stove in shore. One boat went clear to the dam because boat and jet was chent and the other clear went to the south end. THEY WERE ALL FROM A FOREIGN COUNTRY.

In the morning when they told me I immediately called the authorities. They rushed 2 boat rangers, 5 Sonnet Co. dogs, a patrol from the FBI to see if they could get fingerprints from the motor, and a wire submarine the doctor from Honolulu Service, to snap the head of the dam and to scope down the channel these were under the highway bridge.

The purpose of this letter is to keep our Sonnet Campers informed and to remind you that you are Echo Resorts best eyes and ears. I am at any time day or night. Will appreciate your help. I will pay you \$200.00 a month. Jay 800

Cody 425-1111

It's the 10th anniversary of 8/31. They will try something. We can do help prevent by being alert.

ECHO RESORT

Project To Raise San Vicente Dam Under Way

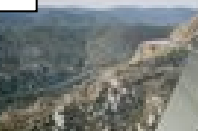
San Vicente Reservoir Dam To Be Raised By 117 Feet

Lakeside, Calif. -- The largest construction project of its kind in the U.S. is under way in San Diego County. Construction crews are almost halfway done with a "saddle dam" at the San Vicente Reservoir. The dam will eventually be 40-feet tall, according to officials. That project is nothing compared to what engineers and construction crews call the "Main Event." That's where the San Diego County Water Authority will raise the current San Vicente Dam an additional 117 feet. It's the largest project of its kind in the U.S., and once it's completed the San Vicente Reservoir will be able to hold more than twice its current capacity.

Before

An aerial photograph of the Hoover Dam, showing its massive concrete structure and the surrounding rugged, rocky terrain. The dam is situated in a deep canyon, with steep, rocky hillsides on either side. The water of Lake Mead is visible to the right of the dam. The image is labeled "Before" in a white box in the top left corner, indicating it was taken before the 1936 earthquake.

After



investigated to decrease San Diego's dependency on outside water sources. "It's important because if we couldn't bring imported water in, we could tap into our local storage here, right in San Vicente," said project manager Kelly Rodgers.

By 2015, the reservoir is expected to hold a year's worth of emergency water for 300,000 households. The \$450 million project may not have been possible if it wasn't for the hills near the reservoir. That's where construction crews are mining the rocks that are the main ingredient in the roller-compacted concrete being used in the two dams. About 90 percent of the concrete comes from the hills which are less than half-a-mile away. The concrete is added at the top of the dam, one foot at a time. "We're also not having to truck supplies onto site and that's real great for the Lakeside community, eliminating that truck traffic," said Rodgers. Otherwise, dump trucks would have to take 100,000 trips through the nearby community of Lakeside during the next six months.

(A long history is overtaken by time and need. The reason for including this article is – why does this dam removal cost so much?)

165-year-old Campbellsport Mill Pond dam comes down inch by inch

fdlreporter.com, Aug. 18, 2011, Written by Sharon Roznik, The Reporter

Campbellsport, WI — Henry "Heinie" Straub used to catch a lot of bullhead and walleye fishing at the Mill Pond in Campbellsport. For years it served as the site for an annual fishery sponsored by the local Jaycees. But that's in the past. The historic 1846 Mill Pond dam is being taken down, inch by inch, in an effort to restore the Milwaukee River to its



natural state. Work on deconstruction of the old wooden dam began Aug. 4, with contractors Solutions 101 LLC of Neenah slowly removing small portions of the structure. The work is slow going due to the need to control the water level drop off, said Carrie Ann Hewitt, project manager from the engineering firm of Bonestroo. "We can only take it down so many inches per day. The Wisconsin Department of Natural Resources doesn't want water to flow downstream too fast and cause problems with sediment being transported," she said. It will probably take about a month to draw down the mill pond area. Then the experts will wait and see what kind of natural course the river takes. "It's almost like opening a present," Hewitt said. "We don't know what we're going to get."



Since 2009, the Village of Campbellsport has been working with Bonestroo of Waupun to obtain funding for the project to rehabilitate the stagnant water area that has built up

around the dam. The National Oceanic and Atmospheric Administration came through with \$684,519 in grant money, which includes paying for a study on the fish population in the Milwaukee River at that location. Village President Patrick Twohig said NOAA chose to fund the Campbellsport project to document the physical and biological changes that take place in a river when the dam is removed. The study will benefit similar projects nationwide. Hewitt said Bonestroo staff counted fish and plant species and collected data to provide a comparison of the river's biology before and after the project. The DNR provided an additional \$50,000 in grant money for the project. The goal is to increase opportunities for fish migration and diversity, and increase acreage of natural wildlife habitat. Other grant-funded activities include a stream impediment survey for tributaries to the Milwaukee River upstream of the dam, and public outreach and education activities. The Mill Pond has not been used for recreational purposes for a number of years due to weed growth and silt build up. The dam was originally built to provide hydro-power that operated a sawmill along the river. In 1927 it ceased operation. A referendum during the 2009 spring election favored removal of the dam by a 268 to 83 vote. The alternative

called for upgrading the dam at a cost estimated at \$400,000 to \$500,000. Village President Patrick Twohig said it made more sense to take down the dam. "There hasn't been a lot of fish. It's basically been a stagnant pond in the drier months. If we retained the dam we would never get the chance to see the pristine body of water that once existed," he said. When work first began no one knew what they would find, Hewitt said. "We weren't sure if the dam was concrete or timber. It turned out to be a wooden crib-structure filled with rocks. Huge boulders were placed in front of it," she said.

We weren't sure if the dam was concrete or timber. It turned out to be a wooden crib-structure filled with rocks. Huge boulders were placed in front of it," she said. Straub was a vocal advocate for keeping the dam and instead cleaning up the river. He said the river used to be clearer in that area until a portion of Highway 67 that runs along the river into Campbellsport was reconstructed. "The dam is historical and well-constructed. It's a benefit for people living downriver to prevent flooding, so it will be interesting to see what happens," he said. Hewitt said the Milwaukee River flows toward Kewaskum from Campbellsport. A bedrock ledge could still provide a small waterfall where the dam is located, she said. Portions of the rock face will be retained and stockpiled around an information sign placed at a pullout location along Highway 67. The sign will provide historical information, Twohig said. "The park below the dam will be maintained. What we end up with is based on how the river decides to establish itself," Twohig said.



Hydro:

(Some people deserve to fulfill their dreams)

Sweet Home cancer survivor wants to build small dam, reservoir

By Alex Paul | Albany Democrat-Herald, democratherald.com | August 14, 2011

Sweet Home, OR - Civil engineer Dave Harmon spent decades designing bridges, first for the Oregon Department of Transportation and then as a private consultant. Now the 60-year-old cancer survivor has taken on a new challenge. He wants to build a dam. Actually, he wants to produce electricity. Five megawatts -enough to power 4,500 homes - at peak times of the year. He needs the dam to maintain a small reservoir of water. And he wants to do this east of Sweet Home in the Willamette National Forest. It might seem like an impossibility, but Harmon said he has learned in life that the word "no" really just means "yes ... with conditions." "There are two ways to produce hydropower," Harmon said. "You can store large bodies of water, like Foster and Green Peter reservoirs, and release that water through turbines. Or, you can use a small amount of water dropped over a steep distance to turn a turbine. We plan to do the latter." Harmon and a couple of investors have formed a partnership called Pacific Green Power. They have researched more than 140 potential sites throughout Oregon before settling on the Two Girls Creek area about 26 miles east of Sweet Home on the Sweet Home Ranger District. "This actually started when I looked at about 600 acres in Lane County," Harmon said. "There is a stream on the property and it got me wondering what it would take to produce electricity. It would not work at that site, so I began looking elsewhere." He studied topographic maps, searching for significant elevation drops.

Why Two Girls Creek? The water flow is consistent year-round, and natural barriers reduce or eliminate fish obstruction issues. The water comes from rainfall and springs in the area. "The area is steep, physically demanding to get to," Harmon said. "When I saw the water for the first time, it was like 'Eureka!'" Harmon plans to build a small dam that will create a shallow, 6,000-square-foot reservoir. Harmon says water from the reservoir will drop nearly a quarter-mile down through a pipe and will spin a turbine fast enough to produce energy without negative environmental issues. "I really believe this is going to be the way we produce power in the future," Harmon said. "It's far less expensive than big dams and it's more environmentally sensitive."

Harmon said a 17-foot-wide road will need to be constructed and about 7 miles of power line installed. He believes water entering the system will actually be cooler than the natural flow of Two Girls Creek in the summer months and will come out cleaner, due to screens that protect the turbine from debris. Although Forest Service officials have been open to learning about the project so far, Harmon admits it is going to take extensive testing to provide enough data to get a green light. His goal is to have the project running by 2014. Harmon estimates the cost at about \$6 million. "But the end product will be worth it," Harmon said.

Although some people might think the project could never be approved, Harmon points out that a similar project on Falls Creek has operated on the Sweet Home Ranger District since 1993. "These systems have basically zero environmental impact," Harmon said. "I believe this is the way we should be moving forward to meet our energy needs." Meg Mitchell, Willamette National Forest supervisor, said, "We are very early in this process. We are helping Mr. Harmon refine the ins and outs of the process, but the Federal Energy Regulatory Commission is the lead agency at this point." Stacey Forson, recreation lands officer for the Willamette National Forest, said FERC has accepted Harmon's request for a preliminary permit and there is a 30-day comment period on that process alone. "What that does is reserve a place in line for the applicants," Forson said. "If someone comes up with a similar plan, Mr. Harmon would be first in line." Forson said the Forest Service will be especially concerned with fish and other aquatic resource issues. "There will be lots of communication during the licensing process between FERC and stakeholders," Forson said. "In the end, though, the special use permit to allow occupancy of the land would need to come through the Forest Service." Forson expects the process will take a long time and the public will be given numerous opportunities to comment on Harmon's plan.

Harmon is a 1968 South Eugene High graduate and earned his engineering degree from the Oregon Institute of Technology in Klamath Falls. He spent 17 years as an engineer with the Oregon Department of Transportation and then set out on his own as a private consultant and entrepreneur. It was while developing storage unit projects in Salem and Portland that weren't always received well by neighbors that Harmon learned to work through opposition. The public was invited to a recent tour of the power project site, and Pacific Green Power has applied for a permit through the Federal Energy Regulatory Commission. "About 30 days from now, things will begin to get expensive," Harmon said. Plan reviews by government agencies will cost as much as \$150,000, he said. Although the project may seem overwhelming, Harmon sees it as a positive challenge and goal. In 2002, he underwent a bone marrow and stem cell transplant due to bone cancer. "I just can't sit and read a book," Harmon said. "I need something to do. This is a positive thing. I have good days and bad days, but this is fulfilling." Harmon and his wife, Belle, moved to Sweet Home a few months ago to be closer to the proposed project site. "We downsized our house and we're finding that we enjoy small-town life," Harmon said.

(Mmmm! You might get the impression that they don't like each other)

First Light claims lake authority's work 'duplicative'

Robert Miller, Staff Writer, newstimes.com, August 16, 2011

FirstLight Power Resources claims the Candlewood Lake Authority's work is "supplemental or duplicative" to the utility's own efforts on Candlewood Lake, CT and not subject to the 2004 federal hydroelectric license FirstLight has for Candlewood. Therefore, FirstLight says in an Aug. 12 letter to the Federal Energy Regulatory Commission, federal authorities should not compel it to contribute anything to the authority's annual budget, a \$65,500 cost the utility initially resisted paying this year. New Fairfield First Selectman John Hodge said Tuesday that FirstLight's arguments were "preposterous." "I'm not sure what their endgame is anymore," Hodge said. "I don't think it's about \$60,000." "It's disappointing," Howard Berger, chairman of the authority's



board of directors, said Tuesday. "They don't see the great need for the work the authority does." The FirstLight letter comes in the wake of its June decision not to pay its one-sixth share of the authority's annual budget. The five towns surrounding the lake pay an equal share.

Although the utility eventually paid, many local officials were angered at its hesitancy to support the authority. The towns of New Fairfield and Sherman, and the Housatonic Valley Council of Elected Officials, wrote to FERC, asking its regulators to either require FirstLight to make the annual contributions, or deny federal approval of the lake's shoreline management plan, a plan that has been pending for two years. In the Aug. 12 letter to FERC, Richard Laudenat, manager of the five hydroelectric plants on the Housatonic River, lists several of the authority's lake activities: its lake patrols; its educational and environmental work; annual lake clean-up and its monitoring of invasive species, including zebra mussels and Eurasian watermilfoil. But Laudenat said FERC did not require the utility to perform any of these activities as part of its federal 2004 license to operate the hydroelectric plants. Therefore, FERC should not require FirstLight to support them now. "There is no basis for the municipalities assertion that CLA is undertaking activities that the Commission would otherwise require of FirstLight, and that FirstLight should be required to continue underwriting CLA's activities," the letter states. "Rather, the voluntary nature of FirstLight's contribution to CLA is fully consistent with Commission policy." The letter also states FirstLight may reduce its support for the authority, or only make contributions targeted to specific activities in the future. "FirstLight has made no commitments with regard to CLA for fiscal year 2011-2012," the letter states. Hodge, who is a member of the authority's board of directors, said Tuesday that FirstLight's approach ignores the essential nature of the authority's work.

For example, he said, virtually all the initiatives taken to combat zebra mussels in the Housatonic River area this year, forming a task force, educating the public, erecting signs warning of the danger the mussels pose for the region, have been authority initiatives. "FirstLight has done absolutely nothing," Hodge said about the outreach work. Hodge also said that FirstLight's claim that it is paying more to the towns because of its increased tax burden, and therefore should not have to pay for the authority's work as well, ignores the reported \$1.9 billion FirstLight's parent company, Suez Energy North America, paid for the company in 2008. Its previous owner, Energy Capital Partners, paid \$1.3 billion for the utility in 2006. "That's \$600 million more in two years, with no improvements made," Hodge said. "If I bought a house worth \$300,000 and paid \$1 million for it, I'd expect my tax assessment to go up as well."

(Articles on this device have been in past Newsletters. This is the latest. [Click on the link for more info.](#))

Hydroelectricity Without Turbines or Dams? Vortex Hydro Energy Says It's All About the VIV

Sarah Schmid 8/17/11, xconomy.com

What if you could generate hydroelectric power without turbines, propellers or dams—but by simply harnessing the current from the water the generator is placed in? According to Ann Arbor, MI-based startup [Vortex Hydro Energy](#), thanks to a product developed by University of Michigan professor Michael Bernitsas, you can. Last decade, Bernitsas was attempting to build a better mousetrap, so to speak, but he was stymied by an enemy common to researchers who seek to harness water's power: Vortex Induced Vibrations, or VIV. VIV is a phenomenon where vortices—or whirling masses of water—are formed and shed on the downstream side of rounded objects in a fluid current. The vortex shedding alternates from one side of a body to the other, creating a pressure imbalance that causes the body to move back and forth, not unlike a stop sign vibrating on a windy day. Since it was first observed by Leonardo da Vinci in 1504, engineers have been trying to understand VIV and keep its destructive forces away from mechanical, marine, offshore, and nuclear engineering applications. But Bernitsas approached it from another angle: What if he could somehow utilize and control VIV's destructive power? His research took an abrupt turn, and it wasn't long before [Vortex Hydro Energy](#) was hard at work commercializing Bernitsas' invention: the VIVACE converter.

"Our device has just two major components," says Vortex Hydro Energy CEO Gus Simiao (pictured above) about the prototype his company has built. "The cylinder is placed horizontally in the water, and the water's current causes it to move up and down. The energy in the movement of the cylinder is then converted to electricity." Simiao points out that the principle used by his company's prototype is the same one used by fish to propel forward. Vortex Hydro Energy successfully tested the first generation of its prototype in the St. Clair River last year. The second-generation model, tested this past spring, incorporated modifications born of that testing to improve energy generation. Ultimately, Simiao said, the company's goal is to supply power through its generators to industrial facilities that are located near rivers and oceans. Vortex Hydro Energy already has the support, both financial and otherwise, of several major players in the world of hydro energy, including the U.S. Navy, the National Science Foundation, DTE and NextEnergy. A few months ago, the startup hired seven new employees to sustain its own forward momentum. "We've begun working on the third-generation prototype," Simiao says, "and we should be ready for market between 2013 and 2014."

(The title sort of gives the impression someone is building 700 dams. Nope, they are referring to existing dams to be used for hydro)

MAINE COMPASS: Adding 700 small dams would increase Maine's hydro capability

Merrilyn Sawyer, August 20, 2011, kjonline.com, Kennebec Journal

Small dam owners have a window of opportunity to generate hydropower and aid fish migration. The Bangor Daily News recently ran an article about meetings the National Oceanic and Atmospheric Administration (NOAA) planned to hold in Maine to discuss small dams that impede Atlantic salmon migration. I thought: These dams could provide hydropower in addition to being refurbished with fish ladders. The article started with these statements: "In the ambitious effort to revive Maine's Atlantic salmon runs, the \$50 million campaign to remove or bypass three major dams on the Penobscot River has received the lion's share of attention. ... "But salmon and other sea-run fish face another 700 dams that block or impede their access to rivers, streams and tributaries throughout the three watersheds in Maine where the federally protected fish are found."

NOAA planned these public meetings "to reach out to landowners who have these other dams on their properties." These meetings were held in Brewer on Aug. 6, Augusta on Aug. 15 and Machias on Aug. 18. NOAA's website explains the agency's desire to help small dam owners overcome the threat of "illegally taking salmon," which technically occurs when a dam hinders migration. Salmon in the Penobscot, Merrymeeting and Downeast watersheds are federally protected, and NOAA is ready to help facilitate and streamline the application processes to install fishways if the owners wish to keep their dams. It also will help owners understand how removing dams would put them in compliance with federal laws regarding salmon migration. Dave Bean, a fisheries biologist with NOAA in Orono, explained further in an email: "The process or plan we are describing here would be for non-federally permitted private dam owners who are interested [in] complying with environmental laws, but don't have the resources to get started." Two federal agencies, NOAA and the Federal Energy Regulation Commission (FERC), become involved when small dam owners would like to add a fish ladder or fishway into a retrofit of their dam to provide hydropower. NOAA can help work out a voluntary plan for a dam with a fishway. If the dam owner wishes to retrofit the dam to generate power, then FERC, which licenses hydropower dams, becomes involved. FERC also will make sure that the retrofit includes an appropriate fishway to comply with the Endangered Species Act. These dams need not be hindrances to sea-run fish. A retrofitted dam with a properly installed fish ladder could let sea-run fish continue upstream and also could add many megawatt-hours of electricity to the Maine power grid -- to keep in Maine.

Maine is one of only five states in the country that gets 50 percent or more of its power from renewable resources. That half of our power comes from three sources: Hydropower contributes about 54 percent; biomass, about 44 percent; wind, 1.8 percent. If even 500 of Maine's 700 small

dams were added to the mix, the amount of hydropower would increase significantly. And, unlike wind projects and other large power projects, these dams would not create the massive grid of new power lines and substations. For years, the public dismissed the threat of electromagnetic fields from power grids and substations, but studies have shown that families living near these structures exhibit higher rates of cancer than those who do not. Do we want to be a state where we have to worry about these sorts of things, or do we want to be a state where the power of flowing water is harnessed to provide renewable energy? NOAA is concerned about the sea-run fish being able to migrate upstream. I believe most of us in Maine are thrilled to see the rivers cleaned up and the huge old dams removed, but we lost hydropower with every large dam that was removed.

Hydropower has a long, proven history in New England. Maine needs an effort to restore small hydro projects, and the owners of these 700 small dams could represent the first step by refusing to abandon them and/or remove them. The cost of refurbishing the dams and adding good fish ladders would not seem to be prohibitive, given the scale of the projects. The Department of Energy has some funding available for green energy projects, but its website was unclear if this includes low-head dams. Years ago, a contractor for whom I worked put in a fish ladder at the dam at Fort Andross in Topsham/ Brunswick. Many people go to that fish ladder to see the runs of the sea fish migrating upstream in the Androscoggin River. What a wonderful experience it would be for young and old to be able to view such a migration of sea-run fish on smaller dams throughout the state. The time is ripe for new hydropower in Maine. With so many residents objecting to wind power, Maine has an opportunity to serve both the energy dynamic and the fisheries activities of sea-run species.

Merrylyn Sawyer graduated from the University of Maine with a wildlife degree. She has worked for various conservation-minded organizations: Nature Conservancy, RESTORE: The North Woods and the Sportsman's Alliance of Maine.



Water

(If this project gets built it will be a miracle. Building anything 578 miles long is a "pipe" dream!)

'Million' pipeline now touted as hydropower project

By Amy Joi O'Donoghue, Deseret News, deseretnews.com, Aug. 15, 2011

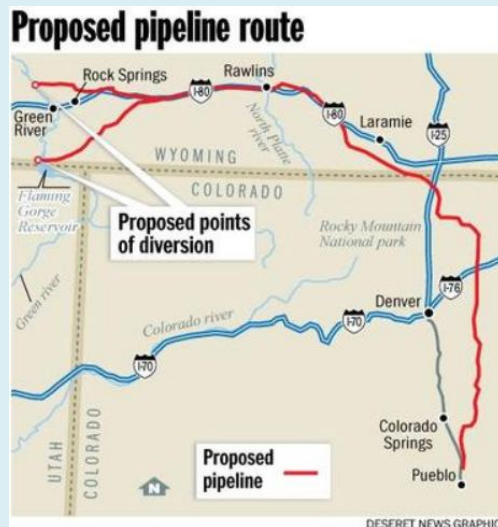
Flaming Gorge, WY — A plan by a Colorado businessman to pipe Green River and Flaming Gorge water from southwest Wyoming to Colorado's bustling metropolitan corridor faces opposition from a tri-state area that includes Utah over fears it will impact present and future water rights. "If this project moves forward, we're afraid that whatever water rights we have left (on the Green River) will be a paper water right without any wet water," said Uintah County Commissioner Mike McKee. The so-called "Million" pipeline is

now being proposed as a hydropower project and will be reviewed by the Federal Energy Regulatory Commission, rather than the Army Corps of Engineers. Aaron Million's project as envisioned under his company, Million Conservation Resource Group, would entail construction of a 578-mile pipeline that would trace I-80 through Wyoming before dropping down into Colorado east of Fort Collins and ending near Pueblo. Million says construction costs range from \$2.8 billion to \$3.2 billion, although his critics put it much higher. The proposal has already raised stiff opposition by Boulder-based Western Resource Advocates, an environmental conservation



Flaming Gorge Dam

group, plus multiple Wyoming and Utah counties that assert such use of upper Colorado Basin water resources cannot be sustained. "Water is key in the West, and it is certainly key in our area," McKee said. "It is not the appropriate place for that water to be developed from." Million says he welcomes reviews and questions about the project, which is now being modeled after the Lake Powell Pipeline — another hydropower project winding through environmental reviews that proposes conveying water from Lake Powell's Glen Canyon Dam to Sand Hollow Reservoir in Washington County. "Over a year ago we started to take a very close look at the Lake Powell pipeline," Million said. "It was clear we needed a much more in-depth analysis of the hydropower component — which is potentially a huge piece of the project and potentially the main focus."



As planned, Million said the project would generate 70 megawatts of hydropower from in-line storage and another 500 to 1,000 megawatts from pumped storage — an energy source he says could shore up intermittent renewables such as wind and solar that are in demand to become a larger player in Colorado's energy portfolio. Million said he is framing the water-use requirements around a U.S. Bureau of Reclamation preliminary analysis that shows even when future Utah and Wyoming water depletions are factored in from the Green River, Flaming Gorge has an available surplus of 165,000 acre feet a year. Another 75,000 acre feet would be diverted per year from the Green River above Flaming Gorge. Critics say such diversions would at the very least degrade water quality, destroy important fishery habitat and potentially interfere with water rights downstream. In that context, the scenario of what water rights have

priority becomes a convoluted and contentious question that could take years to sort out. In the interim, Western Resource Advocates and other critics have not slowed in their opposition to the pipeline, which they say will deliver water that is too pricey and environmental impacts too detrimental, whatever its characterization or form. "The impacts will remain the impacts even in the guise of a power project," said Peter Roessmann, spokesman for the group. "The problems of the pipeline do not go away. There are still impacts to Wyoming, still impacts to folks in Utah and still energy costs."

Utah's Uintah County joins another line of critics, who aside from other accusations, describe the proposal as an "if we build, it they will come" project because of questions about the financing and customer base. Million says the viability of the project is backed by multiple water supply studies that show sharp contrasts between Colorado's available water supply and demands in the decades to come. That is backed by letters of interest he says he has received that represent an annual need for 400,000 acre feet of water — nearly twice what the project would deliver.

A recent telebriefing hosted by the Boulder environmental group, however, suggests that any thirsty Colorado households and other potential users could be in for a long fight if they want the pipeline to become a reality. Roessmann said several thousand people participated in the briefing, phoning in with questions about impacts to endangered fish, water rights and downstream impacts. Million agrees there needs to be a full vetting of the proposal. "There have been environmental issues that inform this project since Day One," Million said. "The (Bureau of Reclamation) says there are surpluses in the system, and if there are, let's look at the reality."



Environment.

Hatchery Runs to Change in the Cowlitz River

Balance Between Hatchery and Wild Runs Required by Tacoma Power's License to Operate Dams

chronline.com, By Adam Pearson | Aug 16, 2011

Fishermen will be happy to learn that hatchery winter steelhead will be released into the upper reaches of the Cowlitz and Tilton rivers again. They might not be so joyous about the early winter steelhead run getting dropped. Tonight at Mossyrock High School, representatives of Tacoma Power, the Washington Department of Fish and Wildlife and other conservation agencies will explain coming changes to hatchery runs that will be in place for the next six or seven years. The meeting takes place from 5 to 7:30 p.m. in the school's multipurpose room. Those representatives will convene again this coming Monday in Toledo to explain changes in detail and take public comments on the Cowlitz River Fisheries and Hatchery Management Plan. That meeting will occur in two phases — 1 to 4 p.m. and 4:30 to 6:45 p.m. — at St. Mary's Academy. In March 2010, a raucous crowd packed Morton's Bob Lyle Community Center as officials explained that the hatchery winter steelhead run was coming to an end for an extensive study on wild steelhead spawning. But officials now say the experiment is being shelved — as well as plans to build a fish ladder at the Mayfield Dam, the Cowlitz River's third and farthest-downstream dam —because wild winter steelhead runs have fared so poorly. "We've reconsidered what we've originally proposed in the productivity test," said Pat Frazier, a fisheries biologist with Fish and Wildlife.



Tacoma Power and Fish and Wildlife experimented with the productivity run as a mandate within a relicensing agreement the energy company agreed to several years ago with the Federal Energy Regulatory Commission to operate its two dams on the Cowlitz River. Frazier said the early winter steelhead run is coming to an end because the hatchery fish is not a naturally spawning fish in the river — they were illegally introduced — and hamper the overall success of other fish runs. "There will be some people who want that early fish," Frazier said, but the early winter hatchery run's demise will increase other runs' productivity. As part of the plan, hatchery numbers for spring chinook salmon and summer steelhead will increase. Mark LaRiviere, a fisheries biologist for Tacoma Power, said more fish-harvest opportunities will be available with the release of more fish in the Cowlitz and Tilton rivers. "We have listened to the needs of the fishermen," LaRiviere said. The development of the plan, which is not yet finalized, goes back to 2006 when discussions about hatchery runs first began after Tacoma Power renewed its license to operate dams. Besides the energy company and Fish and Wildlife, six other groups worked on the plan: the National Marine Fisheries Service, the state Department of Ecology, the U.S. Fish and Wildlife Service, the Yakama Indian Nation, and conservation groups American Rivers and Trout Unlimited. The plan can be accessed at the website cowlitzfish.net. Frazier said plans call for decreasing hatchery runs of fall chinook and coho salmon. Once in place, the governing bodies of the plan will review results annually and new plans will be drafted and implemented every six or seven years.

The removal of two major dams on Washington rivers begins this fall

American Rivers, Aug 16th, 2011 | By Environmental Headlines -- CT environmental news | environmentalheadlines.com

This fall two major river restoration efforts will begin. The removal of outdated dams on Washington's Elwha River and White Salmon River will bring the rivers back to life and deliver a wide variety of benefits to the environment and local communities. American Rivers has dubbed 2011 "the year of the river" because of these and other historic river restoration projects. In fact, this year we will reach the significant milestone of 1000 dams removed in the U.S. Watch their website below to view live video footage of the dam removals and track the river restoration progress! Explore the links below to learn about the Elwha and White Salmon, and other rivers

being restored through dam removal. And, learn about why healthy rivers are so important for our health, economy, and quality of life.

Power company to build shad ladder at Juliette dam

by Will Davis/The Monroe County Reporter, jcnews.com, August 18, 2011



The company that operates a small power plant on the Juliette dam plans to build a first-of-its kind fish ladder under orders of the federal government to help the shad.

Eastern Hydroelectric bought the Juliette powerhouse along the Ocmulgee River, Georgia in 1986, and a permit renewal in 1995 with the U.S. Fish and Wildlife Service added a requirement that Eastern make a way for shad to spawn upstream past the dam.

Eastern general manager Bill Patrick said after 16 years of negotiating with the government, the company has agreed to build a concrete fish ladder for the shad. Patrick said the \$300,000 ladder will be constructed underneath Eastern's

powerhouse on the Jones County side of the river and will let fish travel north past the dam. Patrick said the government is trying to restore the habitat of the American shad, which they say was harmed by the construction of dams along rivers. Shad populations have declined since the 1860s, when commercial fishing records show that Georgians would catch 480,000 pounds of shad each year up river to the north near Atlanta. Not only was the fish popular, but its eggs, called shad roe, were a popular delicacy in its day.



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