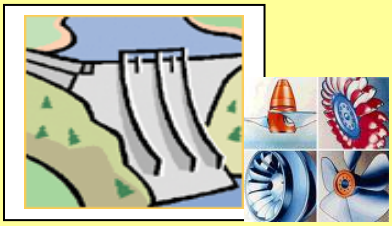


# Some Dam – Hydro News

**and Other Stuff**

i


**8/03/2007**

**Quote of Note:** *"It is pleasant to have been to a place the way a river went." - - Henry David Thoreau*

**Other Stuff:**

(Here's a novel approach to a subject *(See blog below).* This is a nuclear advocate justifying his view of our energy future. He conveniently forgets that nukes are NOT green. If anyone thinks dealing with nuclear waste and mining uranium is environmentally friendly or ever can be, they are smoking some really strong stuff. Even more dishonest is the Hydro Reform Coalition picking up this story and running with it with the blinders on. See their web site on the subject: **http://www.hydroreform.org/news/2007/07/25/hydropower-most-damaging-power-source-per-square-meter** (Hint: Hold down the Ctrl key and click on the link.)

The following is a letter sent to the Hydro Reform Coalition:

*"As an organization, your anti-hydro and anti-dam rhetoric has reached a new low. The use of the Ausubel so-called study which is a blatant justification for nuclear power is a distortion of the facts taken out of context to justify your opposition to hydropower. Your mention of wind power is also misleading and dishonest. Wind power is notoriously undependable and could never be relied upon to offset hydropower which has the ability to respond to power demands because its storage reservoirs have potential energy ready to be called upon on demand. If we are so foolish as to not develop our hydropower potential, we would inevitably have more coal, natural gas, and nuclear plants, all of which have serious environmental and safety issues. Yes, we should conserve and we should develop all possible renewable power, but that won't do the job. Instead of providing a disservice to the Country, how about entering the debate on our energy future with a little more honesty? It would help us develop a more sound energy plan for the Country."*)

**This blog is produced by the Center for Advanced Bio-Energy Research CABER) at the University of Illinois.**

July 25, 2007

## U.N. Expert: Renewable Energy Not Necessarily "Green"

"Renewable and nuclear heresies" is the name of the paper written by Jesse Ausubel, Director, Program for the Human Environment for the Rockefeller University in New York. Ausubel was one of the main organizers of the first UN World Climate Conference (Geneva, 1979), which substantially elevated the global warming

issue on scientific and political agendas. During 1979-1981 he led the Climate Task of the Resources and Environment Program of the International Institute for Applied Systems Analysis, near Vienna, Austria, an East-West think-tank created by the U.S. and Soviet academies of sciences. He's as green as it gets. And he says the focus on renewable energy is all wrong. Renewable does not mean green, he states, and goes on to explain that building enough wind farms, damming enough rivers, and growing enough biomass to meet global energy demands will wreck the environment. Ausubel has analyzed the amount of energy that each so-called renewable source can produce in terms of Watts of power output per square meter of land disturbed. He also compares the destruction of nature by renewables with the demand for space of nuclear power. "Nuclear energy is green," he claims, "Considered in Watts per square meter, nuclear has astronomical advantages over its competitors." On this basis, he argues that technologies succeed when economies of scale form part of their evolution. No economies of scale benefit renewables. More renewable kilowatts require more land in a constant or even worsening ratio, because land good for wind, hydropower, biomass, or solar power may get used first.

## News Flash:

(In contrast to the above by Mr. Ausubel, in a study by the University of Sydney, Australia that focused primarily on Nuclear power, hydropower is shown to have the lowest greenhouse gas emissions when you consider energy production on a life cycle basis – the right analysis for any power production facility. The table below summarizes the results of the study. The link to the full study report is: **http://www.pmc.gov.au/umpner/docs/commissioned/ISA_report.pdf** )
(Hint: Hold down the Ctrl key and click on the link.)

July 30, 2007

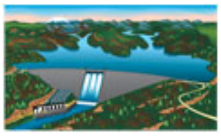
### Energy sources compared on lifecycle CO2 and energy intensity

**A 182 page pdf from Australia that befores a detailed analysis on the CO2 generated for the full life cycle of different energy sources and compares energy sources based on energy intensity**

| Electricity technology | Energy intensity ($kWh_{th}/kWh_{el}$) | Greenhouse gas intensity (g $CO_2$-e/$kWh_{el}$) |
|---|---|---|
| Light water reactors | 0.18 (0.16 – 0.40) | 60 (10 – 130) |
| Heavy water reactors | 0.20 (0.18 – 0.35) | 65 (10 – 120) |
| Black coal (new subcritical) | 2.85 (2.70 – 3.17) | 941 (843 – 1171) |
| Black coal (supercritical) | 2.62 (2.48 – 2.84) | 863 (774 – 1046) |
| Brown coal (new subcritical) | 3.46 (3.31 – 4.06) | 1175 (1011 – 1506) |
| Natural gas (open cycle) | 3.05 (2.81 – 3.46) | 751 (627 – 891) |
| Natural gas (combined cycle) | 2.35 (2.20 – 2.57) | 577 (491 – 655) |
| Wind turbines | 0.066 (0.041 – 0.12) | 21 (13 – 40) |
| Photovoltaics | 0.33 (0.16 – 0.67) | 106 (53 – 217) |
| Hydroelectricity (run-of-river) | 0.046 (0.020 – 0.137) | 15 (6.5 – 44) |

Here is the chart that summarizes the comparisons. Notice the ranges in the brackets. Those are the range across which the values could fall depending upon location and other variable factors

Nuclear power is about 10-20 times better for CO2 than coal or natural gas.
Nuclear power is better than photovoltaics for CO2 and three times worse than wind and four times worse than hydroelectric.



# Dams

(A story on the demise of another dam and another hydro project. The hydro community isn't winning the battle.)

## From dam to dust - Explosives blast away at Marmot Dam, to free the Sandy River for fish

By Susan Palmer, The Register-Guard, July 25, 2007

SANDY, OR - It took 4,000 pounds of explosives to turn the top 4 feet of the Marmot Dam into rubble on Tuesday. The satisfying kaboom shook the ground 1,000 feet downstream where about 150 people had gathered to watch the beginning of the end of the Bull Run Hydroelectric Project, the largest dam removal effort in Oregon history. "I like that," said Don Mench, as four track hoes began moving toward the dam to start carting away the busted concrete and bent rebar. Mench, a member of the Sandy Basin Watershed Council, had been looking forward to this day for almost a decade, back when a unique coalition began contemplating the decommissioning of the 94-year-old system.

Owned by Portland General Electric, Bull Run provides 22 megawatts of power, enough for about 10,500 homes. The utility serves almost 800,000 customers in Oregon. PGE announced in 1999 that it would take out the dam, after concluding that demolition would be more economical than maintaining the project and upgrading it to improve protection for fish. The utility developed the plan with a consortium of 23 federal and state agencies including the U.S. Forest Service, the National Marine Fisheries Service, and the Oregon Department of Fish & Wildlife as well as environmental and recreation groups that included the watershed council, Trout Unlimited, Western Rivers Conservancy and the Native Fish Society. The cooperation among groups kept the project out of costly and time-consuming litigation. Mench, who lives upstream of the dam in Zigzag, said the process involved a lot of give and take. "There was some pushing and prodding and outside-the-box thinking," he said. "It's been worth it."

**Cost of fish-friendly upgrades**

As hydroelectric dams come up for recommissioning, the utilities that own them are crunching the numbers. When does it make sense to upgrade a project and when does it make sense to let a river run wild again? Bull Run is a complex system. Marmot Dam blocks the Sandy River 40 miles east of Portland and diverts a significant portion of the river through a series of canals and tunnels northwest to the Little Sandy River where a dam and a wooden flume divert the flow about three miles west to Roslyn Lake. Then the water runs through a powerhouse that releases the flow into the Bull Run River, which rejoins the Sandy, eventually flowing into the Columbia River. The Little Sandy River dam and powerhouse also are slated to be removed as part of this project. Maintaining the complex canals and flumes and upgrading the fish passage would have been prohibitively expensive, PGE spokesman Mark Fryburg said. The river is home to runs of spring chinook, winter steelhead and coho salmon, all threatened fish under the Endangered Species Act. The Eugene Water & Electric Board, the cooperative that provides water and power to Eugene, is in the process of relicensing its Carmen-Smith Hydroelectric Project on the McKenzie River and faces millions of dollars in upgrade costs for improved fish passage. While some environmental groups had suggested that EWEB begin thinking about decommissioning that dam, the numbers don't add up, said EWEB spokesman Lance Robertson.

**EWEB looks at numbers**

Carmen-Smith - three dams and reservoirs, two tunnels and two power plants near the McKenzie River's headwaters - was built in 1963, Robertson said. It's in much better shape than Bull Run and supplies about 12 percent of EWEB's energy needs at a cost of about $20 per megawatt hour. Getting rid of the dam and buying that power on the open market would cost anywhere from $45 to $80 per megawatt hour, Robertson said. "If the city of Eugene wanted to do that, if there were a ballot measure and people voted to do that, we would do that," Robertson said. "We're owned by the public." The math for PGE penciled out differently in part because Bull Run provides power for less than 2 percent of the utility's customers, power that will be replaced by wind farms and other PGE projects designed to meet growing demand, Fryburg said. Tuesday's demolition is just the beginning of a yearlong $17 million project. It will take the rest of the summer to remove the Marmot Dam - a 47-foot high 345-foot long, 55-foot thick structure - with heavy equipment hauling away the rubble, followed by another round of blasts to loosen the next layers of concrete. As the

track hoes began scooping up the debris on Tuesday, visitors walked the bridge that crosses the river just below the dam, peering down into the water where muscular 15- to 25-pound spring chinook could be seen swimming upstream in the murky water. Unlike the clear-running McKenzie River, the Sandy flows from glaciers on Mount Hood. As summer temperatures rise and the glaciers melt, they send silt down into the river, which the fish have adapted to, said Bob Lohn, regional administrator for the National Marine Fisheries Service. The silt helps the juvenile fish in particular, making it harder for predators such as the indigenous northern pike minnow to see the young salmon. While a fish ladder has allowed salmon access to the upper basin, it's not the ideal situation for the fish, Lohn said. People normally think of salmon as heading continuously upstream once they return from the ocean to spawn, but fish like to move around in a system, both upstream and downstream, searching for suitable habitat, he said. With the dams gone, the fish will have unimpeded access to 90 miles of streams in the Sandy River watershed. And when the dam on the Little Sandy River comes out next year, that will add 10 miles of stream access the fish haven't been able to use in almost a century.

**Riverside property preserved**

PGE will donate 1,500 acres of land it owns along the river to the Western Rivers Conservancy, which will turn it over to the Bureau of Land Management for permanent protection. The conservancy group hopes that it's the beginning of a conservation corridor along the river, enhancing the area for recreation, fishing, rafting and kayaking. Among the officials and reporters on hand, there were plenty of unofficial folks, including Don Selden, a retired PGE employee. Selden regularly visits the dam as a volunteer escorting students who are studying the river. Usually, it's a quiet place, just the sound of the river and forested slopes harboring elk, black bear and cougar. "After coming here through rush hour traffic, it's so serene," he said. It will be months before any changes become apparent. Currently, a temporary earthen dam holds the river in check behind the concrete barrier. The concrete should all be gone by September. Sometime in November, once the rains start and the water flow gets up to around 2,500 cubic feet per second, that earthen dam will give way. And the Sandy will flow free once again.

(Here's another benefit of dams from the "other" Hoover Dam.)

## Hoover Dam - Westerville, Ohio

Waymarking.com, 7/30/07

The concrete masonry dam is located on Big Walnut Creek forming the Hoover Memorial Reservoir. The reservoir creates a water source for the city of Columbus, and also provides much recreation. Several parks line the reservoir, where wildlife is abundant. Fishing and boating are permitted on the reservoir, with several boat ramps and fishing access areas. The water in the reservoir remains the coldest among the other two nearby reservoirs. It is typically in the high 60's to low 70's (f) in the middle of summer. The dam itself is open for visitors to walk across. Many times you will see local high school sports people running up and down the stairs here. Near the dam is a disc golf course, and several nature trails to enjoy as well.

The main use is for Water Supply (Drinkable) for the city of Columbus, Ohio Hoover Dam is located near Westerville, Ohio. It holds 20.8 billion gallons of water and has a surface area of 3,272 acres. The dam is, however, much smaller than the better-known Hoover Dam on the Colorado River. The dam was dedicated in 1/10/1955. It was named for two brothers, Charles and Clarence Hoover, to honor their careers with the City of Columbus Waterworks.

(For more on water supply dams: **http://www.waymarking.com/cat/details.aspx?f=1&guid=bde15fc9-bd90-4dc1-8c46-9b0b48ba10f5**)

## Chemical, dam safety neglected in N.J.

**August 1, 2007,** By ALEX NUSSBAUM, NewJersey.com

As many as 70 percent of New Jersey's dams have missed safety inspections and more than a quarter of the state's businesses haven't complied with a law requiring them to report the hazardous chemicals they store, according to a new report. In a stinging assessment, New Jersey's state auditor found the state's environmental agency was unable to track hazards adequately because it is understaffed and too reluctant to punish violators. The audit found the most hazardous private dams had missed nearly half of their annual or two-year inspections. The record for state-owned dams was even worse. As for the chemical reports, State Auditor Richard Fair found environmental officials had collected only $21,000 of a possible $10 million in fines in the last two years from companies that failed to report the chemicals they had on site. The Department of Environmental Protection was doing little to track which surveys were filed with local fire departments and even less to determine whether the reports were accurate, the audit noted. "In today's world, potential acts of terrorism magnify the importance of this information," warned Assistant State Auditor Stephen Eells, the report's author.

The DEP, which oversees both the chemical and dam programs, acknowledged that staffing problems had hampered its efforts. But the agency promised to crack down on scofflaws -- and said they were improving on dam inspections. But one environmental activist said the audit showed that public safety was suffering from years of staff and budget cuts at the DEP. "What's happened is there's been a lack of investment in DEP over the last dozen years," said Jeff Tittel, director of the state Sierra Club. "We've allowed the DEP to atrophy." The audit, requested by state legislative leaders, found inspection rates had actually worsened in the three years since the program was last reviewed.

State law requires safety reviews annually or every other year at the 567 dams classified as "high" or "significant" hazards -- those where a breach could cost lives or cause major property damage. But as of Jan. 4, there was no record of inspections at 60 percent of those structures, the audit found. Among all 1,700 dams in New Jersey, 70 percent were out of compliance. "It's a major concern," said Albert Evangelista, who directs Passaic County's Fire Academy and oversees emergency management in Pompton Lakes. "These dams will be fine probably until the envelope is pushed [in a storm] and then you're going to see dam failure. "It could be catastrophic or it could be minimal, but nobody wants to live below that dam that they're rolling the dice on." After heavy rains burst four dams in Sussex County in 2000, state officials promised to mount an aggressive dam safety effort. In 2003, state voters in a referendum approved $15 million for repairs at state dams and $95 million in loans for private and public dam owners in Ringwood, West Milford and other towns.

The DEP told the auditor's office that "staff constraints" as well as a lack of statutory authority contributed to the inspection backlog. The agency did not immediately respond to a call seeking comment Tuesday. In a response attached to the audit, DEP Commissioner Lisa Jackson said new rules taking effect next year will allow it to better police dam owners. The department, she noted, has already forced nine dam owners around the state to lower water levels or take other measures to reduce the risk of an accident. Inspections are "but a part of [DEP] efforts to ensure the safety of New Jersey's dams," she wrote. Her rebuttal also included what she said were updated figures that showed far fewer hazardous dams out of compliance -- about a quarter by the end of June. That, however, included owners who had been given a one-year grace period because "the dam is known to be safe but the owner's engineer is anticipating or completing" inspections. The audit also found gaps in compliance with the state's Community Right to Know program, which requires businesses from gas stations to chemical plants to report the hazardous materials they store on site to state, county and local officials.

The intent is to give emergency responders an idea of what they may face in case of a problem at the company. But of 26,000 reports due in 2004, 5,700 were not filed. Of 15,000 due the following year, 4,400 were missing. Yet the DEP issued only 325 violations during that period, levying only $21,000 in fines, the audit found. The department also has no system for ensuring that local officials get copies of the report, auditors said. The DEP again blamed "staff constraints" and said it hopes to add two more inspectors to its program. Jackson said she would follow the auditor's recommendation that the department hand out more fines, but she also noted that many were small businesses that couldn't afford hefty penalties.

# Hydro

(The Meldahl project has been on the drawing boards for at least 40 years and again has been shelved.)

## Plan for Meldahl Dam hydroelectric facility shelved

By WENDY MITCHELL, The Ledger Independent, July 24, 2007

BROOKSVILLE, KY -- Just over a year after E.ON U.S., parent company of Kentucky Utilities, made public a plan to apply for the license to build a hydroelectric generating facility at Meldahl Dam in Bracken County, the company submitted a letter to the Federal Energy Regulatory Commission withdrawing its application for the license. The information is so new even the E.ON corporate Web site still lists the Meldahl site as a current project. E.ON U.S. official Laura Douglas confirmed Tuesday the company has withdrawn its application to pursue the license necessary to build at the Ohio River site. The letter to FERC was dated July 10. Though Augusta was bumped from the competition by FERC in 2006, citing a long history of not getting the project started, the city of Hamilton, Ohio continued with its effort to secure use of the site for hydroelectric energy production, along with E.ON U.S. According to E.ON U.S. officials, negotiations with the city of Hamilton had been ongoing for the past year. A joint effort is still possible since Hamilton officials have also filed for the license and are allegedly trying to meet the FERC requirements.

"It is not a dead issue. We are still open to a cooperative effort if that's what they (city of Hamilton) want to do," said Cliff Feltham, Kentucky Utilities/E.ON spokesperson. "The city of Hamilton may have the inside track on getting the license. Our experience is that municipalities are favored." The withdrawal filing was not initially encouraging to Bracken County officials who were under the impression E.ON was intending to begin core sample drilling at the site in the next week. Getting the project under way was what Bracken officials had hoped for. "We are very disappointed. It would have been a major plus for Bracken County," said Gary Riggs, Bracken County judge-executive. Though the original project appeared to be focusing on electric distribution into Ohio, because the river is under the jurisdiction of Kentucky, Bracken County would still receive tax base money from any project at the dam, said Riggs. According to FERC representative Celeste Miller, the city of Hamilton has been given an extension until Aug. 16, to supply a statement of, "...how your plans for developing the proposed Meldahl Hydroelectric Project are as well or better adapted than E.ON U.S. Hydro 1 LLC's (E.ON) plans to develop, conserve and utilize in the public interest the water resources of the region." According to FERC regulations, the E.ON U.S. request for withdrawal will not be official until at least July 26, 2007, opening the window for Hamilton to proceed with licensing application paperwork. Regulations have to be followed, said Miller. "No entity filed an opposition to E.ON's withdrawal before the July 17 deadline for such filings," said Miller. Calls to the city of Hamilton by The Ledger Independent were not returned.

## News Release: July 19, 2007

## Commission announces pilot project licensing process for new hydropower technologies

The Federal Energy Regulatory Commission today announced it will convene a technical conference on licensing pilot projects for ocean energy hydro technologies to discuss a staff proposal for a process that could complete licensing in as few as six months. Commissioner Philip Moeller will lead the conference, to be conducted Oct. 2, 2007, in Portland, Oregon. It is the latest in a series of measures the Commission has undertaken since 2006 to address intensifying interest in the development of ocean, wave and tidal, or hydrokinetic, technologies. “Perhaps the greatest barrier to realizing the potential of new hydrokinetic technologies is that they are unproven,” Chairman Joseph T. Kelliher said. “These technologies must be demonstrated before large scale commercial deployment can occur. Today we take a major step to reduce the barriers to the success of these new hydro technologies, by proposing a simplified licensing process

suitable for licensing pilot projects." "This new generation of hydrokinetic technologies will bring hydropower to the forefront of the renewable energy debate," Commissioner Moeller said. "It is generating a lot of enthusiasm throughout the country, particularly in coastal states like my home state of Washington. FERC wants to harness this enthusiasm by exploring ways to reduce the regulatory barriers to realize the amazing potential of this domestic renewable power source–one that can help meet renewable portfolio standards established by states."

The goal of the Commission staff proposal is to complete the full project licensing process in as few as six months, provide for Commission oversight and input from affected states and other federal agencies, and allow developers to generate electricity while conducting the requisite testing. The process would be available for projects that are 5 megawatts or smaller, removable or able to shut down on relatively short notice, located in waters that have no sensitive designations, and for the purpose of testing new hydro technologies or determining appropriate sites for ocean, wave and tidal energy projects. At its December 2006 conference on hydrokinetic energy, the Commission learned that these technologies are in a developmental phase, which presents significant risks for developers due to a lack of information about engineering performance and environmental effects, and limited access to financing. In response to the Commission's February 2007 Notice of Inquiry on preliminary permits for the new technologies, at least 14 entities addressed the need for a pilot program licensing process. Comments included recommendations that FERC address the unique characteristics of pilot projects by: permitting connection to the national grid both for study purposes and to generate revenue; implementing a simpler, faster review process; requiring site restoration following experimental deployments; and requiring a license period of five years rather than 30-50 years. For more information on hydrokinetic energy, go to:
**http://www.ferc.gov/industries/hydropower/indus-act/hydrokinetics/energy-pilot.asp**

(The following is a comment sent regarding the article below:
*"This could only happen in California. First, no hydro above 30 MW is renewable under the State's RPS. Now, how ridiculous is that? Hydropower is solar energy through the hydrologic cycle. Now, an efficiency upgrade at a hydro project is not renewable. Most of the renewable energy in California is in fact large hydropower, but the State chooses to ignore this valuable resource, without which the State would have a serious energy crisis and the cost of power would be even higher than the current costs. The ignored hydro makes up 19 % of the State's renewable energy. All other renewables make up less than 11 % of the State's renewables, with small hydro at 2.1 % and wind at only 1.8 %. Any increase in renewable energy should be included. Isn't the reduction of greenhouse gases the whole goal and anyway that's accomplished should be treated accordingly when it comes to incentives, even large hydro. California needs a wakeup call. And organizations such as the Planning and Conservation League and the Sierra Club should be condemned for their warped sense of what's good for the environment."*

The link to the site for comments is:
**http://www.sfbg.com/entry.php?entry_id=4178&catid=4&volume_id=254&issue_id=308&volume_num=41&issue_num=44**. (Note: You need to register to send a comment but it's free.)

## Dam scam

**Are efficiency upgrades renewable energy?**
**BY AMANDA WITHERELL, July 31, 2007,** San Francisco Bay Guardian

A bill to have efficiency upgrades at large hydroelectric dams be considered renewable energy is floating through the State Legislature, with very few members swimming upstream against it. The legislation by Assembly member Sam Blakeslee (R–San Luis Obispo) is supported by Pacific Gas and Electric Co., which indicated it could count an additional 460 gigawatt-hours toward its renewable portfolio standard if the rule were changed. The utility company delivered a total of 84,310 GWh of energy last year, and by 2010 it will be required to provide 20 percent of that from renewable sources. Small hydroelectric facilities of 30 megawatts or less are considered renewable. The bill received unanimous assembly approval, but opponents say efficiency upgrades at dams are or should be occurring anyway and don't deserve the coveted "renewable" title. "California's RPS program was established to promote generation of new renewable energy sources. The RPS program was not designed to simply reward actions that would have occurred without the program," the Planning and Conservation League wrote to the Senate Natural Resources Committee. The Sierra Club also opposes the bill, as does Sen. Carole Migden, whose press secretary, Tracey Fairchild, said, "It doesn't ultimately create one megawatt of true renewable energy."

## Water

### Remembering the Big Thompson Flood

**144 people died in disaster on July 31, 1976**

31 Jul 2007, My Fox Colorado

by CHRIS TOMER, Meteorologist

*A destroyed house sits atop a destroyed bridge following the flood.*

THORNTON, Colo. -- Colorado's worst natural disaster occurred 31 years ago. The Big Thompson Flood killed 145 people on July 31st, 1976. A nearly stationary thunderstorm sat over Big Thompson Canyon and let loose a deluge of rain: 14 inches in 4 hours. A two-story wall of water thundered downriver washing everything away in its path. Erik Nilsson is the Larimer County Emergency Manager and was a first responder after the flood. "I realized after I started seeing the bodies that they were all naked....the floodwater had ripped clothes off of them."

Warning signs now greet motorists at the head of the canyon. One such sign asks folks to climb canyon walls during flood events. The history of this canyon still haunts Steve Dodder who was also an emergency responder. "The awesome power of the water...the total destruction of everything that got in its way was absolutely incredible and even though it was 30 years ago I can't forget the sight of it all," Dodder said. Today, roads and bridges are beefed up and ready for future flood events. Steel and concrete construction has replaced older wooden construction washed away in 1976.

## Environment

### China's Massive Dam Changing Weather

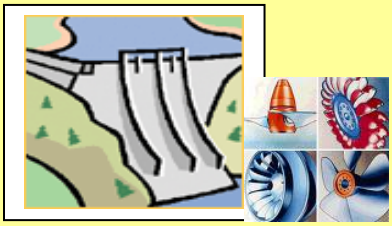
Engineering News, July 19, 2007, Larry O'Hanlon, Discovery News

June 22, 2007 — Two years before its completion, the world's largest dam is already changing the local weather, say scientists studying the Three Gorges Dam on China's Yangtze River. Both modeling and actual meteorological data suggest that the reservoir is cooling its valley, which is causing changes in rainfall. "In China there are a lot of people who complain because of the construction of the dam" and specifically about changes in local weather, said climate modeler Liguang Wu of NASA's Goddard Space Flight Center and the University of Maryland in College Park. To find out if the dam was really to blame, Wu and his colleagues collaborated with Chinese scientists to study the changing climate around what will soon be a 401-square-mile reservoir of more than 5 trillion gallons of water and a hydroelectric power plant 20 times more powerful than the Hoover Dam. The researchers combined satellite data and ground weather stations to create a computer climate simulation, which they then compared to what has already happened in recent

years. The construction of the dam and changes to the land and vegetation around it have been recorded for years by the NASA-US Geological Survey Landsat satellites. They show steady progress from 2000 to today, with the biggest changes in 2004, when the reservoir was partially filled and water backed up into many side canyons. By last summer the main wall of the dam was done and the water in the reservoir was two miles across. "Frequently people tend to use these (Landsat images) in a time series," said Jeff Masek a Landsat scientist at NASA. Because Landsat satellites have been operating since 1972, there are a lot of human changes to be seen, he said.

What's more, since the data is available to the world, many countries, like China, can use them to get a different view of what's happening on their own land. More recently, other NASA satellites have been watching the weather changes, said Wu. The Tropical Rainfall Measuring Mission (TRMM) provided some data to estimate changes in rainfall, while the Terra and Aqua satellites kept track of surface temperatures. Among the surprise weather changes has been the increase in rainfall between the Daba and Oinling mountains, said Wu. The rains come from a "lake effect" intensification of precipitation, like that seen around the Great Lakes of North America. The lake effect happens when already moist air picks up more moisture as it crosses over a warm body of water, then rains or snows it out quickly upon reaching the shore. "It's not totally bad news," Wu said of the added rain. Some people want the added moisture. On the other hand, as the water was rising in 2003, some areas around the dam saw less rainfall, Wu said. In all, a whopping 62 square miles of land are expected to see weather effects from the dam, he said. That's more than ten times the area originally predicted, he said. In a way, he said, Three Gorges is a great laboratory for studying how well local climate changes caused by very local land-use changes can be detected and distinguished from larger-scale global climate change. "To me it's a scientific issue," Wu told Discovery News. Wu and his colleagues published their work in a recent issue of *Geophysical Research Letters*. At almost 4,000 miles, the Yangtze is the fourth longest river in the world, discharging into the sea about twice the water of the Mississippi. For as long as people have kept records, the Yangtze has been in the habit of periodically overflowing its banks and flooding vast areas. Controlling that ancient threat, along with producing electricity, are the main goals of the Three Gorges Dam.

[i]This 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.



# Some Dam – Hydro News and Other Stuff

i


**8/10/2007**

**Quote of Note:** This could be said about dams, bridges, and all infrastructure:
*"Things have reached such a state of affairs that the first duty of every intelligent person is to pay attention to the obvious." - - George Orwell*

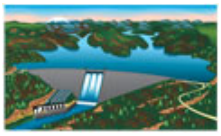
## Other Stuff:

(John Dingell should retire! He acts like a worn out tire!)

### House to Leave Fuel Efficiency Out of Debate on Energy Bill

By JOHN M. BRODER, August 2, 2007, The New York Times

WASHINGTON, Aug. 1 — The House of Representatives will open debate on a complex package of energy legislation on Friday, but strict new auto mileage standards will not be part of the discussion, Congressional leaders said Wednesday evening. Speaker Nancy Pelosi, Democrat of California, decided not to allow a vote on an amendment requiring cars and light trucks sold in the United States to achieve a fleet average of 35 miles per gallon by 2019. The measure, similar to one the Senate passed in June, drew fierce opposition from automakers and dealers, the United Automobile Workers and, crucially, Representative John D. Dingell, the Michigan Democrat who is chairman of the Energy Committee. A second and much weaker fuel efficiency measure for cars and trucks that was endorsed by the auto industry and Mr. Dingell also will not come to a vote, officials said. The larger package of energy provisions, including incentives for production of alternative fuels, new rules for energy efficiency for appliances and buildings, and millions of dollars in new research on renewable sources of power, will be debated beginning Friday. It is expected that an amendment requiring utilities to produce a certain percentage of their electricity from renewable sources like wind or solar power will be offered on the floor. Ms. Pelosi made the tactical decision to prevent a vote on the mileage provision, popularly known as CAFE, for corporate average fuel economy, to avoid a nasty fight among fellow Democrats, who are deeply divided over how far to push struggling Detroit automakers to improve the efficiency of their vehicles. But because a nearly identical CAFE amendment passed the Senate, there will be another chance to enact mileage standards when the House and Senate versions are reconciled in conference later this year. Representative Edward J. Markey, Democrat of Massachusetts, sponsored the stricter auto mileage amendment and agreed to have it withdrawn after meeting with the speaker late Wednesday afternoon. “This strategy preserves unity in the House and the prospect of a strong 35 m.p.g. standard in conference,” he said in an interview Wednesday evening. “I believe we have a majority in the House willing to support my amendment, and I believe it will be part of the legislation that ultimately passes this Congress.”



# Dams

(The catastrophic failure of the I-35W Bridge in Minnesota reminds us once again that the Country's infrastructure is in need of attention. The excerpts below from an article highlight some of the problems.)

## Report: 34 Percent of Major Roads Are in Poor, Mediocre Condition

ABC News, 8/2/07

**46,000 Miles of Highway Are Half a Century Old**

**Infrastructure Woes**

Highway engineers say the neglect of America's infrastructure costs lives every day. More than 40,000 people die in highway accidents each year. Road conditions, the engineers say, are a factor in almost one-third of those deaths. America's most important road system — 46,000 miles of interstate highway — is now half a century old. A report card two years ago from the American Society of Civil Engineers said that 34 percent of major roads are in poor or mediocre condition. And that's not all.

The civil engineers say the number of unsafe dams has risen by more than 33 percent in the past two years, and in that time, there have been 29 dam failures. Power capacity isn't keeping pace with demand, and the power grid needs $10 billion a year invested over the next five years. And, according to civil engineers, 27 percent of U.S. bridges are structurally deficient.

**(ASCE Grade & Assessment on Dams-2005)**

**Dams** (Grade - D) Since 1998, the number of unsafe dams has risen by 33% to more than 3,500. While federally owned dams are in good condition, and there have been modest gains in repair, the number of dams identified as unsafe is increasing at a faster rate than those being repaired. $10.1 billion is needed over the next 12 years to address all critical non-federal dams--dams which pose a direct risk to human life should they fail. ...

---

(ASCE Grades for all infrastructure – not a pretty picture, huh?)

| | | |
|---|---|---|
| Aviation - D+ | Dams – D | Drinking Water - D- |
| Energy – D | Hazardous Waste – D | Navigable Waterways - D- |
| Public Parks & Rec. - C- | Rail - C- | Roads – D |
| Schools – D | Solid Waste - C+ | Transit - D+ |
| Wastewater - D- | | |

**********

(ASCE says over $10 Billion is needed and Legislation is for little more than $200 million. OK, so 1/50th is better than nothing.)

## NOW LET'S LOOK AT THOSE DAMS AND TUNNELS

ABC News, August 03, 2007

"IF YOU THOUGHT THIS WAS A THROWAWAY BILL, THINK AGAIN." According to CQTODAY that is what House Transportation and Infrastructure chairman Jim Oberstar, from the state of the bridge collapse, told his colleagues yesterday as they debated and approved a bill that would provide $202 MILLION over the next several years to help state and local governments REPAIR UNSAFE PUBLIC DAMS. The article says there are 80,000 dams in the United States and as many as 10,000 "ARE CONSIDERED AT HIGH RISK." Rep. Sam Graves told the publication that the program would be particularly important in the "NORTHEAST, WHERE OLD DAMS, ABANDONED BY COMPANIES DOT THE REGION." The same house subcommittee also approved a bill yesterday that directs the secretary of transportation to set up a program that trains "government employees to INSPECT HIGHWAY TUNNELS."

(Legislation)

The following is the legislation - HR 3224. As of August 2 no further action has been scheduled on the bill.

110th CONGRESS
1st Session

# H. R. 3224

To amend the National Dam Safety Program Act to establish a program to provide grant assistance to States for the rehabilitation and repair of deficient dams.

**IN THE HOUSE OF REPRESENTATIVES**

**July 30, 2007**

Mr. SALAZAR (for himself and Mr. KUHL of New York) introduced the following bill; which was referred to the Committee on Transportation and Infrastructure

---

**A BILL**

To amend the National Dam Safety Program Act to establish a program to provide grant assistance to States for the rehabilitation and repair of deficient dams.

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,*

**SECTION 1. SHORT TITLE.**

This Act may be cited as the `Dam Rehabilitation and Repair Act of 2007'.

**SEC. 2. REHABILITATION AND REPAIR OF DEFICIENT DAMS.**

(a) Definitions- Section 2 of the National Dam Safety Program Act (33 U.S.C. 467) is amended--

(1) by redesignating paragraphs (3), (4), (5), (6), (7), (8), (9), (10), (11), (12), and (13) as paragraphs (4), (5), (6), (7), (8), (9), (10), (12), (13), (14), and (15), respectively;

(2) by inserting after paragraph (2) the following:

(3) DEFICIENT DAM- The term `deficient dam' means a dam that the State within the boundaries of which the dam is located determines--

`(A) fails to meet minimum dam safety standards of the State; and

`(B) poses an unacceptable risk to the public.'; and

(3) by inserting after paragraph (10) (as redesignated by paragraph (1)) the following:

(11) REHABILITATION- The term `rehabilitation' means the repair, replacement, reconstruction, or removal of a dam that is carried out to meet applicable State dam safety and security standards.'.

(b) Program for Rehabilitation and Repair of Deficient Dams- The National Dam Safety Program Act is amended by inserting after section 8 (33 U.S.C. 467f) the following:

**SEC. 8A. REHABILITATION AND REPAIR OF DEFICIENT DAMS.**

(a) Establishment of Program- The Director shall establish, within FEMA, a program to provide grant assistance to States for use in rehabilitation of publicly-owned deficient dams.

(b) Award of Grants-

`(1) APPLICATION- A State interested in receiving a grant under this section may submit to the Director an application for such grant. Applications submitted to the Director under this section shall be submitted at such times, be in such form, and contain such information, as the Director may prescribe by regulation.

(2) IN GENERAL- Subject to the provisions of this section, the Director may make a grant for rehabilitation of a deficient dam to a State that submits an application for the grant in accordance with the regulations prescribed by the Director. The Director shall enter into a project grant agreement with the State to establish the terms of the grant and the project, including the amount of the grant.

(3) APPLICABILITY OF REQUIREMENTS- The Director shall require a State receiving a grant under this section to comply with requirements applicable to contributions of Federal funds under section 611(j) (9) of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5196(j)(9)), as in effect on the date of enactment of this section, in carrying out a project funded using amounts from the grant.

(c) Priority System - The Director, in consultation with the Board, shall develop a risk-based priority system for use in identifying deficient dams for which grants may be made under this section.

(d) Allocation of Funds- The total amount of funds appropriated pursuant to subsection (f)(1) for a fiscal year shall be allocated for making grants under this section to States applying for such grants for that fiscal year as follows:

(1) One-third divided equally among applying States.

(2) Two-thirds among applying States based on the ratio that--

(A) the number of non-Federal publicly-owned dams that the Secretary of the Army identifies in the national inventory of dams maintained under section 6 as constituting a danger to human health and that are located within the boundaries of the State; bears to

(B) the number of non-Federal publicly-owned dams that are so identified and that are located within the boundaries of all applying States.

(e) Cost Sharing- The Federal share of the cost of rehabilitation of a deficient dam for which a grant is made under this section may not exceed 65 percent of the cost of such rehabilitation.

(f) Authorization of Appropriations-

(1) IN GENERAL- There is authorized to be appropriated to carry out this section--

(A) $10,000,000 for fiscal year 2008;
(B) $15,000,000 for fiscal year 2009;
(C) $25,000,000 for fiscal year 2010;
(D) $50,000,000 for fiscal year 2011; and
(E) $100,000,000 for fiscal year 2012.

(2) STAFF- There are authorized to be appropriated to provide for the employment of such additional staff of FEMA as are necessary to carry out this section $400,000 for each of fiscal years 2008 through 2010.

(3) PERIOD OF AVAILABILITY- Sums appropriated pursuant to this section shall remain available until expended.

**SEC. 3. RULEMAKING.**

(a) Proposed Rulemaking- Not later than 90 days after the date of enactment of this Act, the Director of the Federal Emergency Management Agency shall issue a notice of proposed rulemaking regarding the amendments made by section 2 to the National Dam Safety Program Act (33 U.S.C. 467 et seq.).

(b) Final Rule- Not later than 120 days after the date of enactment of this Act, the Director of the Federal Emergency Management Agency shall issue a final rule regarding such amendments.

(Excerpts!)

## Kids' swimming holes run dry

**Campers have waited 3 years for the return of lakes rains washed away**

July 22, 2007, BY GABRIEL H. GLUCK, Star-Ledger Staff

When Brent Birchler opened the door to his cabin that unforgettable July morning three summers ago, what he saw was surreal: Lake Stockwell was empty -- 23 acres of pristine, glistening water gone. As the assistant camp director would soon discover, the three lakes that disappeared overnight from the YMCA Camps -- Ockanickon, Matollionequay and Lake Stockwell -- were only a fraction of the damage wrought by the more than 13 inches of rain that inundated parts of Burlington and Camden counties. All totaled, 21 dams failed and another 30 were damaged. In the three years that have passed since the night of July 12, 2004, when torrential rains in South Jersey toppled dams like falling dominoes, only a handful of the dams have been restored. Engineers working on two new dams in Medford Lakes are hoping the state Department of Environmental Protection will give the okay to start refilling the 23-acre Upper Aetna Lake and the 18-acre Lower Aetna Lake by the end of this month. But the rebuilding has been gradual and expensive, so costly that a number of the dams may never be rebuilt, said John Moyle, head of the DEP's Bureau of Dam Safety and Flood Control. When the dams on Upper and Lower Aetna lakes become fully operational, that will bring the total to six dams replaced since 2004, with plans for another six dams in the DEP's pipeline for design and permitting review, Moyle said.

Building dams to meet modern standards has become an extremely expensive undertaking. The Upper and Lower Aetna Lake dams, each nearly 300 feet long and 40 feet wide, will cost the borough of Medford Lakes $8.24 million, with the pain only slightly alleviated by the state's low interest loan program for dam repairs. Over at the Y camps, the dam needed to restore Lake Stockwell cost $1.3 million, said Fred Wasiak, chief executive officer for the three camps, which host more than 2,000 youngsters from across New Jersey every summer. It will require another $800,000 to rebuild the dam at Squaw Lake so that the Y can go back to the girls and boys camps having their own lakes, Wasiak said. But as for the third dam, which held back the waters of Papoose Lake, the funds just aren't there and that dam will likely never be rebuilt, he said.
The '04 storm was not the first time New Jersey has witnessed multiple dam collapses. In 1999, the rains from Hurricane Floyd took out three dams and caused significant damage to 21 others. The following year, a fierce rainstorm in the northwest corner of the state blew out four dams and caused significant damage to another 26. "There have been flash floods like this all around the state at various times. These localized events are out there," said New Jersey State Climatologist David Robinson.

But it is impossible to predict when and where these storms will hit. While a century could pass before a region sustains another debilitating rainfall, this past April, the Medford area witnessed rains that caused damage rivaling the storm of three years ago, said Medford Township Manager Mike Achey. The inevitability

of these storms is one of the reasons the state continues to push for further improvements and upgrades to dams across the state, Moyle said. Of the 200 "high hazard" dams in the state, 40 still require upgrades, while 120 of the 400 "significant hazard" dams also need work, he said. Meanwhile, a class-action suit filed on behalf of more than 200 families and businesses continues to make its way through the legal system.

## DEP must inspect dams

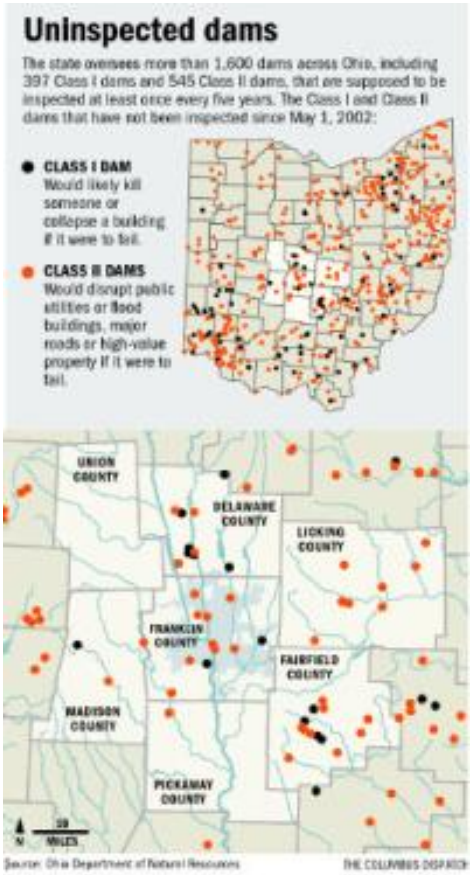
Courier-Post, Post Comment, August 3, 2007

It's critical that aging dams are inspected to lessen potential flood damage. A new report from the state auditor says the New Jersey Department of Environmental Protection is doing a woeful job inspecting dams around the state and collecting fines from companies that failed to report hazardous chemicals. Not collecting every fine, we might understand. DEP Commissioner Lisa Jackson says many violators of the hazardous chemical rules are small businesses that cannot afford to pay. That's reasonable. Still, if the DEP wants businesses to comply, it has to collect more than $21,000 of a possible $10 million in fines from the last two years. More concerning, however, is that the auditor found 70 percent of dams in the state have missed safety inspections. That's unacceptable. As the people of Lumberton, Vincentown, Medford and Medford Lakes know all too well, thanks to a huge rainstorm three years ago, it's critical that dams are routinely inspected and kept in good repair. The "1,000-year-storm" in July 2004 caused more than a dozen dams to fail in Burlington County. Those dam failures led to massive flooding that damaged or destroyed hundreds of homes and businesses. Jackson says her agency is understaffed. But with more than 270 employees, according to a search of state payroll records using the Data Universe database, we find it hard to believe the DEP is hurting that much for people to inspect dams. More of those workers with the appropriate work experience should be trained to do the job. Aging dams on lakes and streams have to be inspected regularly by the DEP. If they are not, all it can take is one heavy rainstorm to put homes, businesses and even lives at great risk.

# Who's minding the dams?

*August 5, 2007,* **BY GAVIN OFF,** *THE COLUMBUS DISPATCH*

The state has failed to inspect about 600 dams that could kill residents or cause significant property damage if they burst, records show. And the risk is increasing. As dams age, communities are popping up downstream, putting people, homes and public infrastructure in their paths. In all, the Ohio Department of Natural Resources hasn't inspected more than 1,200 state-regulated dams since 2002. The state's own recommendations say these dams must be inspected every five years. The state oversees 1,625 dams. Most are privately owned, and about half of those need repair or don't have plans in place in case of breaches. State officials blame budget cuts for inspection backlogs and lax enforcement. "It's a real challenge," said Mark Ogden, administrator of the state's Dam Safety Engineering Program. "Given the level of staffing we have, it's a thin line between making it and not." To compensate, the state has focused on large dams that could cause the most damage. Since 1900, nearly 1,600 people nationwide have died in dam breaks, the Association of State Dam Safety Officials says. The most-recent deaths occurred last year in Hawaii, when heavy rains broke the Kaloko Reservoir Dam, releasing more than 300 million gallons of water. Seven people were killed. "Dam failure is kind of like a nuclear failure, I think," said Lori Spragens, executive director of the association. "It rarely happens, but when it does happen, it typically is devastating."




### Falling behind

According to state records, central Ohio is home to 107 dams that were not checked during the recent five-year inspection cycle. The list includes 13 high-hazard, or Class I, dams. Among them are the 14-foot-tall Orchard Lake Dam on Columbus' Far East Side and the 23-foot-tall Lexington Glen Dam in Delaware. Both were last inspected in 2001. During

inspections, engineers look for potential problems such as cracks and erosion. They review the dam's spillways and measure its pool height and seepage rate. They also calculate how much water the structure could hold and safely pass through its spillways during a storm. The larger the dam, the more important the calculations become, experts say. Not all dams are big and potentially deadly. Many are small, remote Class III dams that pose no direct threat to people. But breaks could drain a community's drinking water, cause power failures or block traffic. Ohio is not the only state struggling to keep up with its dams. Of the 79,500 dams in the U.S., more than 3,500 are considered "unsafe," the American Society of Civil Engineers says. In 2005, the society gave the nation's dams an overall grade of D. The society estimates that repairing them would cost more than $10 billion. But the cost of even periodic inspections prevents many states from checking their dams, said Brad Iarossi, a dam expert and engineering society member based in Washington, D.C. "There's an enormous demand out there for funding," he said. "Like for most states, that task is just overwhelming."

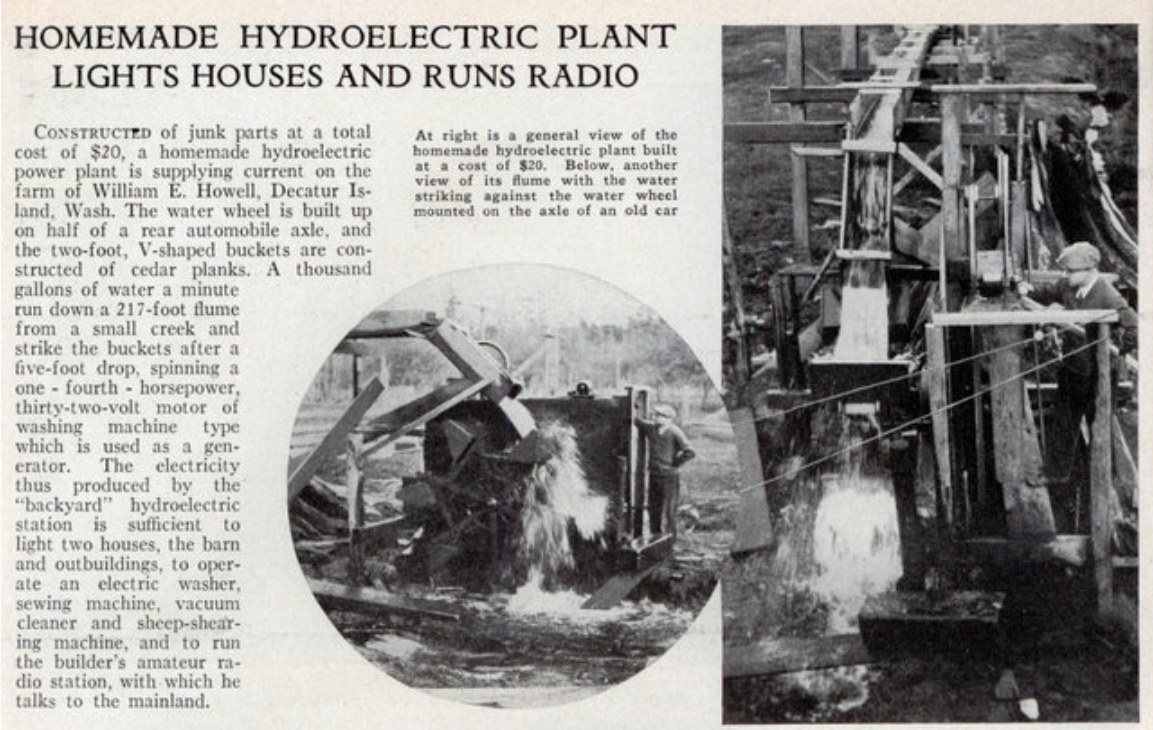
**Budget woes**

According to Ohio Department of Natural Resources reports, as many as 370 inspections were performed each year until 2002, when that fell to 130. Since then, the number has not been more than 100 in any year. The drop mirrors a decrease in the program's budget and staff. In 2001, the Ohio Division of Water, which oversees the dam safety program, had a $6.1 million budget. This year its budget is $5.4 million. The dam safety program's budget also has decreased. Although the state does not have specific numbers for past years, the program's 2007 budget is $1.48 million. The program has 13.5 full-time equivalent employees this year, down from 16.5 in 2001. California, which has fewer, albeit larger, dams than Ohio, has a dam safety budget of $9.3 million and 56 employees, said John Vrymoed, with the state's Division of Safety of Dams. Regular inspections in California became a priority after a dam collapsed in 1928 and killed about 450 people. Ohio started regulating dams in 1963 and began inspections in 1969 after several northeastern Ohio dams failed.

## Hydro (Sometimes, you run into a bit of hydro history.)

**HOMEMADE HYDROELECTRIC PLANT LIGHTS HOUSES AND RUNS RADIO (Sep, 1933)**

Source: Popular Science 9-1933



HOMEMADE HYDROELECTRIC PLANT LIGHTS HOUSES AND RUNS RADIO

CONSTRUCTED of junk parts at a total cost of $20, a homemade hydroelectric power plant is supplying current on the farm of William E. Howell, Decatur Island, Wash. The water wheel is built up on half of a rear automobile axle, and the two-foot, V-shaped buckets are constructed of cedar planks. A thousand gallons of water a minute run down a 217-foot flume from a small creek and strike the buckets after a five-foot drop, spinning a one - fourth - horsepower, thirty-two-volt motor of washing machine type which is used as a generator. The electricity thus produced by the "backyard" hydroelectric station is sufficient to light two houses, the barn and outbuildings, to operate an electric washer, sewing machine, vacuum cleaner and sheep-shearing machine, and to run the builder's amateur radio station, with which he talks to the mainland.

At right is a general view of the homemade hydroelectric plant built at a cost of $20. Below, another view of its flume with the water striking against the water wheel mounted on the axle of an old car

Constructed of junk parts at a total cost of $20, a homemade hydroelectric power plant is supplying current on the farm of William E. Howell, Decatur Island, Wash. The water wheel is built up on half of a rear automobile axle, and the two-foot, V-shaped buckets are constructed of cedar planks. A thousand gallons of water a minute run down a 217-foot flume from a small creek and strike the buckets after a five-foot drop, spinning a one-fourth-horsepower, thirty-two-volt motor of washing machine type which is used as a generator. The electricity thus produced by the “backyard” hydroelectric station is sufficient to light two houses, the barn and outbuildings, to operate an electric washer, sewing machine, vacuum cleaner and sheep-shearing machine, and to run the builder’s amateur radio station, with which he talks to the mainland.

## Environment

(Before you leave this subject, be sure to read the reply to this so-called editorial that is based on some very INCORRECT information.

The advocates for breaching the Lower Snake River Dams keep up the pressure, and the advocates for keeping the dams get little press. There seems to be far less in the media about keeping the dams, but that shouldn’t be a surprise??? Whatever happened to the “Save Our Dams” web site?)

### Editorial, Idaho Statesman - "Idaho's fish, Idaho's solution"

July 23, 2007 Idaho Daily Statesman

**Our View: The case for breaching is stronger than ever - Idaho Statesman**

Edition Date: 07/22/07

On July 20, 1997, the Idaho Statesman published its first editorial supporting the removal of four lower Snake River dams — a bold step that will best preserve Idaho's salmon, and best protect Idaho's water users. Ten years later, the dams remain in place. Idaho chinook salmon returns lag 34 percent behind their 1997 pace. Amidst a continuing drought, Idaho water users battle for a share of a finite source. What happened? And what happens next?

**1997**

"Four dams in Washington are holding Idaho's economy hostage. The dams on the Lower Snake River once provided cheap power and hope for economic prosperity for Lewiston. But now these dams are a burden on Idaho and the Northwest. "The region won't be set free until the salmon and steelhead these dams kill are recovered and balance is restored to our economy, environment and culture. "This can't be done unless the four Lower Snake River dams — Ice Harbor, Lower Monumental, Little Goose and Lower Granite — are breached." Those words are as true as they were in July 1997. The argument for breaching, if anything, is stronger. Idaho's salmon are a decade closer to extinction. Our economy remains hostage to outmoded out-of-state dams — and to the political gridlock that protects them, at the expense of the salmon.

**1998**

The Idaho Fish and Game Commission — a panel answering to Republican Gov. Phil Batt, and headed by Fred Wood, now a GOP state legislator from Burley — said returning the lower Snake River to its natural state offers the best solution for saving salmon and steelhead. The commission stopped short of endorsing breaching, but came refreshingly close. Said Keith Carlson, a commissioner from Lewiston: ‘‘We're loud and clear — the dams are the problem.'' The dams still are the problem. And there's a related problem: a speak-no-evil syndrome. Political leaders in Idaho, the state that would most benefit from breaching, refuse to acknowledge the damage inflicted by the dams.

**1999**

Fifty-eight miles upriver from the Atlantic Ocean, more than 2,000 miles from Idaho salmon country, the federal government made history. For the first time, the feds removed a dam for environmental purposes, against the will of its owner. Since the removal of the Edwards Dam, the Kennebec River has rebounded. Fish numbers are up. Water quality has improved. The words of then-Interior Secretary Bruce Babbitt proved prophetic. "What we are doing today is an act of creation. This is the beginning of something that is going to happen across the nation." Indeed, more than 200 dams have gone down since then, according to the conservation group American Rivers. Other removal efforts are in the works. Yet the lower Snake dams

remain in place, blocking Idaho's river ecosystem from returning to its full potential.

**2000**
In its final days in office, this same Clinton administration took no action on breaching the lower Snake dams. Instead, their salmon recovery plan established a series of three-, five- and eight-year milestones for the Bush administration. All this while acknowledging dam operations threaten salmon. U.S. District Judge James Redden rejected the Clinton plan. By punting to a Bush administration that would prove openly hostile to breaching, the Clinton White House squandered its last chance to advance salmon recovery in Idaho. And in 2009, the next administration, Republican or Democrat, is likely to assume control over Idaho salmon runs that remain in peril — after nearly two decades on the feds' endangered species list.

**2001**
For one brief moment, Idaho salmon enjoyed a renaissance. The counts at the Lower Granite Dam near Lewiston — the last dam standing between Snake River salmon and their Idaho spawning grounds — had never been higher. Rural Idaho communities such as Stanley and Riggins reeled in nearly a $90 million haul from the salmon fishing season. This has proven to be only a tease, for Idaho anglers and communities alike. Idahoans cannot plan on a salmon fishing season; opportunities come only when fish return in "surplus" numbers that exceed what's needed to sustain hatchery operations. Idaho communities cannot hope for the economic bounty that could come from annual fishing — some $544 million a year, according to a February 2005 study by Boise economist Don Reading. However, anglers and entrepreneurs won't pour this kind of money in small-town Idaho until, or unless, salmon return consistently. And Idaho salmon runs haven't come close to duplicating 2001.

**2002**
The study's findings seemed novel at the time: Global warming could cut into the West's snowpack, drying up the region's water supply just as growth increases the demand. The region could face an unsavory choice: Use water for hydroelectric production or use it to help spring and summer salmon run. Now, the Scripps Institution of Oceanography report seems prescient. The effects of climate change, such as reduced snowpack, are accepted enough that even Idaho Gov. Butch Otter admits to the possibility. The specter of global warming has even turned fisheries biologist Don Chapman into a breaching advocate; Chapman had spent a professional career arguing for dams, and against breaching, as a respected consultant for the hydro industry. Breaching doesn't just help Idaho salmon; it helps Idaho water users. As long as young salmon continue fighting around dams, with limited success, Idaho will face continued pressure to release more water to flush the fish around the dams. In a time of global warming, drought and growth, Idaho needs to assume greater control over its precious water.

**2003**
The Northwest's four governors — including then-Gov. Dirk Kempthorne — issued a series of salmon recommendations that accurately describe the region's politics. "The challenge for the Columbia Basin is to overcome the propensity for paralysis." Five pages later, the governors weaken their call to action by rejecting — flatly — the quickest path to salmon preservation. "Breaching the four lower Snake River dams must not be an option." Crafting a salmon solution will be inherently complicated, involving four states, Northwest tribes and an acronym amalgam of federal agencies. But when the region's leaders gather at the table, Idaho leaders need to remember one point: the lower Snake dams impact Idaho's fish. When they join neighboring states in opposition to breaching, they literally sell our fish down the river.

**2004**
Rather than talking about breaching, the feds instead tried to lower the bar for salmon recovery. They pushed a plan to allow them to count wild salmon and hatchery fish interchangeably in measuring salmon recovery. Even the feds acknowledged that some research points to "behavioral differences that result in diminished fitness and survival of hatchery fish relative to naturally spawned populations." Let's be clear. This wasn't about the science, and was all about the numbers. Weaker hatchery-raised fish are more abundant, comprising 80 percent of salmon runs, so their numbers do inflate salmon counts. Last month, a federal judge rejected the feds' numbers game, providing a lesson to the Northwest. It's not about numbers; it's about saving the wild fish that will save the species.

**2005**
It was bad enough for President Bush to stand at Ice Harbor Dam — as he did in August 2003 — and assert that his administration had taken significant steps to help salmon. It was preposterous for his administration to go to court and smugly suggest that these same man-made dams are simply part of the natural river system that salmon must navigate. Enter Redden, with a ruling that finally reopened the breaching debate. In a May 2005 ruling, the judge rejected the bogus premise of dams as a natural component of the river. He

also offered an honest appraisal of the state of salmon, 4 1/2 years into Bush's tenure. "It is apparent that the listed species are in serious decline and not evidencing signs of recovery."

**2006**
The dams' backers talk about what would be lost to breaching: a source of about 5 percent of the region's electricity, a slackwater river linking the Port of Lewiston to the Pacific. What if we pay for these tangible but replaceable amenities with both our salmon and our tax dollars? An unusual alliance of fish advocates and budget hawks advanced this argument last fall. In their study, titled "Revenue Stream," they argue that breaching would reduce the cost of salmon recovery efforts, saving taxpayers and Northwest ratepayers $2 billion to $5 billion over 20 years. This wasn't the first study to suggest the dams simply don't pencil out. It's another reminder that dam breaching is a national issue. In an era of federal deficits, how much use will Congress have for dams that indiscriminately chew up fish and swallow up tax dollars?

**2007**
At least 65 members of Congress want to have a sober discussion, based in facts, about the future of the dams. They have co-sponsored a bill to assign the General Accounting Office, the auditing arm of Congress, to study the pros and cons of breaching. They want to know how breaching would affect jobs, irrigation, transportation and energy. It's a start — years later than we would have hoped. But breaching, when it occurs, will bring tumultuous transition to the Northwest's economy. Change, however justified, is never easy. We believe a GAO study will not only make the case for breaching, but suggest the parameters for building a region without the four dams.

**2017**
Salmon embody endurance. Idaho's sockeye climb 6,500 feet and swim 900 miles to reach Redfish Lake — as their ancestors have for 10,000 years. But no sockeye have returned yet this year and only 349 have reached the Stanley Basin since 1997 — less than three dozen fish a year. A species that has survived for millennia is fast running out of decades. What will we be able to say about ourselves 10 years from now? Did we stand up to protect fish that are a symbol of everything that is best and most wild about Idaho? Or did we stand up for a symbol of a bygone dam-building age? We stand where we stood a decade ago and repeat what we said on July 20, 1997: "Breaching the four dams is not a step backward. It is a step forward." It is also, more than ever, a necessary step.

*"Our View" is the editorial position of the Idaho Statesman. It is an unsigned opinion expressing the consensus of the Statesman's editorial board. To comment on an editorial or suggest a topic, e-mail editorial@idahostatesman.com.*

(This is the other view of the issue with some interesting facts.)

## Jim Kempton: Breaching is not the step forward that the Statesman suggests

Idaho Statesman, 08/06/07

In an editorial published Sunday, July 22, the Idaho Statesman headlined the position that its decade-long case for breaching the four lower Snake River dams is stronger than ever. A conclusion as important as this should be based on better evidence than that presented to Idaho Statesman readers. Adult chinook survival through the four lower Snake River dams is much better today than a decade or more ago. Using PIT-tag technology and adult detection rates since 2002, NOAA Fisheries estimates that the per-dam survival rate for Snake River spring and summer chinook hatchery fish is approximately 99 percent. The survival rate for Snake River steelhead hatchery fish is over 98 percent. Fall chinook survival estimates are still being evaluated. Adult per-dam survival rates for wild fish are slightly higher. Estimated rates of in-river fish harvest and "straying" of fish have been excluded so that only dam passage impacts are represented in the survival percentages provided. Like Snake River chinook, downward trends in returning adult salmon numbers are noted in Washington and Oregon coastal rivers and British Columbia rivers where no dams are located. Major factors affecting the return of Columbia-Snake chinook that were not addressed by the Idaho Statesman include ocean life-cycle survival, including human and predatory harvest. Chinook salmon returning to fresh water after only one year in the ocean ("jacks") are used by fish managers as one of several estimating tools to predict the following year's run. If the jacks returning to Lower Granite dam this year are any indication, the Snake River spring chinook run in 2008 may exceed 250 percent of the previous 10-year average. On the yearling Snake River chinook out-migration side, NOAA Fisheries in-river survival estimates for juvenile spring and summer chinook indicate higher chinook survival in eight of the last 10

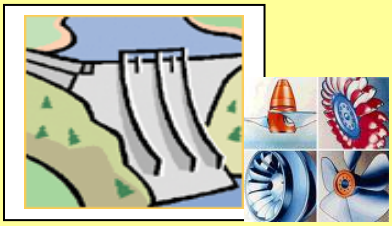
years than in 1964 when only four dams existed on the mainstem Columbia and Snake rivers between Idaho and the Pacific Ocean.

The Idaho Statesman states that rather than talking about breaching, federal agencies "pushed a plan to count wild salmon and hatchery fish interchangeably in measuring salmon recovery." It is worth noting that the court-influenced NOAA Fisheries listing policy does not count wild and hatchery fish interchangeably. Planning remains focused on recovery of fish in the wild. The real question is simply whether, or in what situations, hatchery supplementation programs may be of some benefit to recovery. In suggesting that lower Snake River dams are indiscriminately chewing up fish and swallowing up tax dollars, the Idaho Statesman over-dramatizes the hazard of juvenile fish passage through the lower Snake River dam complex. Most juvenile fish are guided away from turbines to avoid indiscriminately subjecting them to the hazards of turbine passage. The Idaho Statesman knows this, some readers may not. In the same light of disclosure, Bonneville Power Administration ratepayers are responsible for debt payments arising from construction of the hydrosystem, for hydrosystem operations costs, and for mitigation costs for fish and wildlife impacts caused by the hydrosystem. These are not tax dollars. Finally, the Idaho Statesman cites two economic benefit studies as part of its continued support for breaching the four lower Snake River dams. The Northwest Power and Conservation Council's Independent Economic Analysis Board has previously reviewed both studies and discredited both studies. In concluding, these comments are not intended to suggest that dams do not have adverse impacts on fish. On the other hand, breaching the four Snake River dams is certainly not an obvious step forward, as the Idaho Statesman suggests.

Jim Kempton is the Idaho council member on the Northwest Power and Conservation Council.

---

[i]This 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.



# Some Dam – Hydro News and Other Stuff

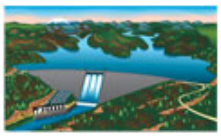
i


**8/17/2007**

**Quote of Note:** *"Our constitution protects aliens, drunks and U.S. Senators."- - Will Rogers*

## Other Stuff:

(A real stinking idea!)
http://www.renewableenergyaccess.com/rea/news/story?id=49621



## Dams

(This is a Federal dam and is inspected regularly, but this is probably the start of a flurry of dam inspections in light of the Minnesota bridge failure and in some cases overdue.)

### County dams undergo inspections

By JOSHUA BOWMAN, August 8, 2007, The Herald-Mail

WASHINGTON COUNTY, MD
Officials from the National Park Service and Bureau of Reclamation were out early Wednesday, snapping pictures and taking notes at Dam No. 4 in Sharpsburg. The work was part of a routine dam inspection, which is conducted by the two agencies every four or five years, according to Chris Danley, civil engineer with the Bureau of Reclamation. "We're basically out here making observations, looking at the dam to see if anything has changed or if there's anything we should be concerned about," Danley said. Danley said the inspection at Dam No. 4 and a later inspection Wednesday at Dam No. 5 in Clear Spring turned up "nothing unusual." "Everything seems to be OK," Danley said.

Inspectors were checking the dams, which are both more than 100 years old, for structural problems by examining water seeping through the dam. "The two biggest indicators of a problem would be water seepage in new locations or larger amounts of water coming through," Danley said. During the Dam No. 4 inspection, Danley said workers took pictures of spots on the face of the dam where water was seeping through the rock and will compare them to prior inspection reports to determine if anything has changed. Danley said some minor seepage is normal, but that it should not spread or increase. The inspection was coordinated with Allegheny Energy, which uses the dams for hydroelectric power generation. Early Wednesday, the water level at Dam No. 4 was lowered about a foot to expose the concrete ledge of the structure. Inspectors peered over the edge of a grassy walkway to examine the ledge for "any unusual cracks or abnormalities," Danley said. Inspectors then walked below the slackwater area and took pictures

of the dam's wall from about 30 feet away. Danley said separate inspections are scheduled every five or six years in which divers swim out to examine the downstream sides of both dams below the water's surface. "That allows them to look at things a little more closely. This is basically a surface inspection," Danley said. Both dams were built in the mid-1800s and were modified to provide hydroelectric power in the early 1900s, said William T. Justice, chief of interpretation for the National Park Service. Neither one has had any major structural problems since the 1930s, when Dam No. 4 was repaired after a flood, Justice said.

(Another benefit of dams)

## In search of whitewater

CITIZEN-TIMES, By Adam Behsudi, August 9, 2007

ASHEVILLE, NC — A drought that has left some rivers in Western North Carolina rain-starved and running dry this summer is sending some whitewater paddlers elsewhere in search of rapids. “The really good intermediate whitewater kayaking is more than three hours away,” said Asheville kayaker Chris Harjes. “We’ve all been mountain biking a lot.” Many of the major waterways in WNC are dam-controlled, allowing most commercial rafting outfitters to continue business uninterrupted and without any visible decline. But for Harjes, who likes to tackle some of the region’s more advanced, free-flowing rapids — it’s slim pickings. He said he spent a month this summer in the Sierra Nevada Mountains of California taking on a slew of fast rivers. Many others in the local paddling community, he said, are heading up to rivers in West Virginia to get their thrills. “It’s much worse for the advanced whitewater paddlers,” said Harjes, who works as an intensive care unit nurse. “The more advanced whitewater tends to require rain.” Most of WNC remains under a severe drought. The far western counties of Cherokee, Graham and Clay, and parts of Macon and Swain are in extreme drought conditions. Asheville is more than 9 inches below a total 29.17 inches of rain for the year to date, according to the National Weather Service’s Greer, S.C., office.

**Low flows**

Harjes said some rivers he frequents simply do not have enough water to float a boat. The Toxaway and Horse Pasture rivers that are part of the Jocassee watershed in Transylvania County are dry enough to walk part of the way down the middle of the rapids, he said. Other rivers including the West Prong of Little Pigeon and the Ravens Fork of the Oconaluftee River are impossible to paddle. “Neither of those rivers have run for more than a few hours since probably March,” he said. Boaters have been flocking to the Green River Narrows in Henderson County, one of the few technically challenging stretches of river that runs more constant. Duke Energy operates a hydroelectric dam that releases water into the Green River from Summit Lake near Tuxedo. “For anybody who’s been kayaking for a number of years, that river has been our saving grace,” Harjes said. Asheville kayaker Paul Bartholic said he has also been boating the Green River frequently and other rivers that are dam controlled. “At least we have some large rivers that no matter how low they get they’re always runnable,” he said.

**Consistent business**

Those big rivers are maintaining consistent business for the Nantahala Outdoor Center, headquartered in Bryson City, despite the ongoing drought. Half the rivers it runs, including the Nantahala, Ocoee, Pigeon and Cheoah, are dam controlled, said spokesman Charles Conner. “On the dam release rivers, there’s no difference and, if anything, I would say business is up,” he said. He said business increased 5 to 7 percent this season compared to last year. The free-flowing rivers the company operates on — the French Broad, Nolichucky and Chattooga — are low but large enough to maintain reliable levels and still accessible by groups wanting to raft them, he said. “The rapids are still just as steep,” Conner said. “They may be a little less pushy but at the same time they get a little more technical.” Daily releases from hydroelectric stations keep the river running at consistent levels. During peak daytime hours when most people are running air conditioning, Duke Energy releases the most water. That coincides with most rafting trips along the river. “We are maintaining generation during the daylight hours and that also happens to be the same time that generation supports public recreation needs,” said Fred Alexander, a spokesman for Duke Energy. He said the company had even reduced generation in May to keep lake levels and water releases constant throughout the summer. “There’s no reason for anyone to be worried about there not being enough water for recreation needs,” he said. Steven Matz, owner of Adventurous Fast Rivers Rafting in Bryson City, has also experienced brisk business this summer on their Nantahala River trips. “The releases have been consistent, which regulate the levels,” he said. “If anything, it might have helped our business because other rivers are dry.”

## Commission releases official safety report on Rio Grande dams

August 10, 2007, By Joe Hyde, Publisher, San Angelo Live

The International Boundary and Water Commission, United States and Mexico (IBWC), jointly with its technical advisors from the U.S. Army Corps of Engineers, Mexico's National Water Commission, and Mexico's Federal Electricity Commission, have released the results of the recent Five-Year Safety of Dams Inspection for four international dams located in the Rio Grande Basin. The inspectors determined that all four dams are generally well maintained and are currently capable of operating under normal conditions. The dams are also capable of operating under flood conditions, with the exception of Retamal Dam where modification of flood operating procedures is recommended. The IBWC is firmly committed to complying with the recommendations of the technical advisors and for this reason will conduct additional evaluation of areas of concern and take additional necessary actions, subject to the availability of funding. The reports present the technical advisors' recommendations with respect to dam safety, which the IBWC is currently working to address. In evaluating the dams, the inspectors considered risk-based Dam Safety Action Classes as follows:
**DSAC I** – URGENT AND COMPELLING (Unsafe)
**DSAC II** – URGENT (Potentially Unsafe)
**DSAC III** – HIGH PRIORITY (Conditionally Unsafe)
**DSAC IV** – PRIORITY (Marginally Safe)
**DSAC V** – NORMAL (Safe)
Based on the inspection, the experts have placed the IBWC dams in the following classes:

**Amistad Dam (DSAC II)** – Located near Del Rio, TX – Ciudad Acuña, Coahuila, the dam is used for water storage, flood control, and hydroelectric power. The classification is based largely on naturally-occurring sinkholes, which have existed since the dam was constructed, potentially affecting dam stability. The report recommends that a panel of geotechnical consultants be convened to further evaluate and study the stability of the dam foundation.

**Falcon Dam (DSAC III)** - Located near Roma, TX-Nueva Ciudad Guerrero, Tamaulipas, the dam is used for water storage, flood control, and hydroelectric power. The classification is based on a past history of seepage during higher water levels. The report recommends using current analytical methods to update the seepage and stability analyses so that IBWC can confirm or change the DSAC and undertake any repairs that may be needed.

**Anzalduas Dam (DSAC IV)** – This diversion dam located near McAllen, TX-Reynosa, Tamaulipas is used for flood control and to effect releases for downstream water users in both countries. The inspectors made various recommendations for maintenance and electrical upgrades, which are already underway. Additionally, sediment and sandbars near the dam should be removed
.
**Retamal Dam (DSAC III)** – This diversion dam located near Donna, TX-Rio Bravo, Tamaulipas is used for flood control. The classification is based on center gate oscillation during flood events, which has caused problems in regulating flow and has the potential to damage the gate and/or hoist components. The inspectors recommend that the gate lifting system be replaced with a different type of system. Until that work is accomplished, they recommend that flood operating procedures be modified to minimize use of the center gate. They further recommend that a sandbar downstream of the dam be removed.
The complete text of the Safety of Dams inspection reports is available online at:
http://www.ibwc.state.gov/PAO/CURPRESS/2005/Dams.pdf.

(Unbelievable! It looks like there is no consideration of good maintenance extending the life of a dam indefinitely, or that there are many dams much older than 50 years that are doing just fine because of good O&M. This is just a surrogate for dam removal advocacy.)

## Study: Aging dams a danger

August 09, 2007, Muskegon Chronicle, By Jeff Alexander

Hundreds of dams already choking Michigan rivers will become safety hazards over the next two decades unless the state creates a fund dedicated to removing some of the aging structures, according to a new study. There are at least 120 dams in Michigan in need of more than $50 million in repairs. By 2032, 93 percent of the 2,552 dams in Michigan will exceed their expected life span of 50 years, according to the study by Public Sector Consultants Inc., a Lansing think tank, and the Grand Rapids engineering firm of Prein & Newhof.

"This suggests that over the next 25 years, many of these dams will need to be removed or repaired due to their age," according to the study. "Selective removal of dams can be a simple, cost-effective way to alleviate both the financial burden and the environmental and safety problems old dams present."
Prepared for the Michigan Municipal League and the Michigan River Partnership, the study recommends establishing a state fund to pay for dam repairs and removals. Without that fund, "little progress will be made to avert this growing problem," the report stated. Mark Coscarelli, one of the study's authors, said it won't be easy to create a dam maintenance fund given the state's dire financial situation. He said the fund could be part of an environmental cleanup bond that may be proposed in the coming years to replace a 1998 bond that funded the $675 million Clean Michigan Initiative, which is nearly broke.
Thirteen other states have established funds to pay for dam removals. Removing obsolete, unsafe dams can eliminate a safety hazard, restore natural flows and reconnect the ecosystem of streams to the Great Lakes, Coscarelli said.

Removing dams is not technically difficult but can be socially challenging because the structures often are considered community landmarks, he said. Dam removals can restore natural river flows, improve fisheries and other aquatic life and reconnect miles of streams to the Great Lakes.
"These rivers are the arteries, the life blood, of the Great Lakes," said Coscarelli, a senior Great Lakes consultant for Public Sector Consultants. Officials who have worked on dam removals said the projects are not cheap, easy or quick. It took five years for officials at the Muskegon River Watershed Assembly to bring about the removal of the Hersey Dam, a dilapidated structure that disrupted a trout stream flowing into the Muskegon River north of Big Rapids. "There isn't always a local will to take a dam out and there is no single source of money to pay for removing dams," said Gary Noble, executive director of the Muskegon River Watershed Assembly. "These projects are often more expensive than what a community can afford to do on its own."

There are 93 dams and lake level control structures in the Muskegon River and its tributaries. Four of those dams, including the Croton, Hardy and Rogers hydroelectric facilities, are in the river's main branch. Two dams have been removed from the Muskegon River system in recent years -- the remnants of the Big Rapids Dam in 2001 and the Hersey Dam last year. Consumers Energy, which owns the Croton, Hardy and Rogers dams, recently announced it would operate those dams on the Muskegon River through at least 2034. Removing those three hydroelectric dams in 2034, when the federal operating license expires, would cost $99 million. It also would eliminate a source of clean energy and reservoirs that are popular with boaters and property owners, according to a recent Consumers Energy study.
Removing obsolete, crumbling dams usually costs far less than repairing the structures, according to the report. It cost $274,000 to remove the Hersey Dam. Repairing the structure would have cost about $1 million. After the dam was removed, Hersey Village President John Calabrese said the restored river was "gorgeous. To me, it looks like it should."

## Hundreds of state dams overdue for inspections

August 13, 2007, Green Bay Press Gazette, The Associated Press

The Wisconsin Department of Natural Resources has not inspected at least 230 state-regulated dams since August 1997, despite a state law that requires inspections at least once every 10 years, according to a newspaper's analysis of state data. The Milwaukee Journal Sentinel said in a report in its Monday edition that the dams which have not been inspected make up about one-quarter of the 926 state-regulated dams. The newspaper said 67 of the dams that have not been inspected during that time are considered a high or significant hazard. It said the rating does not measure the condition of the dam, but indicates the potential damage a failure would cause, with the possibility a high-hazard dam could cause loss of life and significant-hazard dams could cause environmental or property damage. Almost 80 percent of all state-regulated dams have no emergency action plans in case the dams fail, as required by law, the Journal Sentinel said. It said about half of the 205 high-hazard dams and 84 percent of the 135 significant-hazard dams have no emergency plans, according to the records it inspected. "For the significant- and high-hazard dams it concerns me, because you are talking about a potential for loss of life," said Meg Galloway, a state dam safety engineer.

Randy Romanski, a top aide to Wisconsin's DNR secretary, said that all high-hazard dams that have not been inspected in 10 years would get visual inspection by Sept. 30 and full inspection by August 2008. "Public safety is the highest priority, and we're going to do everything we can to protect public safety," he said. "We're confident that there are no dams out there that are an imminent threat of life or major property damage that are in danger of failing." The Journal Sentinel said the records show officials have not inspected 26 high-hazard and 41 significant-hazard dams since this time in 1997, and nine high-hazard dams have not been inspected since the 1980s. The high-hazard Middle Appleton Dam on the Lower Fox

River in Outagamie County has gone the longest without an inspection, the newspaper said, adding that its last check was in November 1981. Leslie Schmidt, an owner of Picket's Country Store in Rome, said she was surprised to hear the 600-foot-long dam near her Jefferson County store had not been inspected since 1996. "We have a lot of hunting and fishing business, so, yes, it's important to have it and have it function correctly," Schmidt said. "I obviously want the dam to be working (because) I'm in the flood zone. I would want the dam inspected on a regular basis."

The American Society of Civil Engineers gave Wisconsin a grade of C-minus on dams and river infrastructure earlier this year, saying the state needed to devote more money to dam inspections and maintenance. Galloway said the DNR is focusing on getting the owners of high-hazard dams to file emergency plans. But she said the DNR writes administrative orders for noncompliant owners only if there are other problems with their dams.

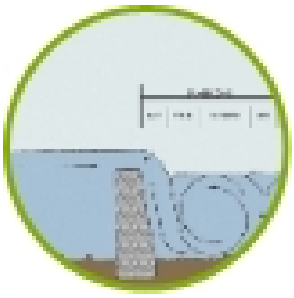
(Good tutorial!)

## Low-Head Dam Hydraulics and Safety

Author: **Alan Sorum**, **August 12, 2007**

**Low-head dams are a particularly dangerous river feature that padders need to avoid. Hydraulic currents caused by these structures are perilous to boaters and swimmers.**

The only obstacle or feature on a river more dangerous to a paddler than a **strainer** is a hydraulic. Strainers are typically tree branches or trunks lying across a river that allow water to flow through them, but trap solid objects like kayaks. Hydraulics form when water flows over a flat object or shelf into a pool or flat riverbed. Water flows down towards the bottom and recircuates, curving back towards the obstruction.



**Low-Head Dams** - The most perilous hydraulic is manmade, caused by the construction of low-head dams. These dams are common features in many rivers, often built to divert water for irrigation purposes. Water flowing over a low-head dam forms a backwash that can trap paddlers against the face of the dam. Water pouring over the top of the dam then forces them under again. The resulting continuous cycle has deadly consequences for river runners. The strength of the hazard depends on the height of the obstruction, distance the water falls, shape of the river bed, velocity of the river and volume of water passing over the dam. Many of these hydraulics require outside assistance for escape.

**Hazards** - Low-head dams offer many hazards for paddlers. Often they trap debris like tree branches, logs and old tires. Under periods of increased water flow, the circulation cell extends further downstream, making the hazard that much more dangerous. Faces of a low-head dam are nearly vertical and their concrete surfaces are smooth. A person trapped against the dam face is unlikely to climb it. Water pouring over the dam will be highly aerated. The presence of these bubbles reduces buoyancy by a third and reduces the effectiveness of Personal Flotation Devices. Pools formed by low-head dams are attractive to swimmers and present the same danger of drowning.

**Prevention and Avoidance** - Low-head dams are difficult to see while approaching them from upstream. Their small size can make them appear harmless. A paddler may not realize the danger present until it is too late. River runners should be alert for warning buoys or signs that may warn of a dam ahead and watch for any smooth lines across the water on the horizon. Concrete retaining walls along a river bank can give the presence of a dam away. Pre-trip planning by consulting published topographic maps of your river route can identify the presence of these hazards. The ability to read the river and recognize features like hydraulic takes time and experience. The safest option is pull up ahead of a known low-head dam and portage around. Reenter the water well downstream from the dam.

**Education** - In May of 2007, four people drown in Minnesota after being trapped by a low-head dam. Tim Smalley of the Minnesota Department of Natural Resources (MDNR) warns, "While the water around dams can look quite peaceful, at some times of the year, they can become extremely dangerous." In response to the hazard, MDNR has researched methods of rescue that can be used by first responders and published a number of brochures on the subject including one titled ***The Drowning Machine***.


## Hydro

August 8, 2007

### Congress overwhelmingly supports hydropower as renewable

Press Release from National Hydropower Association, WASHINGTON DC

In a stunning 402-9 vote, the House sent a clear message of support for the nation's hydropower resources when it voted to reaffirm its recognition of hydropower as a renewable energy resource. “NHA is extremely pleased with the House vote. Hydroelectric energy, along with the many benefits it provides, is a vital component of the nation’s energy portfolio,” said Linda Church Ciocci, NHA’s Executive Director. “This recognition is well-deserved, and NHA is gratified by the tremendous show of support. As the nation’s largest renewable energy, hydropower is one of the key tools in combating climate change.” The hydropower vote came during debate of H.R 3321, the New Direction for Energy Independence, National Security, and Consumer Protection Act, on an amendment offered by Representative William Sali (R-ID) seeking support for both large- and small-scale conventional hydropower technologies. In his speech on the floor, Sali reminded colleagues that hydropower is a clean, renewable, domestic source of energy—one that provides the largest amount of renewable energy generation in the U.S. today. "If we are going to discuss renewable energy, then we need to include hydropower,” Sali said. “Hydropower is clean, renewable, consistent, and most importantly pollution free. Hydropower works all the time and should be part of this bill because hydropower for America means no greenhouse gas emissions. Hydropower offsets more carbon emissions than all other renewable energy resources combined.”

The hydropower industry estimates that, in addition to its current contribution, approximately 23,000 megawatts of new energy could be brought online by 2025. More than 95,000 MW are left untapped in the country and have potential for development beyond 2025. To achieve this goal, additional policy support and incentives are needed. “NHA hopes the support that the House showed this week builds as Congress continues to develop and refine its energy policies. R&D support, greater inclusion in the RPS and the PTC, are all necessary elements if the hydropower industry is to continue its growth and help meet the country’s increasing demand for clean energy,” Church Ciocci said.

*The National Hydropower Association is the only trade association in the United States dedicated exclusively to promoting the nation’s largest renewable resource and advancing the interests of hydropower energy in North Amer¬ica. NHA, with more than 140 members throughout the industry, works to secure hydropower’s place as a cli¬mate-friendly, domestic, reliable energy source that serves national*

*environmental and energy policy objectives. NHA supports emerging waterpower technology through its Ocean, Tidal and New Technologies Council, consisting of 30 of its member companies that are exploring development of ocean, tidal or hydrokinetic projects. Council members include manufacturers, developers, public and investor-owned utilities, and engineering and consulting firms with projects proposed from California to New York.*

## MICROHYDRO PROJECTS FLOWING IN THE GREEN MOUNTAIN STATE

ALTERNATIVE ENERGY, 08 AUGUST 2007

Several municipal governments throughout Vermont are exploring micro-hydro solutions to meet their power needs. According to an article in the Times Argus daily newspaper, the town of Bennington is reviewing a possible micro-hydro system that would work with the municipal water plant to create hydroelectric power for the town offices, garages, schools and streetlights. Four towns throughout the state - Morrisville, Hardwick, Enosburg Falls and Swanton – already have micro-hydro projects in place. Other towns are either exploring new projects or, in the case of Fair Haven, are seeking to restart abandoned hydroelectric projects. The Times Argus reports that the Central Vermont Public Service Corp., a state utility, currently operates 20 hydroelectric facilities, with the oldest being the 99-year-old operation at the Chittenden Reservoir dam. The utility's micro-hydro operations generated a total of 237 million kWh of energy during 2006.

## Hydro plan gets a boost

August 11, 2007, By PATRICK McARDLE Rutland Herald

BENNINGTON, VT — With a $63,000 grant from the Vermont Department of Public Service's Clean Energy Development Fund, town officials plan to build a hydroelectric generator that will provide up to half the power needed to run the municipal water treatment plant. Terrance Morse, water resources superintendent for Bennington, said the generator's turbines would be located in an existing inline conduit that feeds into the water treatment plant. Water flows into the plant from Bolles Brook. A feasibility study commissioned by Bennington found the resulting electricity generation would produce about 140,000 kilowatt-hours and reduce the plant's carbon emissions by more than 100 tons a year. Bennington Economic and Community Development Director Scott Murphy said the electricity produced should pay for the generator's construction within two to three years. Under the proposal submitted to the state, the grant would pay for about half of the construction costs while the town would pick up the rest by borrowing from the Water Department's equipment reserve fund. The entire project will cost about an estimated $128,000. Morse said it was difficult to estimate how long it would take until the generator is built because the full results of the feasibility study have not yet been turned over to the town. An engineering study will follow. "It could be a year out. It could be six months out," he said on Friday.

The state announced this week that it will provide about $2 million in grants to 17 projects across the state to promote the use of clean or renewable energy. The Southern Vermont Recreation Center in Springfield received $125,000 to mount 420 photo-voltaic solar panels that will provide electricity. The center already has been using solar power to provide about 40 percent of the hot water for two swimming pools since March, according to board member Edgar May. The Clean Energy Development Fund, which was established in 2005, made a major difference to plans in Bennington. "Without this grant money, we wouldn't have been able to do this," Morse said. Murphy said the benefits from the project go beyond the short-term savings for taxpayers who will no longer have to pay for half of the water treatment plant's power bills. If the generator works well, it will provide proof the town can use to encourage further investment in renewable energy from the Bennington Select Board and the state. Morse said he could think of four or five spots in the town's existing water and sewer systems where generators could be built. Morse and Murphy said they hoped the generator would be able to use more efficient and cheaper turbines because the town's system is set up in a way that it can provide constant water flow at a consistent pressure.

The Bennington project has received preliminary approvals from the Vermont Agency of Natural Resources and the United States Fish and Wildlife Service. It would also need a certificate of public good from the Vermont Public Service Board.

## Water

### Heat, drought continues

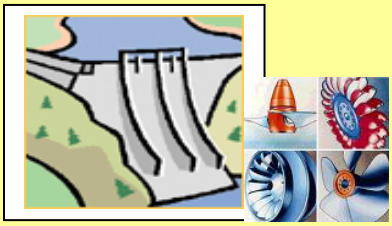
By Brent Maze, The Clanton Advisor, 8/13/07

Chilton County saw its fourth consecutive day of high temperatures over 100, leaving everyone trying to find ways to beat the heat. The Chilton County Airport recorded a high temperature of 103 yesterday while the Chilton Research and Extension Center in Thorsby had a high of 102. One of the ways people have been beating the heat is by turning up the air conditioning. Because of that, Alabama Power has had an increased demand from customers. Jan Ellis, spokesperson for Alabama Power, said the company has set records twice this week, once Monday and again Wednesday. The new record is 12,469 megawatts, which occurred at 4 p.m. Wednesday. "We've never had this much demand before, but we haven't missed a beat," Ellis said. "We have been able to meet the demand." Ellis did not expect that Alabama Power broke any records Friday because the demand typically goes down beginning Friday and stays lower all weekend. The company has been utilizing all of its power plants to help meet the demand, including their nuclear, steam, coal and hydroelectric plants.

This year's drought has caused Alabama Power to run their hydroelectric plants at minimum output, but they have increased output at peak times this week. That could cause problems for boaters who have been fishing closer to the dams than normal, Ellis said. "Everyone needs to realize that when the horns sound, the plant can be running within 15 to 20 seconds," Ellis said. "Since we haven't been running the plants as much this year, people have been fishing closer than usual." In addition to the heat wave, more than half of Alabama and all of Chilton County have been classified as being in an exceptional drought, the highest level given by the U.S. Drought Monitor. This is the only area in the nation with a drought this bad. The county is still more than 20 inches behind on its rainfall. Some rain fell in parts of the county, but it only brought some relief from the heat. Despite all of that, lake levels on Mitchell, Lay and Jordan are all around normal. The U.S. Army Corps of Engineers forced Georgia's dams to release more water last month. "That has helped us keep the water levels near normal," Ellis said.

---

[i]This 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.



# Some Dam – Hydro News and Other Stuff

i


**8/24/2007**

**Quote of Note:** *"Nature is just enough; but men and women must comprehend and accept her suggestions." - - Antoinette Brown Blackwell*

## Other Stuff:

(This is interesting!)

### Global Warming and James Hansen's Hacks

By Michael Fumento, August 16, 2007

In retrospect, you knew there would be trouble when you put the people responsible for the Space Shuttle program in charge of tracking U.S. temperatures. So perhaps it shouldn't have come as a big surprise when it was revealed that NASA committed a bit of an oopsie regarding data constantly used by the mainstream media and other global warming proponents. If you follow the global warming debate, you "know" that nine of the ten warmest years recorded in the U.S. lower 48 since 1880 have occurred since 1995, with the very hottest being 1998. But whaddya know! Those figures are wrong. Data from NASA's Goddard Institute for Space Studies (GISS) now show the hottest year since 1880 was 1934. Nineteen-ninety-eight dropped to second, while the third hottest year was way back in 1921. Indeed, four of the 10 hottest years were in the 1930s, while only three were in the past decade. The *real* 15 hottest years are spread over seven decades. Eight occurred before the chief "greenhouse gas," atmospheric carbon dioxide, began its sharp rise; seven occurred afterwards.

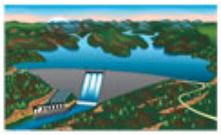
Rush Limbaugh was incorrect in saying the new figures are "just more evidence" that "this whole global warming thing is a scientific hoax." Conversely, global warming hotheads are also wrong in insisting the revelation belongs in a game of Trivial Pursuit. The GISS, which is directed by global warming guru James Hansen, is saying likewise. They're wrong, in part because of the importance of the data and in part because of what might be labeled a cover-up. In pooh-poohing the revision, the GISS ignores the tremendous emotional impact it's had in practically claiming each year is hotter than the one before. Instead it observes (correctly) since the U.S. accounts for merely two percent of global land surface, a relatively small adjustment in its figures doesn't meaningfully impact the global picture. But, notes Canadian mathematician Stephen McIntyre, who exposed the false figures, "The Hansen error . . . has a significant impact on the GISS estimate of *U.S. temperature history* . . ." (Emphasis added.) Is this important because we're a major world power or that we produce the best fried chicken? No, it's important because we have a far more sophisticated system of temperature monitoring than countries with far larger land masses. Hence, data from each of these nations affect the global model more than the American data. "Many of the stations in China, Indonesia, Brazil and elsewhere are in urban areas," observes McIntyre. This can produce hotter temperatures, yet some of the major trackers of the data from these countries, including the National Oceanic and Atmosphere Administration, make no attempt to adjust for monitor placement errors. In any event, for *some* reason "the U.S. history has a rather minimal (warming) trend if any since the 1930s, while the ROW [rest of the world] has a very pronounced trend since the 1930s." Thus if the U.S. model, by far the

most accurate one, became *the* model, it would be a gut punch to those claiming we must take drastic, horrifically expensive measures right now to ameliorate warming. Therefore, for the GISS to say this "only" affects the U.S. data is rather like a used car salesman insisting "This automobile defect is trivial; it only affects steering and braking."

Then there's the issue of how the revised data came about and came to light. McIntyre discovered an error in GISS records for the years 2000 through 2006. In simplest terms, they hadn't been adjusted to compensate for the location or time of day where the data was gathered. Nobody at GISS ever correlated those newer figures with the older ones until McIntyre did, even though later Hansen admitted it was "easy to fix." McIntyre published the data on his own website and got the agency to admit it was wrong and post new figures. Yet the GISS did absolutely nothing to alert scientists or the public to the new figures. This though it has published five global warming press releases so far this year, each one alarming. It took the blogosphere and radio talk show hosts to publicize the new figures even as the mainstream media initially ignored it. Ultimately the greatest importance of all of this is that it strongly appears to substantiate the intuitive belief that, with scientist-politician Hansen at the helm the GISS, whose data are far more important to modeling global temperatures – and hence global warming policy – than it lets on, is not a neutral collector and disseminator of statistics but rather a politicized mouthpiece.

(And this on "clean" nuclear power. Article is interesting.)

http://www.environment.co.za/topic.asp?TOPIC_ID=1145



# Dams

(The end appears to be ever so near! Only time will tell whether the salmon will return, but it is a major coup for environmentalists and another notch in their quest to destroy as many dams as possible. They're winning!)

## Elwha through the years

08/18/2007, KGW.com, By The News Tribune / Associated Press

**A look back at the history of the Elwha River and its dams:**
**1913**: Elwha Dam completed.
**1927**: Glines Canyon Dam completed.
**1992**: Elwha River Ecosystem and Fisheries Restoration Act becomes law. It directs the secretary of the Interior to study ways to restore the Elwha River ecosystem and native anadromous fish.
**1994**: The Interior Department's Elwha Report concludes that removing the dams is the best alternative.
**November 1996**: The first environmental impact statement is completed and calls for removal of the dams.
**February 2000**: The dams are bought from the Fort James Corp. for $29.5 million.
**July 2005**: A final supplemental environmental impact statement is issued.
**October 2005**: The National Parks Service issues its decision calling for the removal.
**2009**: Removing the dams could begin and be completed in two to three years.

## A look the Elwha dam-removal project

By THE NEWS TRIBUNE, August 18, 2007, Seattle, WA

**The river**: The Elwha River flows 45 miles from its source on the flanks of 6,480-foot Mount Queets and 5,993-foot Mount Barnes inside Olympic National Park to the Strait of Juan de Fuca. Historically it has been home to runs of five Pacific salmon species and steelhead.
**The dams**: When the 108-foot-tall Elwha Dam and 210-foot-tall Glines Canyon Dam were built, they supplied electricity to Port Angeles. They now supply 15 percent of the power to the Daishowa America Co. paper mill in Port Angeles. The dams have no fish passages, so their construction left just 5 miles of the lower river for spawning.
**The plan**: A diversion channel will be built to drain Lake Adwell behind the Elwha Dam. Crews then will blast apart the dam. The Glines Canyon Dam will be removed by cutting it into sections 7 1/2-feet-long and

weighing 22 tons. Lake Mills, behind the dam, will be drained through the existing outlet pipe. The mill will get its power from the Bonneville Power Administration.
**The result**: Salmon, steelhead and trout would have access to more than 70 miles of habitat in the river and its tributaries. According to projections, removing the dams would produce about 400,000 salmon and steelhead in about 30 years, compared with fewer than 50,000 fish if the dams were fitted with upstream and downstream fish passages. Right now, 5,000 to 10,000 salmon spawn in the river between the Elwha dam and the strait.

## Is A Major U.S. Dam At Its Breaking Point?

**Wolf Creek, Largest Dam East Of The Mississippi, At "High Risk" For Failure**

***BURKESVILLE Ky., Aug. 20, 2007, CBS News***

Stretching a mile from end to end, the gigantic Wolf Creek Dam is vital to southern Kentucky and northern Tennessee, preventing the periodic flooding that once plagued the cities and towns along the 700 mile Cumberland River. But Wolf Creek Dam is in trouble. The problem is about 250-300 feet below us in the rock," says Mike Zoccola. Zoccola is with the Army Corps of Engineers, which recently designated the dam at "high risk" for failure, requiring "emergency measures" to reduce an "imminent risk of human life". "We estimated a range somewhere between about 50 and 120 people, the loss of life — people who live downstream, and possibly fishermen or campers that may be down there," he tells CBS News transportation and consumer safety correspondent Nancy Cordes. The devil is in the design. Wolf Creek Dam was built on porous limestone. Over time, water has seeped into cracks in the rock, eroding a Swiss cheese of holes and caves. A sinkhole could cause this entire earthen embankment to collapse.

The first town downstream is Burkesville, Ky. The state has handed out warning radios to all 1,700 residents. "Have they told you how much time you'd have to get out if this thing went off?" asks Cordes. "I've heard 4 to 6 hours," a restaurant manager said. There are currently 3,500 dams in the United States listed as unsafe and the list is growing faster than the rate of repair. They may not all be as big as Wolf Creek Dam, but when they fail, the results can be catastrophic. n recent years, fears about dams giving way have forced evacuations in Maryland, Massachusetts and Missouri. Seven lives were lost last year when a dam broke in Hawaii. The American Society of Civil Engineers gives the infrastructure report card nation's dams a "D" and called for fully funded dam safety programs in all 50 states. "If you live downstream from the dam, it doesn't matter whether the dam was attacked by terrorists or whether it failed because of fatigue and age and lack of repair. The people downstream are all impacted the same," says Patrick Natale of the American Society of Civil Engineers. At Wolf Creek Dam, lake levels have been lowered to reduce pressure and crews are working 24 hours-a-day to fill the underwater holes with grout. Because while the potential damage to Burkesville would be in the millions, the damage to Nashville, Tenn., located further downstream, would be measured in the billions.

## Update: Some dam evacuation orders lifted, others remain

AUG 21, 2007, WISCONSIN STATE JOURNAL, BY **GEORGE HESSELBERG**

Evacuation orders for residents living below three threatened earthen dams in Vernon County have been lifted, although they remained in effect for four other dams, including one considered failed and another declared a partial failure. The orders for Raaum, Clockmaker and Yttri-Primmer Dams were lifted Monday night. But the Hidden Valley Dam above Avalanche was declared a failure after water from the weekend storms went over its top and spillway, meaning the failure was a flow problem, not a breakthrough. The auxilliary spillway at the Runge Hollow Dam also was found to be a partial failure. Evacuation orders for those dams as well as the Seas Branch and Duck Egg dams remained in effect, according to Linda Nederlo, a spokeswoman for Vernon County's emergency management office. All are flood protection dams, large, sloping, earthen structures that stretch across a valley with a drain, or spillway, designed to slowly release water the collects behind it. Familiar sights in rural southwestern Wisconsin, the dams protect the area's steep valleys and streams from sudden runoff-related erosion.

State and county officials said Monday they planned to check dams in the region following weekend storms that dropped a foot of rain on some areas. "Many of these dams went from dry to full in a matter of hours," said Meg Galloway, chief of the dams and flood plains unit for the state Department of Natural Resources, adding that such quick changes can add stress to a dam. Meanwhile, residents of Gays Mills and Soldiers Grove, parts of which remain flooded, are invited to a community meeting at 6 p.m. tonight at North

Crawford High School. The school is located at the intersection of Highway 131 and County Highway X. Parts of evacuated Gays Mills are still without power, officials said Tuesday afternoon. Gays Mills residents can pick up their mail in Soldiers Grove.

(Renovation is not the word to describe construction of the totally new and very different design of Taum Sauk upper reservoir dam.)

## Ameren OK'd for Taum Sauk site renovation

**Rebuilding to wait until lawsuit settlement.**

August 16, 2007, Columbia Tribune

ST. LOUIS (AP) - Federal regulators yesterday cleared Ameren Corp. to begin rebuilding its Taum Sauk mountaintop reservoir, which collapsed in 2005, sending a torrent of water into a state park in southeast Missouri. Ameren was notified it could move forward in a letter from the Federal Energy Regulatory Commission. But FERC, which regulates the reservoir, is requiring Ameren to undertake various measures to minimize the impact of construction on park users and the environment. They're outlined in a final environmental assessment and reflect concerns raised by the public. They include a reforestation plan, reducing effects on wetlands and providing limited recreational opportunities at the lower reservoir. The letter said that Ameren's final design plans and specifications must be approved first. Also, the utility must provide a plan and schedule for refilling the reservoir, among other things.

While the authorization is a significant step, and one Ameren said it is pleased to have received, the company said it can't begin rebuilding until it settles a lawsuit with the state over liabilities from the reservoir's breach. The reservoir, which feeds a nearby hydroelectric plant, collapsed in December 2005, devastating the nearby Johnson's Shut-Ins State Park and injuring a family of five. Attorney General Jay Nixon filed a lawsuit last year alleging Ameren placed profits over safety in its operation of the Taum Sauk reservoir. It seeks unspecified damages, including compensation for the state park. The state Department of Natural Resources is working with Nixon to come up with a settlement for the lawsuit. In a written statement, Nixon's office said yesterday that the lawsuit is moving forward. Nixon's office went on to say that rebuilding the reservoir has been "one of the core principles that we have insisted on from the start, to begin to compensate the state and local interests for the harm caused by Ameren's conduct."

The Public Service Commission also is conducting an investigation into the reservoir's collapse. In its filing with FERC in February, the utility said it planned to start construction of the reservoir this year and expected it to be up and running by 2009. The plans assumed resolving matters with the state. Ameren hasn't released the estimated cost of rebuilding but said insurance should pay for most of it. Environmental regulators and activists criticized parts of Ameren's plan to rebuild the reservoir in public comments submitted to FERC in July. Environmental groups submitted comments that questioned whether the reservoir should be rebuilt at all.

## Dorman Calls for More Flood Control Dams

Aug 21, 2007, KSWO.com

From the office of State Rep. Joe Dorman (D)

OKLAHOMA CITY_ Last weekend's rains have wreaked havoc for the citizens of western Oklahoma and again displayed the importance of improving Oklahoma's flood control system. Having taken an aerial tour of Kingfisher and parts of House District 65, I am confident the flooding in Chickasha and other areas would have been much, much worse without the existing upstream flood control dams that we currently have in place. This flood served as an important reminder of why it is necessary to keep our existing dams in working order and build new dams in areas that are still without adequate protection. Few Oklahomans realize that many of our flood control dams have reached the end of their design life. In the next 10 years, roughly 1,000 flood control dams throughout Oklahoma will be in need of rehabilitation. An example of this is one high-hazard dam near Anadarko that recently suffered damage due to rains both this weekend and earlier in the summer. At the time of my writing this column, all indications are that we have dodged the bullet and this dam will hold for now. It is evidence, however, of how important the repair and rehabilitation of our aging dam system is. That is why this past spring I and other legislators fought to increase the funding to $6.5 million for dam rehabilitation in the state. This money was then matched at a 2-to-1 rate with federal

money to generate a total of over $19 million for dam rehabilitation state wide. Much more needs to be done, however. On average it costs about $1 million to fix a dam. With 1,000 dams to repair, $19 million is only a drop in the bucket. On top of this, Oklahoma has over 300 dam sites statewide that have been designed, but never built.

Over twenty years ago, preliminary work was done on a series of 17 dams west and south of Kingfisher, and while these dams would not have completely stopped the flooding this weekend, they would have reduced the amount of damage this community suffered. In addition, most "normal" floods that affect Kingfisher could be greatly reduced, if not completely eliminated, if these dams were in place. Why haven't these dams near Kingfisher or the other 300 plus structures already on the drawing board statewide been built? Because the federal government has yet to fund them. Watershed protection is an expensive project, but it's one that will save lives and property. Last year, we saw fires ravage Oklahoma. This year, rainfall has taken lives, ruined crops and destroyed property. The government has a responsibility to do everything possible to protect citizens from these natural disasters. Our law enforcement officers, firefighters, paramedics and even volunteers have worked to help out their fellow Oklahomans. Now it's time the state and federal government do the same and place disaster prevention as a top priority.

## Hydro

(It's all about getting the cheap power produced by the Niagara Project.)

### LEWISTON: Cheap hydropower coming

Residents will see benefit of relicensing settlement beginning Sept. 1
August 15, 2007, **By Dan Miner,** Niagara Gazette

Reaction to Town of Lewiston Supervisor Fred Newlin's Monday announcement took him by surprise. Newlin mentioned during Monday's town board work session that Lewiston will finally be receiving cheap hydropower from the New York Power Authority as a result of the relicensing agreement settlement Lewiston signed with the New York Power Authority. And though the approval seemed little more than a formality, Newlin said he received numerous phone calls on Tuesday acting as if people had just heard of the agreement. "I guess the worry was this had never been tried before," he said. Lewiston will get 6.5 megawatts per year beginning on Sept. 1 and deliver it through National Grid straight to residents, Newlin said. While other entities received cheap power in the agreement, Lewiston is the only one delivering it directly to residents. The savings should amount to 20 percent annually per customer, he said. "The whole devil's in the details," he said. "We've been working with National Grid and it's just about ready to go." The power authority delivered the contract to Spitzer in early summer, and he finally signed it last week, Newlin said. The cheap hydropower is one of three benefits Lewiston gets out of the relicensing agreements. The others are $850,000 per year for capital projects and $3 million for the Niagara Power Coalition, of which Lewiston is a member.

### Alcoa hydropower agreement proceeds slowly

Aug 17, 2007 - Knight Ridder Tribune Business News, by Robert Cyr

Aug. 17—MASSENA, NY -- All it would take to keep Alcoa and hundreds of jobs in the area would be a phone call from Gov. Eliot L. Spitzer to the New York Power Authority to finalize negotiations on a hydropower contract between the two that has dragged on f r months, according to Town Supervisor W. Gary Edwards. "If Alcoa doesn't get this contract, and the low-cost hydropower -- they're outta here," Mr. Edwards said. "As time goes by, cost goes up for them. They're in the business to make money, plain and simple. They're going to reach a certain time in their business plan when it wouldn't make sense to stick around any longer." Alcoa is seeking a new long-term deal for its contract with NYPA, which expires in 2013,

that provides the company with 491 megawatts of hydropower from NYPA's St. Lawrence-FDR Power Project, Massena, at a cost of approximately 1.4 cents per kilowatt hour. Of that electricity, 387 megawatts is dedicated, or "firm," power and 104 megawatts is interruptible power. But there is no sense of urgency to the bargaining process from the state's end of things, Mr. Edwards said, and officials still seem to be dragging their heels, regardless of a recent $100 million increase in capital improvements at the plants that Alcoa has promised if the deal goes through, totaling $600 million in upgrades. "We have been in contact with representatives from the governor's office and there will be a meeting on August 28 to provide additional information they have requested about the $600 million investment Alcoa has proposed," Alcoa spokeswoman Susan T. Fly n said. "We view this request with optimism that it will get us to where we need to be." In exchange for a power commitment from NYPA, the company is offering a guarantee of 900 jobs, a $600 million investment in the plants plus $10 million for an economic development fund.

NYPA as yet has not provided a clear counterproposal, but Power Authority officials presented the company with contract options more than a year ago under which Alcoa would be provided approximately one-third less power, with the cuts taken from the interruptible allotment, while paying 50 percent more. The catch to a deal going through is the contention of state officials that they could find more jobs for the amount of power being used than Alcoa offers, Mr. Edwards said. "They're looking at it as a matter of how many jobs they can get per kilowatt," Mr. Edwards said. "I look at it in terms of impact if those jobs go away. And trust me, if we don't face reality soon, they will go away. The clock keeps ticking." Mrs. Flynn was optimistic about the next meeting between NYPA and Alcoa, but echoed Mr. Edwards's worry that costs for improvements at the plants will continue to rise as the negotiation process marches slowly ahead. "Our goal is to keep these plants operating and the jobs here in the north country, so we will continue to work on this as long we can," Mrs. Flynn said. "It is not the only capital project that Alcoa is looking at, and the longer this goes, the more expensive this project will become, so we need to reach an agreement soon."

## Shoshone plant repairs to cost $12 million

By MIKE McKIBBIN The Daily Sentinel, August 18, 2007

GLENWOOD SPRINGS, CO — The damaged Shoshone hydroelectric power plant could be back online by the start of next spring, at a cost of $12 million, according to the plant's owner, Xcel Energy. The 14-megawatt, 98-year-old power plant on the Colorado River in Glenwood Canyon suffered heavy damage June 20. One of two penstocks — large pipes that deliver water to the plant — ruptured and flooded the generating station and switching yard with approximately 8 feet of water and tons of rock and soil. The rupture caused no injuries and no loss of service for residential customers, but the plant has not produced power since. Xcel Energy determined the rupture was caused by corrosion on the outer section of pipe that was buried underground. Xcel spokeswoman Ethnie Groves said Friday the approximately $12 million cost would include repairing and upgrading both penstocks. Where the money for the repairs will come from has not been determined, she said, and a rate hike has not been ruled out. Crews will begin construction in September. Electrical equipment will be upgraded or replaced, Groves said.

Shoshone started operations in 1909 and has one of the most senior water rights on the Colorado River. Because Shoshone could not produce power after the incident, upstream water-rights holders could have "called" their water. That concerned rafting companies in the canyon and led the Colorado River Water Conservation District to negotiate a temporary agreement with those water users to maintain flows of at least 1,200 cubic feet per second through Labor Day for the rafting industry. Flows of at least 810 cfs will be kept through October for endangered fish in the Grand Junction area. Shoshone is one of seven hydroelectric power plants owned and operated by Xcel Energy in Colorado.

## Water

### Drought takes toll on lakes, energy

August 19, 2007, By BRIAN LYMAN, To The Press-Register

MONTGOMERY -- A two-year drought parching Alabama has dropped the amount of water in lakes to levels normally seen in the winter, hampering hydroelectric power and forcing utilities to buy energy from other places, officials say. Some lake levels in the state are approaching "winter pool" levels, which are traditionally the lowest of the year, and hydropower generation has fallen by almost two-thirds. Alabama Power Co. is concerned that the drought, if it continues into the fall, may dry some beds up to the point where turbines will no longer be under water. "We're running about a third of what we normally do in hydro," said Michael Sznajderman, a spokesman for Alabama Power. "Hydro is our cheapest form of electricity, and what we lose in hydro, we have to make up in other type**s** of fuel, like coal, natural gas and nuclear."

Hydropower -- generated by dams on Alabama lakes and rivers -- normally makes up about 6 percent of Alabama Power's and the Tennessee Valley Authority's energy grids, far below the power generated by the coal those utilities burn. But hydropower is one of the few energy sources that does not require fuel purchases. The drought has reduced Alabama Power's hydroelectric generation to 37 percent of capacity through the end of July, and only 24 percent so far this month. TVA reports its systemwide hydroelectric generation has dropped by half in 2007. "We would have to run our other generation assets more, but we have to buy power on the market," said John Moulton, a spokesman for TVA. "We would have to purchase more power at our height."

TVA recently announced a $3 to $6 increase in residential bills to offset increased energy costs. The utility put some blame on the drought for the surcharge. Alabama Power cited increased coal and natural gas prices for a 7 percent rate increase in June. The utility's residential power rates are approximately 11 percent below the national average, but the rates have climbed 34 percent in the past five years, far above the national increase of 16 percent. The utility says it has paid for the increased costs without added profit. Several areas in the state are facing rainfall deficits of up to 20 inches, according to the U.S. Drought Monitor, run by the University of Nebraska-Lincoln. The Monitor lists nearly all of northern and central Alabama as being in "exceptional drought," the highest category available. Mobile and Baldwin counties are listed as "abnormally dry" to "moderate drought." Alabama suffered drought conditions for most of 2006, a trend that has continued into 2007, said John Christy, the state's climatologist. Northern Alabama has faced drought conditions since January 2005.

Lake Martin in Tallapoosa, Coosa and Elmore counties, which normally would be at 793 feet this time of year, is now at 785 feet and could reach 784 feet by the end of the month, according to Alabama Power. The lake was created by a hydroelectric dam built in the 1920s. "Our lakes have never been this low this early in the year," Sznajderman said. "It's kind of an aggravating situation, because the less water we have, the more we have to make up with winter rain." The state Department of Conservation and Natural Resources says it's too early to know how wildlife will be affected. Stan Cook, chief of fisheries for the department, says fish are in a "stress situation" which could lead to greater chances of infection, but added that fish are able to adapt and that there is no need for an "alarmist" mentality. "Alabama Power is under certain requirements where they have to push water downstream, so they're in somewhat better shape than unregulated streams are," he said.

## Environment

### Fish deaths prompt power reduction at Thurmond Dam

Rob Pavey, August 17, 2007, Savannah Morning News

AUGUSTA - Hydropower generation at Thurmond Dam was halted briefly this week after about 20,000 blueback herring were sucked into turbine intakes and killed, according to the Army Corps of Engineers. During hot weather, the bluebacks congregate near the mile-long dam in search of cold, oxygenated water that forms in stratified layers far beneath the lake's surface. When the depth of oxygenated water preferred by the fish coincides with the dam's turbine intakes about 70 feet below the surface, the fish are pulled through the 30-foot-wide openings, said Jamie Sykes, district fisheries biologist for the Corps. Operators

who noticed the fish kill halted power production Monday, when about 9,000 fish were entrained. Production stopped again Tuesday, when an additional 11,000 fish were believed to have been pulled through. Generation was progressing normally on Wednesday, although biologists were on hand to monitor the area in case there are further problems, Sykes said. Although the numbers of fish killed seem high, the herring are one of the lake's most prolific species. Clemson University estimated in 1996 that about 68 million of the tiny fish populate the lake.

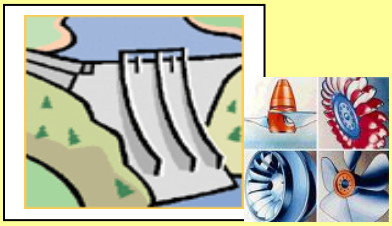
## Federal judge rules Klamath dams case can move forward

8/21/2007, The Eureka Reporter

A federal judge ruled on Friday that a nuisance case against PacifiCorp regarding toxic conditions created by the Klamath River dams can go forward, according to a news release from the nonprofit group Klamath Riverkeeper. Klamath Riverkeeper, along with several Yurok and Karuk tribal members, a Klamath business owner and a Pacific Coast salmon fisherman, sued PacifiCorp on May 2 for "damages resulting from the toxic water conditions that PacifiCorp's dams create." The plaintiffs cited risks to human health as well as a decline in salmon fishery. No tribal government is involved in the suit. Judge William Alsup of the U.S. District Court for the Northern District of California rejected PacifiCorp's request to throw out the case and a request to delay the case while the Federal Energy Regulatory Commission completes relicensing proceedings that have been ongoing since 2004. "The suit alleges that toxic blue-green algae thrives and settles in the reservoirs above PacifiCorp's dams, creating a toxic environment for salmon and endangering human health," the release stated. The plaintiffs also allege PacifiCorp has "decimated the Klamath salmon fishery, dissuaded tourism and other recreational uses of the river and seriously impeded tribal religious ceremonies," the release stated.

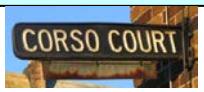
---

[i] This 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.



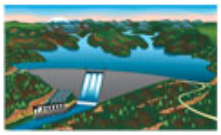
# Some Dam – Hydro News and Other Stuff

i




**8/31/2007**

**Quote of Note:** Given the recent events perpetrated by our elected officials – this seems appropriate. *"Politicians and diapers have one thing in common. They should both be changed regularly and for the same reason." --Unknown*



## Dams

(Some tribes like hydropower, and some don't.)

### Band plans to build dams on Namakan River

By Tom Klein, August 29, 2007, The Timberjay Newspapers

During an annual meeting on water levels held Tuesday in International Falls, several people voiced concerns about plans to construct dams on the Namakan River. But the project's developers contend that the impacts have not yet been determined and it's too soon to judge its merits. The project is being pursued by the Lac La Croix First Nation Band, which responded to the Ontario government's request for energy proposals. The province wants to generate five percent more of Ontario's total energy capacity from new, renewable sources by 2007 and increase it by ten percent by 2010. However, it was the need for economic development that prompted the band's interest in the project, according to Lawrence Norwegian, vice president of Ojibwe Power and Energy Group, a company formed by the band and CHANT Construction for the project. The government's announcement was a fortunate coincidence, he said, because the tribe had already decided to proceed with the project. "Economic development was the key." Norwegian said with unemployment at 80 percent, the band is dependent on government funds for its survival. In an effort to become more self-sufficient and create jobs, band members developed a list of potential projects. The power generation project was deemed the best approach by First Nation members.

In addition to providing jobs during the construction phase, the project will also add an estimated six long-term jobs, Norwegian said. Meanwhile, the band will be able to sell the power it generates to Ontario Hydro, which is making a shift from coal to cleaner power sources. The band's proposal calls for the construction of overflow weirs at three sites — Hay Rapids, High Falls and Myrtle Falls — for a "run-of-the-river" operation.

There would be no storage capacity for the dams, but the weirs could be used to help attenuate flows. An environmental assessment of the project is currently underway and will examine a variety of issues including the impact on the river's fishery. Two public opinion forums on the assessment are expected to be held in the summer and fall of 2008, but could be earlier. Critics of the project say it will spoil the beauty of one of the region's most scenic sites. Floyd Kielczewski, who lived and worked in the region for years, said he was shocked when he learned of the proposed project that would put a dam on High Falls. "It's one of our last frontiers," said Kielczewski. "I almost cried when I found out about this."

Representatives of the Rainy Lake Conservancy, a nonprofit Canadian organization dedicated to preserving the natural beauty and historic features of the watershed, raised similar concerns and said that the project could have impacts on walleye, lake sturgeon and smallmouth bass populations by disrupting upstream and downstream migration and reducing water levels in critical spawning habitat. Dale Callaghan referenced conservationist Ernest Oberholtzer's epic battle with industrialist Edward Backus, who wanted to raise water levels to ensure a greater and more consistent supply of hydropower. "Ernest Oberholtzer would be appalled that someone wants to put two or three dams on the Namakan River," said Callaghan. Norwegian said the band also values the region's aesthetics and resources. He noted that in addition to the government-required environmental assessment, the project will go through an additional assessment for the First Nation band. "We're not just satisfying the government," he said. "We also have to have the approval of our community and elders." He noted that elders already stressed that flows must continue at High Falls when the project was first discussed. "They made it very clear that we can't run the falls dry," said Norwegian. Anthony Ramierz, CHANT project coordinator, also stressed that this is a "run-of-the-river" operation that will not have any storage capacity and people should not notice any significant change in water flows. The band had at least one ally at Tuesday's meeting. Alan Burchell, a former resort owner at Kabetogama, told the audience that concerns about the dams are exaggerated and disputed the notion that it might interfere with the migration of lake sturgeon. As far as he was concerned, he said, this is a Canadian issue and the U.S. shouldn't interfere. "We can't push the envelope too far without making a fool of ourselves," he cautioned. Some questioned the fact that the band is responsible for conducting the environmental assessment, suggesting that the credibility of such an assessment could be challenged. But Bill Darby, district manager of the Ontario Ministry of Natural Resources in Fort Frances, Ontario, said that merely means that the band bears the burden of the costs of the study. Government agencies are involved in the study and it must be done to their specifications.

Several recommended that the International Joint Commission also be involved, arguing that impacts on the Namakan River will affect the entire watershed. Commissioner Allen Olson said he would convey those desires to other commissioners, but said the governments of Canada and the United States would determine if the IJC became involved. He suggested that people could contact their legislators about their concerns. That's exactly the course being taken by the Voyageurs National Park Association, according to director Kurt Lysne, who attended Tuesday's meeting. Lysne said VNPA has been in contact with congressmen about the proposed dams. "We haven't taken a position on it," he added, "but we just think it's a situation that bears watching and we see the IJC as one way to serve as our eyes and ears on this issue."

## Vernon County dams holding; power being turned back on

*By staff and wire reports,* LaCrosse Tribune, **August 24, 2007**

VIROQUA, Wis. — National Guard pumps were used Thursday to help relieve pressure on the Hidden Valley dam in Vernon County, said Mike Goetzman, a spokesman for Wisconsin Emergency Management. The earthen dam sustained erosion earlier this week when water from weekend thunderstorms overflowed it. Authorities have kept an eye on several Vernon County dams under pressure from the near-constant rain. All have held so far, said Meg Galloway, chief of dams for the state Department of Natural Resources. About 700 members of Vernon Electric Cooperative continue to be without power since the storms Tuesday night. Hardest hit were the areas of Liberty Pole and Red Mound. Most of the current outages are in and around those areas, the power company said, but a few individual outages remain between La Farge and the Mississippi River. Vernon Electric crews are optimistic that most members will have their power restored by late today, weather permitting. Vernon Electric lineman Mark See said that although the work has been moving forward and power has been restored to many of the rural properties, they are far from finished. "The saturated ground and lack of safe road access to many areas has slowed the process down making it difficult to get the company equipment to some areas," See said. Two straight days of rain during Viroqua's Wild West Days last weekend led to losses of about $8,000 to the Wild West Days organization. It was the first time in Wild West Days' 12 years of existence that weather led to cancellation of events.

(Another story about the benefits of dams. Looks like they used all the freeboard.)

## Flood control dams handle twice their designed capacity

**August 29, 2007,** by Tim Hundt, Vernon County Broadcaster

Vernon County officials said Friday that the county's 22 flood-control dams were battered and bruised, but still standing after handling nearly twice the rainfall for which they were designed. A number of federal, state and local officials met at Jersey Valley dam to review the performance of the county dams following rainfall on Aug. 18 and Aug. 19 that dropped between 6.5 and 11 inches of rain on Vernon County. The rainfall was referred to at the meeting as a "1,000-year flood event." "No dams in Vernon County failed," Resource Conservationist Phil Hahn. who oversees the dams, said. "We have two dams that suffered damage to one of their components, their auxiliary spillways." Hahn said the spillways are normally a "cut" or lower portion in the top of the dam that allows water to come over it in the event of filling to capacity. "The one at Runge Hollow was severely damaged, the one at Hidden Valley, that auxiliary spillway failed," Hahn said. "In other words the gullying unraveled all the way over the top of the dam." Hahn said much of the problem at the Hidden Valley Dam had to do with 160 round hay bales that had washed into the dam and eventually to the spillway that caused the water to be diverted. Hahn said the DNR was instrumental in flying in pumps via helicopter to relieve the pressure on the dam. Hahn emphasized that the dam structures performed well. "All the dams performed above their design standards," Hahn said. Hahn said there is about $6-$7 million in damage to the county's dams, but that they protected about $35 million in private and public property.

"Vernon County was fortunate the county board of supervisors and soil and water conservation district back in the 1960s decided to take on the most aggressive flood control program in the state by building 22 of these structures," Hahn said. "These are flood-control structures not flood prevention. You cannot prevent floods." Hahn said there are 35,000 acres of land that had to have conservation practices in place above the dams before they were even built. Hahn said the objective is to keep "as many raindrops in place" as possible and those that aren't are captured in a dam and "metered out" over time. Hahn gave credit to former County Conservationist Jeff Hastings, who convinced the county board to add his position, which is dedicated to dam maintenance, as a full-time position. "I have been very aggressive in my maintenance and the engineers have told me they believe that has made a difference," Hahn said.

Natural Resource Conservation Service watershed specialist Tom Krapf said the dams are generally designed for around 6.5 inches of rain and some took as much as 15 inches over a three-day period. Krapf said there is a difference in the amount of rainfall and the amount of runoff. Krapf said the initial 15 inches was not all runoff, because most of the watersheds were dry in the initial stages of rainfall and at least some of that moisture was absorbed. What that means for residents downstream of the structures is that they are now in a vulnerable period while the dams slowly empty, but are not able to absorb much more rainfall if another storm comes along. "The watersheds are totally saturated and it is almost like falling on concrete because it just runs off," said County Conservationist Kelly Jacobs. "I would say a 4- to 6-inch rainfall would be cause for concern," Krapf said. Third District Congressman Ron Kind praised the work of the NRCS, DNR and local conservation officers for their action and the forward thinking of past officials that invested in the structures. "But we do realize that there will have to be some repair and maintenance at the end of the day," Kind said.

NRCS State Conservationist Pat Leavenworth said it is a credit to those who engineered the structures that they were able to survive the initial "jolt" that was twice their designed capacity and said NRCS will be releasing funds from its Emergency Watershed Program to "stabilize" the structures that have had damage. Leavenworth said NRCS will also be looking at putting together numbers for long-term repairs. "If we at least shore them up that means that people can at least get back to their places," Kind said. Leavenworth said she has about $200,000 available now for emergency measures. Leavenworth said money secured for dam maintenance in the past by Senator Herb Kohl was put to good use to make sure the structures were in good condition when they were called on the control flooding. Krapf said NRCS has already worked out an agreement with Vernon County that will allow it to start letting bids for emergency repair work this week. Krapf said the priority structures are Hidden Valley and Runge Hollow. "We have had engineers working steady for two days, so… we are ready to go," Krapf said.

Krapf said Runge Hollow will get a temporary fix that will repair the spillway. The Hidden Valley Dam will get a permanent fix that will put it back the way it was before the flooding, Krapf said. Hahn said other structures like the Seas Branch, Sidie Hollow, Primmer/Yttri and Tally dams will all need to be assessed for suspected problems. Hahn said those dams were suspected of leaking through the hillside and past catastrophic failures like the Dahlen Dam in 1978 were because of leaking through the hillside. Hahn said eventually

there will be about 75 acres of flood debris that will have to be cleaned up. Jacobs said nearly all of the structures will need some maintenance even if they were not "compromised" by the flooding.

## Groups sue North Coast water board over Klamath River dams

The Associated Press, 08/23/2007, The Mercury News

SANTA ROSA, Calif.—A group of environmentalists, fishermen and Karuk tribe members filed suit Thursday to force the regional water board to regulate discharges of highly toxic algae in the Klamath River. The lawsuit filed in Sonoma County Superior Court alleges that the North Coast Regional Quality Control Board has failed to establish limits on discharges from California dams and reservoirs owned by Portland, Ore.-based PacifiCorp. The plaintiffs—the Klamath Riverkeeper, the Karuk tribe of California and the Pacific Coast Federation of Fishermen's Associations—have long pushed for removal of the Iron Gate and Copco dams, which they claim harms water quality and salmon runs in the river along the California-Oregon border. Earlier this year, the groups petitioned the regional water board to regulate PacifiCorp's discharges, but the board said it lacked the authority to regulate the company—a claim the plaintiffs dispute in Thursday's lawsuit. Water board officials did not immediately return calls for comment Thursday. Last week, a federal judge in San Francisco ruled that a separate lawsuit filed against PacifiCorp could go forward.

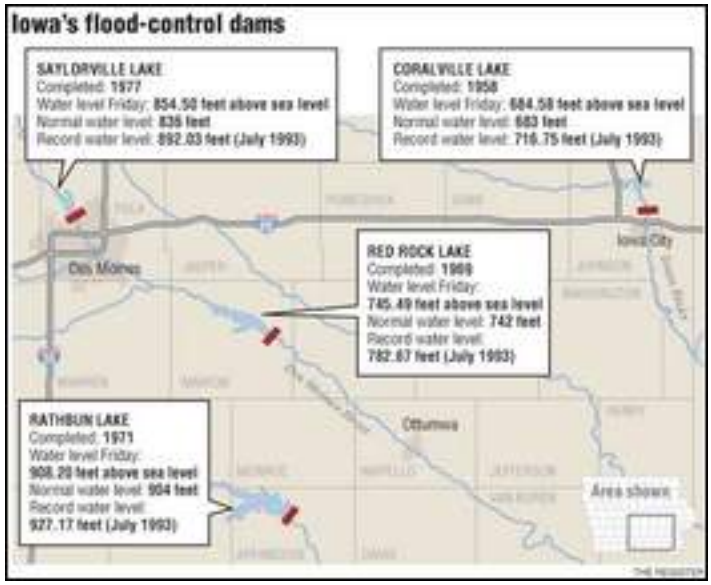
## 4 Iowa dams hold back heavy rainfall

**The worst downpours hit the right spot: Rathbun reservoir, which protects rural areas downstream.**

By WILLIAM PETROSKI, August 25, 2007, The DesMoines Register

It's all about location. In July 1993, an 11-inch deluge in the Jefferson area precipitated the flooding of Des Moines Water Works, leaving Iowa's capital city without running water for nearly two weeks. Fast-forward to 2007:

Thursday night and Friday morning, a staggering 12.3 inches of rain was recorded at Rathbun Lake, north of Centerville. But unlike the storm 14 years ago, the latest cloudburst centered over one of four flood-control reservoirs the U.S. Army Corps of Engineers operates in Iowa, and Rathbun Lake managers closed the gates to the dam, holding the deluge behind the huge dam instead of allowing it to flow down the Chariton River.




"We don't expect to open the gates for outflows until maybe Sunday or Monday," said Chris Purzer, chief of the water management section at the Corps of Engineers' district office in Kansas City, Mo., which runs the Rathbun facility. The area downstream from Rathbun is mostly rural and does not have a population center like Des Moines, which sits astride the Raccoon River, downstream from Jefferson.

Rathbun Lake has plenty of capacity to hold back water and reduce the effect of flooding downstream, Purzer said. "Holding water in back of the dam is not a problem," he said. As of Friday afternoon, the dam had less than 20 percent of its flood-control pool filled. Rathbun Lake manager Bill Duey said that the lake had risen 4 feet by Friday afternoon and that it was expected to keep climbing in the coming days. "So we are catching all of that floodwater," he said. "If you had that on top of everything that is already downstream, it would really be a mess." There has been no significant damage to the Rathbun Lake recreation areas, Duey said. Boat ramps will be open in all but one camping area, and no camping sites or trails have been affected, he said.

The Corps of Engineers' two giant lakes on the Des Moines River - Saylorville Lake near Des Moines and Red Rock Lake near Knoxville - were doing their part Friday to control the week's heavy rains. Unfortunately for people in the Ottumwa and Keosauqua areas, the storms Thursday night and Friday morning dropped their largest amounts of water downstream from Red Rock, providing less flood-control protection for those communities. The water level at Saylorville stood at 854 feet above sea level Friday, 18 feet above normal. At Red Rock, the water level was 745 feet above sea level, 3 feet above normal.

(Does it?)

## Tearing down dams helps build up fish

By Mike Stahlberg, *The Register-Guard,* August 28, 2007

**P**ortland General Electric got international attention last month when it detonated two tons of explosives on the concrete face of Marmot Dam on the Sandy River, thus beginning the Pacific Northwest's largest dam removal project in 40 years. Brownsville-area residents got only local media attention Monday when they used jackhammers and a power hoe to complete the removal of the Brownsville Canal Company's dam on the Calapooia River, 3 1/2 miles east of Brownsville. The two projects are bookends to a dam demolition derby currently under way in the Pacific Northwest - a flurry of activity intended to improve habitat for salmon, steelhead and other species of fish and wildlife. The Sandy River near Portland is home to winter steelhead plus spring chinook and coho salmon, all listed as threatened under the federal Endangered Species Act. The State of Oregon lists coho as an endangered species.

Removal of 47-foot tall Marmot Dam and of the 16-foot tall Little Sandy Dam (scheduled for next summer) will reopen miles of spawning stream that have been blocked off since 1913. The Sandy will once again be free-flowing from Hood Glacier all the way to the Pacific Ocean (via the Columbia). Cost of the dam removal is estimated at $17 million. Decommissioning of the so-called Bull Run power plant complex also will enhance whitewater rafting opportunities in the Sandy Basin. PGE will lose 22 megawatts of capacity. The Marmot Dam removal is part of a wave of river restoration projects and dam removals in the Northwest. Savage Rapids Dam on the Rogue River, Condit Dam on Washington's White River and two dams along the Elwha River in Washington are all scheduled to be taken down over the next several years.

Meanwhile, smaller projects like the one on the Calapooia River will help improve fish access to smaller tributary streams where much of the spawning and rearing actually takes place. The 150-year-old Brownsville Dam was a 5-foot high concrete structure supported by an additional six-foot high wall of flashboards that were installed each summer to back water up into a three-mile long mill race through the town. The dam was not a complete barrier for returning adult spring chinook salmon and winter steelhead, according to Calapooia Watershed Council member John Perry, who previously served on the Oregon Fish and Wildlife Commission. However, passage conditions for adult spring chinook were very poor, Perry said, and the dam prevented juvenile salmonids from swimming upstream to escape lethally warm water temperatures in the lower Calapooia during the summer. Removal of the dam will make about 40 miles of the river available for salmon spawning.

## Options sought for dams

### *Rapids park, waterfall among the suggestions*

BY BRIAN MCGILLIVARY, TRAVERSE CITY RECORD-EAGLE, 08/28/2007

TRAVERSE CITY, MI — A waterfall on the Boardman River? What about rapids fit for kayaking or quiet ponds behind four dams? Suggestions are filtering in, and a committee that oversees a $1.4 million study to determine whether Boardman, Sabin, Union Street and Brown Bridge dams should remain on the river wants to hear more. "The study is turning a very significant corner right now," said Michael J. Donahue, technical coordinator for the Boardman River Dams Committee. "It's going to start to get very real for the residents." Traverse City Light & Power wants to decommission the dams it operates, citing declining revenues and increased maintenance costs. Some local and state agencies believe the dams should be removed, while some area property owners argue they'll suffer financial losses if the structures are torn down.

Don Tilton of Environmental Consulting and Technology Inc., which is directing the study, said a baseline data collection phase is near completion. That data, ranging from dam engineering to fisheries studies, will allow ECT to evaluate the cost, feasibility and impact of each alternative proposed by the dam committee. The committee will finalize its process to gather suggestions when it meets at 6 p.m. today in the Civic

Center's meeting room. Donahue said he expects the committee will put out an initial list of alternatives with background information and ask the community to comment and suggest additional options. There's no end date for receiving ideas, he said, but the goal is to have an initial list of alternatives ready for the dam committee to review at the end of September. The analysis of alternatives could take up to a year, at which point the committee will bring them back to the public for ranking and comment, he said. Project coordinator Jennifer Jay said several people and groups already are suggesting alternatives. One group wants a white-water rapids park to replace one of the dams while another person wants a waterfall considered, she said. Leaving the dams in place is another alternative. "I don't know how long it is going to take for them to settle on a group of alternatives for us to review, but there is no point in rushing it," Tilton said. "We want to make sure people are comfortable with all the alternatives and nothing has been overlooked."

## A deluged Wis. braces for more rain

USA TODAY, 8/28/07

BURLINGTON, Wis. (AP) — Another round of thunderstorms brought more rain and flash-flood warnings to an already deluged southwestern Wisconsin on Monday, forcing residents below four dams to evacuate. Strong wind knocked out power to parts of Vilas and Oneida counties, and the National Weather Service issued a flash flood warning for Vernon County. President Bush had declared Vernon and four other counties federal disaster areas after last week's flooding forced people out of their homes.

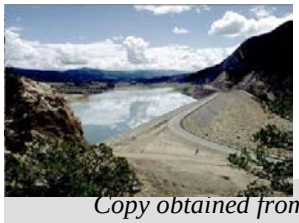
With more storms expected overnight Monday, about 80 people living below the earthen Runge Hallow, Hidden Valley, Yettri-Primmer and Seas Branch dams were told to evacuate beginning at 4 p.m., said Linda Nederlo, a spokeswoman for Vernon County Emergency Management. A week ago, the same dams filled when torrential rains of up to 12 inches caused flooding. All the dams held, but overflow at the Hidden Valley dam caused some erosion.

As the storms rolled east on Monday, a 75-year-old man was struck and killed by lightning as he sought shelter from the rain under a pine on a golf course in Madison, police spokesman Mike Hanson said. The Dane County Coroner's office said the man's name was being held until family members were notified. Elsewhere, cleanup and recovery were underway in Ohio and the rest of the Great Lakes region hit hard by last week's storms. The electricity was back on for most of the more than 1 million customers who lost power. In Illinois, 7,700 ComEd customers were still without power Monday morning, down from more than 630,000, and in southern Michigan utility crews had restored power to all but about 4,800 of 427,000 homes and businesses that lost service two days earlier. About 10,000 were still without power in Wisconsin. The weather service confirmed that tornadoes touched down in six areas of Michigan along an 80-mile line Friday, destroying at least 250 homes and businesses in the town of Fenton. The tornado's path there widened to about one-quarter mile, the weather service said. Another tornado struck the small town of Northwood, N.D., about 30 miles southwest of Grand Forks, on Sunday, destroying two small mobile home parks and damaging much of the rest of the town. One man was killed. Amtrak announced that its passenger rail service between Minnesota's Twin Cities and La Crosse, Wis., was back to normal after flood-damaged track was repaired near Winona, Minn. In Wisconsin, Federal Emergency Management Agency teams were assessing the damage caused by last week's storms. Jeremy Knopow, 30, of Burlington, was waiting to see what federal aid would be available to cover his belongings or the estimated $10,000 in structural damage to his home. "If homeowner's doesn't cover it, and that doesn't cover it, we're just screwed," Knopow said.

## Dam safety

Here's a short look at dam safety in Colorado from *The Glenwood Springs Post Independent* (free registration required). From the article:

Jack Byers, deputy state engineer with the Colorado Division of Water Resources, said that while Garfield County has high-hazard dams, none are operating under restrictions or have immediate safety concerns. High-hazard dams are ones that could cause significant loss of life or property damage if they failed. "It doesn't dictate what is the likelihood of the dam failing, it is more how you have to manage these dams," said Dave Merritt, chief engineer with the Colorado River District, based in Glenwood Springs. High-hazard dams must undergo annual inspection in Colorado. The House Transportation and Infrastructure



Committee passed [U.S. Representative John] Salazar's dam repair bill early this month. It is expected to receive consideration by the full House after Congress returns from its August break. The bill would authorize the Federal Emergency Management Agency to provide grants for rehabilitation and repair of publicly owned dams. It would make $200 million available over five years for work on the nation's aging dam infrastructure. States would have to provide 35 percent in matching funds. Byers praised the measure but also said the amount of money is relatively small compared to the need that exists...

The state has about 193 dams with restrictions out of about 2,000 in total, he said. Those restrictions might include prohibiting a reservoir from being completely filled, or used to store any water at all. Most of the dams with restrictions are considered low-hazard, meaning problems with them wouldn't endanger lives, he said. Locally, large dams such as the one at Rifle Gap are considered high-hazard. However, Merritt said much smaller dams also can be high-hazard, as in cases when they are located in narrow canyons. Salazar's bill wouldn't apply to privately owned dams. Nor would it pertain to federally owned ones, such as Ruedi Reservoir near Basalt, which the federal government maintains. Byers believes Salazar's focus on dam safety is well-timed, given the recent, deadly collapse of a highway bridge in Minneapolis.

## Yellowstone Dam on hazard list

August 27, 2007, The Times Plus

MONROE, WI-- It isn't just bridges that have come into the spotlight in the last month. Dams are also part of the infrastructure story that has been overlooked over the years. There are two dams in Green County: the Decatur Dam near Brodhead and the Albany Dam, which runs through the village. The Yellowstone Dam is the only one listed in Lafayette County. The dams are rated for hazards they pose to downstream areas based on three categories:

* Low hazard potential -- those where failure wouldn't result in the loss of life and would have low economic and environmental losses.
* Significant hazard potential -- there would be no loss of human life, but there could be economic loss or environmental damage.
* High hazard potential -- there would probably be a loss of human life.

The dam in Yellowstone, owned by the Wisconsin Department of Natural Resources, is listed as having "high hazard potential." According to the National Inventory of Dams, there is no emergency action plan in the event the dam would fail. Yellowstone Dam was last inspected in 1989, with no yearly inspection schedule, according to the inventory Web site. The Decatur Dam and the Albany Dam are listed as having "low hazard potential." Neither have an emergency action plan. The Decatur Dam, owned by the City of Brodhead, was last inspected in 1990; the dam in Albany, owned by the village, was last inspected in 1996.

# Hydro

(Excerpts)

## Fall ballot options: taxes and debt

### Aspen approves four measures to ask local voters in November

By Carolyn Sackariason, Aspen, CO, August 29, 2007, The Aspen Times

ASPEN — Aspen residents will have an option to tax themselves in an effort to clean up the Roaring Fork River and ride free buses throughout town. They'll also decide whether to allow City Hall to borrow money to build a hydroelectric plant to generate renewable energy. The city also will ask voters this fall to approve changing the way they elect City Council and the mayor into office, essentially doing away with runoff elections. The City Council on Monday approved four ballot questions to put to voters on Nov. 5. A fifth proposed ballot measure - changing the mayor's term from two years to four - failed because of lingering political issues that council members couldn't hash out. But voters will be asked to institute Instant Runoff Voting at the polls. It would eliminate holding another election a month later if candidates don't receive a

majority vote in the May election. Residents will be asked to approve the concept of ranked-choice voting and then let the government form a task force of residents to determine exactly what method to use in elections. A favorable option appears to be changing the current law so that City Council candidates and the mayor must win 50 percent of the votes, plus one. Voters would select their first choice, and once that candidate has been established as the winner, a second ballot count would ensue without the first winner to establish the second-highest vote-getter.

---

**Renewable energy costly**
A proposed $5.5 million hydroelectric plant would increase the city's electric utility's renewable energy supplies by 8 percent. The city asks voters to issue bonds worth $5.5 million, with a repayment cost of $10.7 million for a new hydropower facility, which would capture the waters from Castle Creek. The facility also would derive funding from a $400,000 grant from the Community Office for Resource Efficiency. The city will pay $780,000 toward the project. The plant would produce 5.5 million kilowatt-hours a year, which equates to electricity for 655 typical homes in Aspen. It also would eliminate 5,167 tons of C02 emissions - a .6 percent reduction in communitywide carbon emissions. Voters also would have to approve using open space for a facility to house the turbines and generators for the hydropower. It would be built on an empty lot near the city shops underneath the Castle Creek bridge on Power Plant Road. The project would use existing water rights, headgates and water storage components of the original Castle Creek hydroelectric plant, which met Aspen's electric power needs from 1892 through 1958.

## Water

(This is a good laugher. Only in California!)

**Arnold, Tell the Truth about California Water!**

### Schwarzenegger's True Lies about Dams and Canals

By Dan Bacher, Central Valley, San Francisico Bay Media, 8/22/07

California Governor Arnold Schwarzenegger keeps repeating at his press conferences and meetings the big lie that no dams or water storage facilities have been constructed in California in the past 20 to 30 years. Apparently, the Schwarzenegger administration believes in the classic propaganda technique that if a big lie is repeated enough, it will be eventually accepted as truth by the media and public. This fallacy is being used to bolster his call for a peripheral canal and more dams in California, although the truth is that several major dams and other storage facilities have been constructed during the last 30 years. On July 14 at a town meeting in Bakersfield, the Governor stated, "Do you know that for 20 years, well, actually since the late '70s, they have not built a dam? I mean, think about that. They have not built a dam." Then on Monday, July 16, the Governor discussed his "Comprehensive Water Plan" at San Luis Reservoir, repeating this false statement again. "But over the last 20 years we have not built a single major reservoir that connects to this great system here, even though we have a population growth from 20 million to 37 million people over the same period," he said. On July 23, Gov. Schwarzenegger toured Long Beach Aquifer to discuss his Water Plan for Southern California, yet again repeating another variation of this fallacy. "Right now our water system is extremely vulnerable," he stated. "For one thing, we haven't built a major state reservoir in more than 30 years and in that time our population has grown from 20 million to 37 million. We must solve California's water problems not only for today, but for 40 years from now."'

There is no doubt that the California dam building frenzy by the federal, state and regional governments of the period from 1945 through 1970 is long over, but this was because virtually all of the suitable and economically feasible on-stream dam sites already had dams built on them or were located on federally designated "wild and scenic" rivers. In spite of what the Schwarzenegger says, a number of dams and reservoirs have been constructed in California since the late seventies, including some of the largest

reservoirs in their respective regions. The Contra Costa County Water District constructed one of the Bay Area's largest ever reservoirs, Los Vaqueros near Livermore, during 1994-1997. The lake was filled to capacity and opened to recreation for the first time in September 2001. The lake has a capacity of 100,000 acre-feet of water now – and the reservoir is set for expansion in the future. More recently, Diamond Valley Reservoir, built by the Metropolitan Water District (MWD) of Southern California to improve dry year reliability, was finished in 2003. The lake, located between Temecula and Hemet off Hwy. 79 at Newport Rd. in the Domenigoni/Diamond valleys, has a capacity of 800,000 acre-feet of water and is the largest-ever reservoir constructed in Southern California. According to MWD's website, "This reservoir is larger than Lake Havasu and took 4 years to fill. This reservoir will hold as much water as combining Castaic Lake, Lake Mathews, Pyramid Lake, Lake Perris and Lake Skinner into one." This reservoir almost doubles Southern California's surface storage capacity and secures six months of emergency storage in the event of a major earthquake.

In addition, the newest federal Central Valley Project reservoir, San Justo Reservoir, was constructed by the U.S. Bureau of Reclamation as part of the San Felipe Division beginning in 1987. Water in San Justo comes from the massive San Luis Reservoir. As Spreck Rosekrans of Environmental Defense points out, "Water supply development continues in California, though today's solutions are different from those adopted during the middle of the 20th century. Today there are few practical opportunities to build new dams that would impound the natural flow of a large river. Most of California's major rivers are either already dammed, protected by law, or too remote to be economically developed." (See "Recently Developed Water Storage Capacity in California, Environmental Defense, April 2007). He continues, "Innovative water managers are finding, however, that they can extend supplies in a variety of ways, including increased efficiency, recycling, local storage, groundwater management, and transfers and exchanges with other agencies that have different sources and different needs."
Rosekranz emphasizes that since 1990, 6,200,000 acre-feet of storage have been developed at six sites alone. This storage includes the 900,000 acre-feet of off-stream storage at Los Vaqueros and Diamond Valley, combined with groundwater aquifers. These aquifers have been developed either to serve local communities or to use as "banks" that exchange ground and surface supplies, using California's vast network of canals, with distant communities in dry years, said Rosekrans. Whether it was Schwarzenegger's staff or the Governor himself who concocted these false statements about California water storage really doesn't make any difference. However, I call on the Governor NOW to stop repeating these mistruths as justification for his mad drive to build the peripheral canal and two new reservoirs.

The two new proposed dams, Sites Dam in the Sacramento Valley and Temperance Dam on the San Joaquin River, are not considered to be economically feasible for the amount of additional water storage they would provide. "The cost of producing water at Sites and Temperance dams would be between $1,000 and $2,000 per acre foot. Who is going to buy this water at such a high price?" said John Beuttler, conservation director of the California Sportfishing Protection Alliance. I believe that by promoting the myth that dams and water storage haven't increased in California over the past 30 years, the Schwarzenegger administration is trying to create in the public mind the idea that water supply can be magically expanded by building two new dams and a peripheral canal. The problem isn't that that there aren't enough dams and water storage facilities in California – the problem is that virtually all of the economically feasible dam sites have already been taken and that California's finite and fragile water resources have already been over-allocated. The governor's call for more dams and a canal occurs at a time when the California Delta is at the worst ecological crisis in its history. Four species of pelagic (open water) species have crashed to record lows, the result of massive increases of water exports by the federal land state govnerments, the profileration of toxics in the water and the impact of invasive species. Exports from the Delta need to be reduced, not increased as the state and federal governments are proposing.

More recently, Governor Schwarzenegger and Senator Dianne Feinstein met on August 21 in a "Delta Summit" to hear presentations by California's top water experts working to "fix" the Sacramento-San Joaquin Bay Delta. "Experts and stakeholders discussed plans to improve California's water infrastructure and fix the deteriorating Delta, which supplies clean water to 25 million people in Southern California," according to the Governor's office. "Senator Feinstein and I agree that we need a long-term, sustainable Delta fix that improves conveyance, restores the ecosystem and increases water storage and conservation. We cannot wait until we have a Katrina-like disaster to attack this problem. Twenty five million Californians rely on the Delta for clean, safe water. It also irrigates hundreds of thousands of acres of Central Valley farmland and it is the backbone of California's $32 billion agricultural industry." The problem with this statement is that you can't have a "long term, sustainable Delta fix" that "improves conveyance," "increases water storage" and restores the ecosystem at the same time, since Delta water is already overallocated. I'm glad that the Governor mentioned conservation, but so far, his administration has just paid lip service to conserving water. Building a peripheral canal or constructing economically unfeasible dams will not provide the solution to

California's water problems. The solution is for California and the federal government to take drainage-impaired land in the San Joaquin Valley out of agricultural production and to promote innovative ways of water conservation that will allow California's fragile water supply to serve both environmental needs and the needs of cities, farmers and industry. The state should also also move full speed ahead with building water desalinization plants in southern California that utilize the latest in technology to effectively increase the public water supply. Arnold, when are you going to tell the truth about California water?

## Environment

### Suit Claiming Dams Impede Tribal Religious Ceremonies Proceeds

August 23, 2007

A Northern District of California federal judge on Friday rejected a motion by PacifiCorp to dismiss the lawsuit filed against it by a number of plaintiffs including Yurok and Karuk Tribal members. The lawsuit seeks damages for toxic water conditions caused by PacifiCorp's dams on the Klamath River. The court also refused to delay the case while the Federal Energy Regulatory Commission completes long-running dam re-licensing proceedings. Plaintiffs allege, in part, that toxic blue-green algae thriving in reservoirs above the dams have seriously interfered with river-based tribal religious ceremonies. Yesterday's American Chronicle reports on the court's holding that the grant of a federal permit for the dams does not preclude the bringing of a nuisance claim against PacifiCorp.

---

[i]This 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.