From: Linda Whetton
To: Alston, Joe; Anderson, D. Larry; Balsom, Jan; Barger, Mary; Begay, Robert M.; Begay, Tim; Benemelis, Perri; Burton, Gary; Christensen, Kerry; Cook, Wayne; Crocker-Bedford, Cole; Cross, Jeffrey; Damp, Jonathan; D'Antonio, John R.; Davis, William E.; Dean, Cassandra; Dongoske, Kurt; Drye, Brenda; English, Jeff; Fenn, Denny; Foster, Dave; Gabaldon, Michael; Greiner, Lloyd; Harris, Christopher; Henderson, Norm; Hyde, Pamela; Jackson, Loretta; James, Leslie; Kaplinski, Matt; King, Robert; Knowles, Glen W.; Kubly, Dennis; Kucate, Arden; Kuharich, Rod; Kuwanwisiwma, Leigh; Lehr, Phillip; Metz, Don; Orton, Mary; Palmer, S. Clayton; Persons, Bill; Peterson, Randall; Potochnik, Andre; Powell, Linda; Rampton, Ted; Ramsey, Nikolai; Seaholm, Randy; Shields, John; Spiller, Sam; Steffen, Mark; Taubert, Bruce; Whipple, John; Wiele, Steve; Wyaco Sr., David; Yeatts, Michael; Zimmerman, Gerald
Date: 7/25/03 1:00PM
Subject: Proposed Mechanical Removal Modification Document

Please be advised that the NEPA compliance document for the proposed modification to mechanical removal by USBR, USGS, and NPS was sent to the Interested Parties, including the AMWG and TWG members and alternates today, July 25, 2003. Comments on this document will be accepted if post marked no later than August 8, 2003. Following analysis of comments received and input from the AMWG, the Federal action agencies will make a determination whether to proceed with the proposed modification. The document and cover letter have also been posted to Reclamation's web page and are accessible at the following:

http://www.usbr.gov/uc/envprog/amp/amwg/mtgs/03aug13/mtga4_00.html

If you need to refer to the EA Proposed Releases, Sept. 2002, that document can be found at:

http://www.usbr.gov/uc/library/envdocs/ea/gc/gc_release.html

Linda Whetton, UC-733
Bureau of Reclamation
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lwhetton@uc.usbr.gov

CC: Bacon, Dudley; Brown, Richard; Buell, Scott; Cannon, Kate; Chatinsky, Steve; Deeter, Kirk; Dierks, Clark; Drebert, Greg; Dunfee, Brian; Fairley, Helen; Fairley, Helen; Force, Lisa; Foster, Dave; Garrett, L. David; Giovando, Mike; Gloss, Steve; Golightly, Mike; Gonzales, Catherine; Gunn, Terry; Hagopian, Janet; Hamilton, Paul; Harkins, Jayne; Haskell, David; Heguy, Dick; Holling, Brian; Homer, Suzette; Hueftle, Susan; Israelsen, Brent; Jacobs, Jeffrey; Johnson, Rick; kieffer, vickie; Kinsinger, Anne; Kohl, Keith; LaGory, Kirk E.; Lane, Harry; Leap, Lisa; Liszewski, Mike; Lynch, Robert; Magnussen, Steve; Mankiller, Serena; Mankowski, Bob; Maul, Susan; McKone, Rod; McMillin, Joel; Melis, Ted; Meyer, Steve; Mietz, Steve; Murphy, Terry; Noble, Sean; Orton, Mary; Ostapuk, Paul; Paukert, Craig; Pavlik, Bill; Phillips, Fred; Pilcher, Jess; Plummer, Bill; Port, pat; Reger, Scott; Riley, Larry; Ryan, Tom; Salamaha, Rick; Shearon, Paul; Sisk, Tom; Stevens, Larry; Tewes, Neil; Treacy, Brian; Vernieu, Bill; Wechsler , Jim; Wegner, Dave; Weisheit, John; Westcoat, Jr., James; Wietz, Paul; Wirth, Barry

akucat@Ashiwi.org

From: Lisa Force <lforce@livingrivers.org>
To: "Linda Whetton" <LWHETTON@uc.usbr.gov>
Date: 7/22/03 1:25PM
Subject: Re: GCD AMWG Meeting Materials

Linda - Would you please send a packet to our Colorado office this time? The address is:

Living Rivers
6890 W. 16th Ave.
Lakewood, CO 80215

I'm assuming John Weishiet will also want a packet, sent to the usual UT address at:

PO Box 466
Moab, UT 85432

Thank you!

Extra reports sent to:
1 - Mary Barger
2 - Gary Burton
3 - Kent Dongaske
4 - Norm Henderson
5 - Dave Wegner
6 - Kerry Christensen
7 - Dave Garrett
8 - Lisa Force
9 - John Weisheit
10 - Cliff Barrett
11 - Bob Lynch

At 02:31 PM 7/18/2003 -0600, you wrote:
>This is to advise you that the next Glen Canyon Dam Adaptive Management
>Work Group Meeting will be held on August 13-14, 2003, in Phoenix,
>Arizona. Meeting packets were sent to the AMWG members on July 17,
>2003. If you would like to receive a packet, please respond to this
>e-mail message or phone me. There will be a limited amount available at
>the AMWG meeting on a first come, first serve basis. The documents are
>also posted on the following web page:
>
>http://www.usbr.gov/uc/envprog/amp/amwg/mtgs/03aug13/mtga4_00.html
>
>Linda Whetton, UC-733
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>125 S. State Street
>Salt Lake City UT 84138-1147
>T: 801-524-3880
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>lwhetton@uc.usbr.gov

From: "Leslie James - CREDA" <creda1@qwest.net>
To: "Linda Whetton (E-mail)" <lwhetton@uc.usbr.gov>
Date: 10/31/03 8:10AM
Subject: Fw: Story from today's Land Letter

here's the article.
----- Original Message -----
From: Leslie James - CREDA
To: Dennis Kubly
Sent: Friday, October 31, 2003 8:17 AM
Subject: Fw: Story from today's Land Letter

Sent: Friday, October 31, 2003 8:15 AM
Subject: Fw: Story from today's Land Letter

Dennis, this article refers to "this week, the group formally asked Interior Secretary...to give BuRec the green light to go forward with the project".

I'd like more details on that statement -- in what form was the Secretary "asked" and what was she asked to approve?
Thanks, Leslie James
----- Original Message -----

From: Leslie James

To: Wayne Retzlaff ; Tom Martin ; Tom Biggs ; Ted Rampton ; Seth Voyles ; Richard Pullen ; Raymond Endfield ; Randy Dietrich ; Randal N. Medicine Bear ; Neil Knott ; Mirek Horenovsky ; Mike Dahl ; Micheal McInnes ; Michael Curtis ; Maude Grantham-Richards ; Marshall Empey ; Mark Mitchell ; Mark Michael ; Marilynn Short ; Louis Holveck ; Lori Smith ; Lloyd Greiner ; Leroy Michael, Jr. ; Leon Pexton ; Lawrence Covillo ; Larry LaMaack ; Larry Huff ; Kevin Garlick ; Kent Romney ; Kent Bloomfield ; Ken Saline ; Joe Wilson ; Joe Taylor ; Joe Mulholland ; Jeff Woner ; jbartatty@aol.com ; James Trangsrud ; Harvey W. Boyce ; Grant Ward ; George Caan ; Gary Aitken ; Gail Bates ; Frank Knutson ; Ed Williams ; Dean Chirigos ; Dave Mazour ; Dave Castillo ; cibarre@attglobal.net ; Chris Ortega ; Charles Crane ; Bob Lynch ; Bill Arendell ; Ben Hanley ; Layne Burningham ; wilson@intermountain-rea.com ; rob wolaver ; jerry demel ; Gary Ijams ; dwmillig@srpnet.com ; dld@krsaline.com ; danwal@tristategt.org ; creda1

Sent: Thursday, October 30, 2003 12:40 PM

Subject: Fw: Story from today's Land Letter

----- Original Message -----
From: Sampson, Vince
To: Leslie James - CREDA
Sent: Thursday, October 30, 2003 10:42 AM
Subject: Story from today's Land Letter

Hi Leslie. Hope all is well. Here is a news story of interest re the Humpback chub.

ENDANGERED SPECIES

Interior mulls warming Colorado River to help humpback chub

April Reese, Land Letter Southwest correspondent

GRAND CANYON NATIONAL PARK, Ariz. -- Almost 40 years after Glen Canyon Dam plugged the Colorado River, one of the river's oldest inhabitants is struggling for survival. But as the debate swirls over recovering the endangered humpback chub while meeting human water demands, the river's federal caretakers have devised a new solution -- warm up the river.

The chub, which ranges in size from 5 to 20 inches and can live up to 30 years, evolved in the Colorado River basin 3 million to 5 million years ago. Once numbering in the millions throughout the watershed, the fish has been reduced to a couple thousand, though scientists disagree over just how many remain. While small groups of the fish persist in the upper Colorado River basin, the only surviving lower basin population is in the Little Colorado River, near its confluence with the main stem in Grand Canyon National Park.

The largest known population of humpback chub is in the Little Colorado River in the Grand Canyon, where there may be up to 10,000 fish. Photo courtesy of the Fish and Wildlife Service/John Rinne.

Scientists attribute the species' decline primarily to the Glen Canyon Dam, built in 1963 to provide water and power to the interior West. While many credit the dam and its reservoir, Lake Powell, with turning the arid region into a land of verdant farms and booming cities, the project also has drastically changed the ecosystem downstream. The Colorado River, which historically ran muddy and warm, turned clear and cool with the closing of the floodgates.

As incoming water pools behind the dam, its sediment load settles, and the water released through the dam's penstocks is drawn from the cool depths of the reservoir. And water temperatures that once fluctuated seasonally from about 80 degrees in summer to almost freezing in winter now average 46 degrees year-round, according to the Bureau of Reclamation. Biologists suspect the chub and other native fish that have disappeared from the river altogether have difficulty tolerating the cool, clear waters that now flow through the Grand Canyon.

The picture on the left shows the clear-running Colorado River in the Grand Canyon above the confluence with the Little Colorado River; the other picture shows the murky Little Colorado.

Photos by April Reese.

On a recent data-gathering trip funded by the U.S. Geological Survey, Joe Shannon, a Northern Arizona University-based aquatic ecologist who has been monitoring the Grand Canyon ecosystem for 15 years, pointed out the contrast between the murky Little Colorado and the main stem river as he traveled down a 255-mile stretch of the river that runs through the park. A recent storm had loaded the Little Colorado with sediment, and its milk-chocolate flow muddied the crystalline main stem where the two rivers meet, about 75 miles downstream from the dam.

"That's how the Colorado should look," he said, pointing to the river, which has grown murky under the influence of its temporarily muddy tributary. "It's not supposed to be clear."

It was a rare glimpse of the river as the humpback chub saw it for millions of years, before the construction of the dam 40 years ago. But a quick splash of the hand in the cloudy waters is a reminder that this is still a "designer ecosystem," as Shannon calls it. The water is cool -- too cool for humpback chub to reproduce.

Warming the river

The Bureau of Reclamation, which owns and operates the dam, hopes to improve those conditions by using a "temperature control device" (TCD) to ensure that warmer water is released into the river. Dennis Kubly of BuRec's Environmental Resources Division said the agency wants to send water from the reservoir's warm surface layer downstream instead of drawing from the deeper, cold waters of the lake.

The impetus for the project was a biological opinion issued by the Fish and Wildlife Service in 1994. The agency recommended that BuRec investigate using temperature control technology, which up to that point had only been used to enhance conditions for game fish, to help recover the humpback chub.

In August, the proposal received an endorsement from the Glen Canyon Dam Adaptive Management Work Group, comprised of 25 stakeholders representing the park service, BuRec, FWS, power interests, environmental groups and others. This week, the group formally asked Interior Secretary Gale Norton to give BuRec the green light to go forward with the project. Norton is expected to make a decision on the proposal within the next few weeks.

But several biologists questioned whether the water drawn from the top of the reservoir will be warm enough to significantly benefit the chub. While BuRec's proposal to increase water temperatures in the river is partly in response to FWS' recommendations, some biologists are concerned that warming the river could benefit non-native fish that prey on the chub as well. For instance, channel catfish -- one of several species, including striped bass and carp, introduced to the Colorado River by fishery managers -- respond to increases in water temperature by speeding up their metabolism, which causes them to eat more food, including chub, Shannon said.

"Right now, those fish may be suppressed by cold water temperatures," said Sam Spiller, Lower Colorado River coordinator for the Fish and Wildlife Service. "There might be more damage if we warm the water." Even so, the increase in temperature could help control cold water species like trout, he added.

Even if the TCD succeeds in boosting chub numbers, it's likely to fall short of federal recovery goals for the species, said David Haskell, a former director of Grand Canyon National Park's Science Center. "The recovery plan calls for [establishing] another major, viable population," he said. "The TCD would not do that."

Shannon was more optimistic. "I think the TCD can work, but only if there's a total reworking of dam operations," so that water releases would more closely mimic historic fluctuations in flows, Shannon said. "Recovery efforts have to be on a big scale, because the dam and its impacts are so big."

If the project goes forward, Kubly said it will probably be implemented in small steps so federal managers can monitor the effects on both native and non-native fish and adjust the plan accordingly.

"In a sense, it's a one-arm-behind-your-back approach," he said. "Not everyone trusts one another, so this makes sure we don't move too far too fast."

It also costs less to go slow, Kubly noted. The initial two-penstock plan will cost about $25 million; to alter all eight, the cost would be about $100 million, he said.

Kubly said the agency has used temperature control devices with some success on other dams, including Shasta on California's Sacramento River, Hungry Horse on Montana's Flathead River and Flaming Gorge on Utah's Green River.

"There aren't any known disasters out there," Kubly said. "By and large, the system responses have either been positive or neutral."

Recovering the chub

But Haskell, who was also a ranger at Glen Canyon National Recreation Area in the 1970s, said the only way to restore native fish -- and the rest of the ecosystem -- is to decommission the dam. He compared the TCD project to "tinkering while Rome is burning."

"If there wasn't a dam, the trout would be dead real quick, because they can't take a lot of this," said Haskell, nodding toward the murky water.

According to the Fish and Wildlife Service, the chub will be considered for removal from the endangered species list "when five viable, self-sustaining populations have been restored ... and when the fish's habitat has been protected."

With one of the river system's biggest dams just upstream from the largest population of the chub, that is a tall order, said Haskell and other decommissioning advocates.

In addition to the TCD proposal, federal managers have launched a program aimed at killing non-native fish. But that effort, too, is fraught with uncertainty. Some biologists are worried that reducing the numbers will only give the remaining non-native fish more room -- and more resources -- to thrive. The question, Shannon said, is, "How do you kill all the bad fish and grow the good fish?"

Complicating recovery efforts are conflicting management objectives in the same ecosystem, Shannon added. "The park is killing non-native fish, but [state managers] are still stocking them upstream," he said.

Debbie Felker, a spokeswoman for FWS' Upper Colorado River endangered fish recovery program, said the agency is working with state game and fish officials to scale back stocking programs that conflict with endangered species recovery.

The challenge of recovering the humpback chub is part of a larger debate over how to protect the park's resources while meeting water delivery mandates.

Lake Powell is one of several reservoirs that are part of the Colorado River Storage Project, which provides water for seven states: Arizona, California, Colorado, Nevada, New Mexico, Utah and Wyoming. About 85 percent of the water is used for irrigation; the rest is allocated for residential, commercial and industrial use. Balancing those demands with the protection of an extensively altered river ecosystem is a daunting task, observers say.

Meanwhile, the stakes are becoming increasingly higher for the chub in the Grand Canyon, Shannon said. "If we lose the base flow of the Little Colorado River because of drought, it's all over," he said. "We're talking at most another 20 years."

Vince Sampson

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