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## Agencies cooperate to restore Bighorn River side channels for trout

By BRETT FRENCH

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A mini-excavator is used to remove gravel from the head of a Bighorn River side channel to restore the water flow.

Mike Ruggles/FWP

By BRETT FRENCH

Painted, drilled and marked rocks were rolling on the Bighorn River last week as the Bureau of Reclamation tested how much water it would take to move sediments.

The agency boosted the flows out of Yellowtail Dam up to 7,000 cubic feet per second and held them there for 12 hours as part of the study that took place from Monday through Thursday.

"This was part of a multiyear study working with Fish, Wildlife and Parks to establish and maintain these side channels," said Steve Davies, head of BuRec's facility operations and maintenance division.

### History of drought

Years of drought led to low flows in the Bighorn River for about a decade, drying up the stream's side channels and allowing invasive species like Russian olive trees to take root. Previously, the river would see a flow of 20,000 cfs about once a decade that would help keep the side channels open.

Side channels provide rearing and spawning habitat for trout on the world-renowned fishing stream. Little fish out in deeper water have a hard time surviving predation by larger fish.

"You need complexity of habitat to support a range of fish sizes and other fish recruitment areas for little browns and rainbows," said Mike Ruggles, FWP fisheries biologist. "Rather than wait another 10 or 20 years for things to get critical, we're being proactive."

Side channels also help spread out and slow the river when high water does hit, reducing flooding and bank erosion. Last year, the Bighorn River hit a peak of 15,500 cfs. Riverside homes were flooded and bank erosion was heavy in spots.

### A little help

Last spring's high water showed that flows alone cannot re-establish the side channels. So in February the FWP and Bighorn River Alliance joined forces to oversee the excavation of one side channel about 10 miles below the Afterbay Dam. Using small machinery, about 100 to 200 feet of gravel and rock was removed about a foot deep from the head of the channel, allowing the water to flow once again. Funding of \$25,000 came from grants and the Western Area Power Administration.

"There are a lot more side channels to go," said Dennis Fischer, a river guide and alliance member who has been involved in the project over the past two years. Ideally the project would open side channels all the way down the Bighorn River, roughly 70 miles to its junction with the Yellowstone River.

"We'd like to do a bigger project, a whole bunch of channels at once, the economy of scale idea," he said.

The flushing flow study will give the groups some engineering data to help them determine which side channels would be best suited for future work, Fischer added. He's also optimistic that the flush of water signifies a change in the Bureau of Reclamation's management of the river.

"Hopefully they have come to realize that in low-water years the river still needs flushing flows or you lose the side channels," he said. "I feel from now on they'll incorporate the flushing flows into their management strategy."

### Balancing needs

The BuRec's Davies said any incorporation of flushing flows into the dam's management must be sensitive to the Bighorn Reservoir's water level.

"It has to be carefully evaluated with the available water supply," he said.

The experiment last week dropped the reservoir's pool by 2 feet. Any drop in the reservoir's level is a concern to those who recreate there and to the town of Lovell, Wyo., which benefits from traffic when people visit the Bighorn Canyon National Recreation Area, which surrounds the lake. In the past, the group Friends of Bighorn Lake has been adamant about maintaining water levels in the reservoir to support Lovell-area businesses and provide boating opportunities.

But Bob Croft, of the Friends group, said reservoir and river interests are working together on the issue of side-channel restoration, as well as sedimentation that is choking off the lifespan of the reservoir that feeds the river.

"There has to be a willingness by all of us to take the risk for a few feet of water," Croft said.

Fischer said he thinks the demands of lake and river users can both be met.

"I think everyone wins," Fischer said. "It's not in opposition to the lake users. If we can mitigate the flood problem with a more efficient river system, we can tolerate higher flows in the spring."

Davies called the bureau's work a multiyear study. The agency wants to gather more data at a higher flow -- 10,000 to 12,000 cfs -- but not this year.

"This is all just kind of an experiment," Fischer said. "The dam is an artificial thing and we're just starting to understand the effects it's had on the lower part of the river."

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