http://montanauntamed.com/fishing/article_d89d0e7e-3eda-5d79-86ea-6b84a4759136.html

Bighorn River management analysis will be done by fall, Bureau of Reclamation says

BRETT FRENCH
Apr 24, 2018

Driftwood collects in coves and along the shoreline, floated up and off a bank somewhere upstream as the spring water rises at Bighorn Reservoir in 2011.

BRETT FRENCH,Gazette Staff

BRETT FRENCH

By next fall, the Bureau of Reclamation's Montana staff is hoping to have fine-tuned a modeling program capable of telling the agency how well it is operating Yellowtail Dam on Bighorn Reservoir.

"This is a very complex question," said Steve Davies, area manager of the bureau, during a meeting of user groups in Billings on Tuesday.

"We need to sort out the hydrology."

At issue is the bureau's operating criteria, instituted in 2010 after two years of development. The criteria uses forecasts of snowpack, runoff and rainfall to try and predict how much water to keep in Bighorn Reservoir and how much to release downstream into the popular Bighorn River trout fishery.

Since this winter the bureau has faced a full-court press from the Bighorn River Alliance — a user group of landowners, fishing guides and outfitters — who compiled a report that argues the operating criteria are flawed. The criteria, the Alliance claims, are wasting water that could be used for power generation, result in high river flows that is eroding valuable agricultural land, washing trout eggs downstream, and favors reservoir users over river operations by holding back water too late, and then releasing too much at high flows.

The Alliance has received backing from the Montana Fish and Wildlife Commission, Montana Gov. Steve Bullock and Sen. Jon Tester to turn up the heat on the Bureau of Reclamation.

Since the 70-mile long reservoir straddles the Wyoming-Montana border, users on the southern end in Wyoming would rather have the lake level high enough to launch and float their boats, preferably at Horseshoe Bend Marina, which has more services and amenities and is closer to the town of Lovell, Wyoming. That constituency argues that the criteria is working, for the most part, except in extreme water years.

Since 2010, the dam operators have seen two record-setting high water years, 2011 and 2017. So one question the bureau is hoping to answer with its new modeling is: If the agency had known how much water was coming its way, what could it have done

differently?

Even if the reservoir had been drawn down 12 more feet in 2017, allowing about 60,000 acre feet more of water storage, it would have dropped peak releases out of the dam by only 400 cubic feet per second — from 14,000 to 13,600 cfs, according to the bureau's Clayton Jordan, who used a more simplistic model to explain the scenario.

In a statistical review of the post 2010 dam operations, the bureau said the operating criteria worked well in years with low flows, yet since then the agency has seen many more times when the river flow is exceeding 6,000 cfs. Likewise, the flood control releases and duration were greater than expected. The caveat, the bureau noted, was that a statistical review "cannot isolate the cause of the differences."

"We get that. We know your jobs are hard," said Anne Marie Emery, executive director of the Bighorn River Alliance.

But Emery said the river has become channelized from high water years, and the operating criteria were designed in a time of drought.

"The current operating criteria were not changed to handle what we're seeing today," she said. "Eight out of 10 years have been this way. You're going to have to adjust to Mother Nature."

Jordan Lanini, who will lead the bureau's technical modeling, said, "We're not predicting at the end of this we'll have an answer."

That's partly because the agency is seeing "widely varying" inflows and timing of inflows — such as heavy rainfall — that are more difficult to forecast and plan for. Such problems with forecasting can put the modeling off by as much as a million acre feet of water, Lanini said, which is more than the reservoir can hold if it was empty.

He noted that Bighorn Reservoir has had higher pool elevations than prior to the new operating criteria — as much as 10 feet higher — an argument the Bighorn River Alliance has made. Holding more water in the reservoir helps reservoir users launch earlier in the spring.

“It seems like that might be related to operating criteria, but again we have all of these other factors,” Lanini said.