



MEMORANDUM

April 7, 2011

TO: BOARD OF DIRECTORS
ERIC KUHN, GENERAL MANAGER
DAN BIRCH, DEPUTY GENERAL MANAGER

FROM: RAY TENNEY, P.E., DON MEYER, P.E.

SUBJECT: ELKHEAD RESERVOIR

We want to provide you with a status report on Elkhead Reservoir issues and a summary of projected 2011 reservoir operations. **No Board action is requested.**

Reservoir Operations

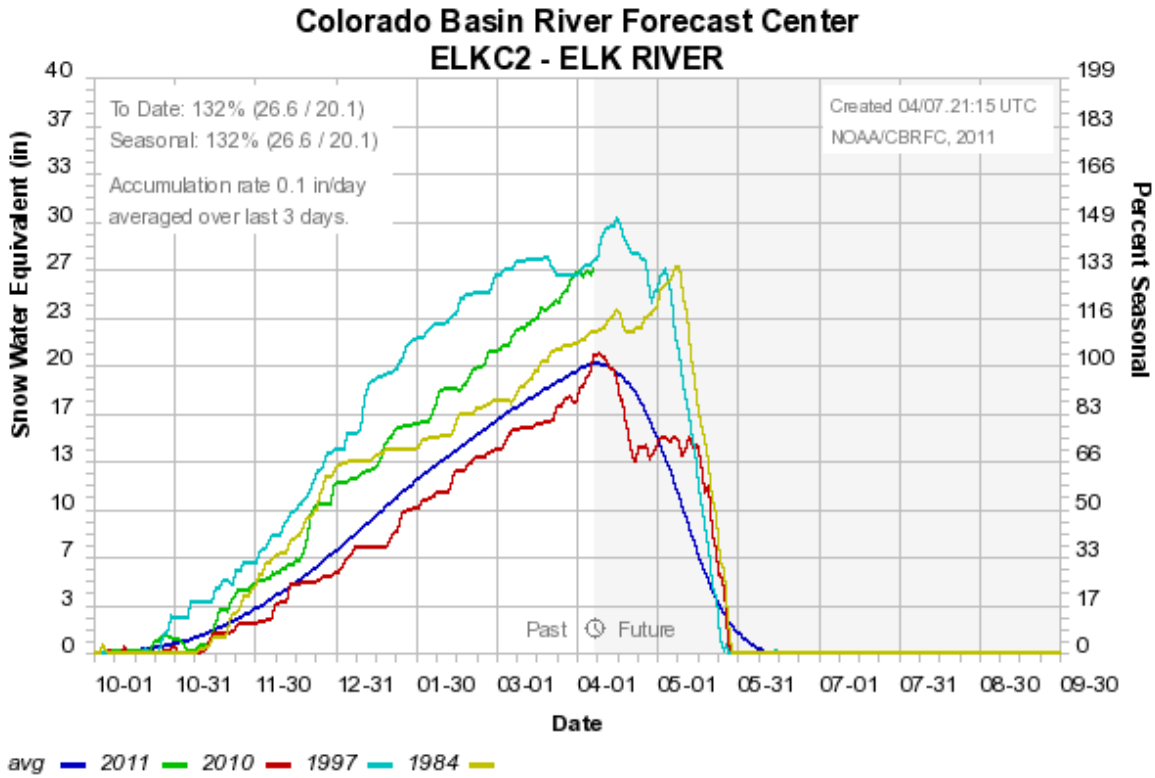
The 2011 runoff into Elkhead Reservoir is anticipated to be well above normal. Yampa Basin snowpack above Maybell is currently 136% of average for this date. The snowpack in the adjacent Elk River Basin as defined by SNOTEL data (graph below) is 132% of average for and similar to the 1997 snowpack on this date. In 1997, total discharge at the Elkhead Creek above Long Gulch gage was 135,000 af which was about 170% of average. Noting on the graph below the runoff in 1997 did include some snow which had already melted by this date so 2011 runoff may not have quite as large a total volume.

The NRCS is installing a new Snotel gage above the reservoir near Madden Peak. The River District contributed \$10,000 and the CWCB \$15,000 for installation of the site. The NRCS will operate and maintain the facility above Elkhead Reservoir with no further financial obligation on our part. It is unlikely that this SNOTEL will be up and operating until the 2012 water year at the earliest.

The Recovery Program exercised their lease option for 500 acre-feet in 2010 and because of good Yampa River flows carried over the 500 acre-feet into 2011 giving them a total pool in Elkhead Reservoir of 5,500 acre-feet in 2011. We expect the Recovery Program to take this entire amount in 2011 as the 500 acre-feet of lease water can only be carried over once.

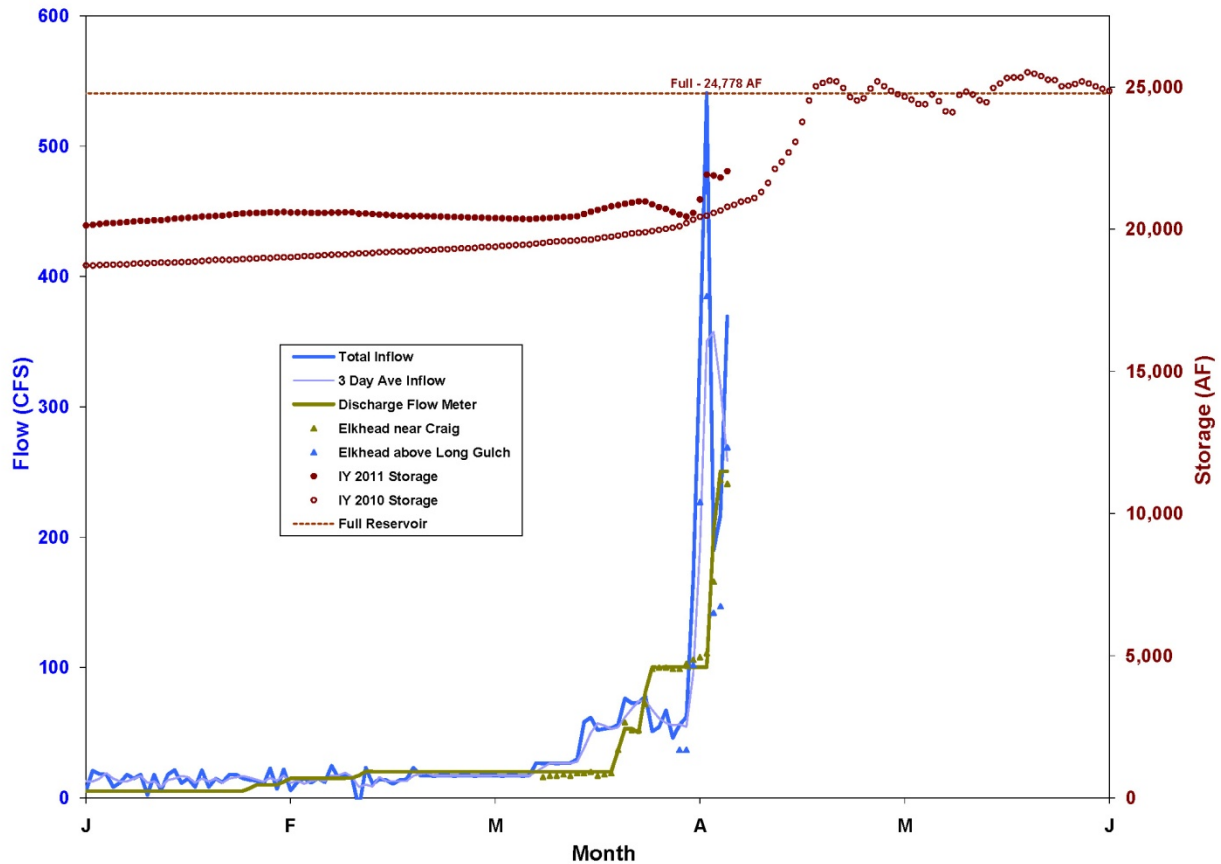
Upper Yampa Water Conservancy District (UYWCD) leased 6,000 acre-feet in Elkhead Reservoir in 2010 to allow lowering of Stagecoach Reservoir to facilitate raising of the dam. Our lease agreement with UYWCD allows renewal of the lease in 2011 if necessary. UYWCD advises some water lease from Elkhead Reservoir may be necessary in 2011 because UYWCD is

currently operating to make additional space in Stagecoach Reservoir to create an opportunity to make absolute some of the Four Counties water rights decreed for storage in Stagecoach Reservoir. As the opportunity to store water available at the original location of the Four Counties project head gates does not occur until June, UYWCD may not be able to advise until July if they will lease Elkhead Reservoir water to make up any fill deficit at Stagecoach Reservoir.



Operations to date (graph below) have been typical for this time of year, increasing releases in order to delay spill, with the goal of containment of non-native fish. Once spill occurs, the outlet will be operated to minimize spill volume as in past years.

Elkhead Reservoir IY 2011 Flows and Storage



Non-Native Fish

Elkhead Reservoir has significant populations of small mouth bass, crappie and trout popular with the fishing public. The small mouth bass have been documented to escape from Elkhead Reservoir into the Yampa River where they prey on and compete with the listed native fishes. This is why the outlets at Elkhead Reservoir were screened. Due to cost and debris concerns the spillway at Elkhead Reservoir was not screened.

The Recovery Program spends a few \$100,000's annually to remove non-native small mouth bass and northern pike from the Yampa River. The adult small mouth bass are tagged and relocated to Elkhead Reservoir to make them available to the fishing public. This relocation is a requirement under the collection permit issued by the CDOW for the fish removal effort and part of the Yampa Management Plan. The tagged bass are showing up back in the Yampa River after gaining considerable weight and girth in Elkhead Reservoir. As it costs the Recovery Program anywhere from \$50 to \$250 per bass or pike removed from the Yampa River (including those too small to relocate) and numbers in the river are not being suppressed, emphasis is now on eliminating relocation of captured fish. In addition the potential of escape of non-native fish from Elkhead Reservoir is coming under scrutiny by the CDOW and the Recovery Program.

Our agreement for enlargement of Elkhead Reservoir obligates the Recovery Program for all non-native fish containment costs. We are cooperating with the Recovery Program to see if we can reduce the days our spillway operates to reduce spillage of fish. CDOW will be conducting some studies to see how much fish from Elkhead Reservoir may be contributing to the non-native populations in the Yampa River. The CDOW and the Recovery Program are handling all public relations efforts related to these changes in fishery management in the Yampa River basin.

Elkhead Hydroelectric License Exemption

The Federal Energy Regulatory Commission (FERC) issues licenses or license exemptions for hydroelectric projects. This process can be arduous and expensive. In 2010 the Colorado Governor's Energy Office (GEO) signed a Memorandum of Agreement (MOA) with the FERC for a pilot program to streamline the license exemption process for 20 small hydro electric projects in Colorado. Our proposal for a power plant at Elkhead Dam was accepted into this process.

If the process works as designed the GEO will present to FERC the license exemption applications completed and ready for FERC action in September 2011. Staff is working to prepare the supporting documentation and analyze the pros and cons of obtaining the license exemption. The GEO has retained consultants to walk the projects through the streamlined process to get project buy-in with all the resource agencies normally included in the FERC's process facilitating approval.

The license exemption is a forever grant without need for renewal and the stream lined GEO process offers a great opportunity. While Elkhead Dam appears to have excellent hydro power potential the market for the power may be the limiting factor. Having a license exemption may make marketing the power easier as the project would be closer to reality.

Holding a license exemption without building the power plant is not without cost as the FERC adds an additional layer of regulatory scrutiny and related costs as long as the exemption is held. The River District can exit the process at any time or surrender the license exemption if we determine it is not in our best interest to continue with hydro power development. We will keep the Board advised of our progress on these analyses.

State Park at Elkhead Reservoir

Elkhead Reservoir has been spared the axe in the State Park budget trimming. This may be in part because the River District and Craig provide \$15,000 each in annual operating subsidy to State Parks for Elkhead operations. Because of very low historic use in the early spring the boat ramps at Elkhead Reservoir will not be open to the public until the week before Memorial Day. State funding is continuing to be provided for full time aquatic nuisance species inspections of all launching boats at Elkhead Reservoir.