Effects Of Spill On The Kootenai River Below Libby Dam In 2006

Ryan M. Sylvester, Montana Fish, Wildlife and Parks, 475 Fish Hatchery Road, Libby, MT 59923, rysylvester@mt.gov

Brian L. Marotz, Montana Fish, Wildlife and Parks, 490 orth Meridian Road, Kalispell, MT 59901, bmarotz@mt.gov

Mismanagement of reservoir elevations in the spring of 2006 caused forced spill to occur from Libby Dam on the Kootenai River from 8 June 2006 to 27 June 2006. Spill discharge reached a maximum of 31,000 ft^3/sec (cfs), leading to the highest discharge of 55,000 cfs from Libby Dam since regulated flows began in 1974. Spill discharges above approximately 1200 cfs cause gas supersaturation and subsequent violation of the state and federal water quality standards of 110 percent. Gas levels reached a maximum of 133.5 percent and the 110 percent saturation level was exceeded for 18.5 consecutive days (446 hrs) below the Dam. Initially, higher percentages of fishes exhibited gas bubble trauma symptoms on the left bank when compared to the right bank, but after 14 days of spill, 93.0 percent of rainbow trout, 82.0 percent of mountain whitefish, and 100.0 percent of bull trout exhibited symptoms of gas bubble trauma. No mass mortality of fishes was seen in the river below the Dam, with the exception of kokanee that passed over the spillway. The long term effects on fishes below the dam are unknown at this time, but monitoring will continue in the spring of 2007 for rainbow and bull trout populations, downstream displacement of PIT tagged fishes, and genetic analysis of the bull trout population using pre and post spill genetic analyses.