

Title: Managing Winter Flows on the Fryingpan: Enhancing Minimum Flows to Benefit Aquatic Life

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Oral Presentation

Abstract:

The 2004 and 2006 studies of Macroinvertebrate Community Responses to Winter Flows on the Fryingpan River commissioned by Roaring Fork Conservancy (RFC) found: 1) the magnitude of discharge may be the most important factor that influences macroinvertebrates during the winter months and 2) the formation and frequency of occurrence of anchor ice appears to be a contributing influence on macroinvertebrate community structure and function. Recent data suggests that two or more concurrent winters with higher flows may be necessary to achieve an optimum balance in the macroinvertebrate community.

Given this information, RFC began discussions with the Colorado River Water Conservation District ("River District") regarding the possibility of leasing water currently held under contract by the District for release from Ruedi Reservoir during the winter months under certain conditions. This lease, to be held and funded by the CWCB, will supplement winter flows to minimize conditions prime for anchor ice formation. This lease required the River District board to pass a provision allowing for water to be leased for environmental purposes at the same price as agricultural leases. The objectives of the lease are 1) to maintain Fryingpan River flows at a minimum of 70 cfs, or 31 cfs above the current minimum flow of 39 cfs when temperatures and low flows combine to create anchor ice and 2) enhance environmental flows as determined via consult with Colorado Parks and Wildlife (i.e. post spawning). A combination of flow levels and temperature creates icing conditions, so it is difficult to predict with certainty when, or in what amount, releases would be necessary. For instance, extremely low temperatures could create anchor ice even when flows are already above the minimum of 39 cfs, while high temperatures could lead to ice-free conditions even when flows are at 39 cfs or below. RFC, through their river monitoring system and analysis of weather conditions, will call for additional releases when conditions are conducive to the formation of anchor ice or when conditions might necessitate flows for environmental enhancement. Additional releases would be limited to the amount necessary to bring Fryingpan flows at Ruedi Dam up to 70 cfs. Releases would continue until anchor ice conditions abated or environmental enhancement is achieved, at which time RFC will notify the Bureau of Reclamation to halt additional releases. This cooperative leasing process shows great potential to benefit the ecological health of the Fryingpan, and potentially create an example for other opportunities for environmental flow protections.