

Snake/Salt Basin Advisory Group
Meeting Record
Jackson, Wyoming
July 21, 2004

Welcome

Facilitator Dale Gregory welcomed the group and the meeting was called to order at 6:03 p.m. All attendees introduced themselves, followed by a review of the overall meeting agenda. A sign-in sheet was passed around to record attendance. The next meeting is scheduled for October 13 in Jackson.

Water Development Commission Report

Barry Lawrence updated the BAG on the status of the plans for the other basins. Barry discussed the status of all basin studies, and agendas for future meetings. Handouts from the prior meeting were distributed.

Wyoming Instream Flow Issues

Tom Annear, Wyoming Game and Fish Department (WGFD), indicated that there are three concepts in understanding instream flow: science, public involvement and legal/institutional. Science describes the stream's flow regime, which includes various components including water quality, flushing flow, habitat flow, channel and riparian maintenance, and channel forming flow. The public involvement component includes public education and input, whereas the legal/institutional component is based in the Wyoming constitution, statutes and federal laws. Instream flow is not a major issue in this basin as 98% of the water goes to the State of Idaho due to compact allocations. Tom indicated that the WGFD primarily maintains existing flow patterns and fisheries on public lands as opposed to flow restoration on private lands. Some of the instream flow issues include periodic low flow; return flows, interstate use of water, the legality of instream flow use, and the building of dams. Discussion followed.

Flat Creek Watershed Enhancement Project/Fish Creek GW Study

Brian Remlinger, Teton County Conservation District (TCCD), indicated that Flat Creek is listed as an impaired stream. Management goals include the reduction of the quantities of pollutants and sediment from stormwater runoff; the improvement of fisheries and aquatic habitat; and the reduction of winter overbank flooding caused by frazil and anchor ice. Brian presented a brief history of the project and related timeframes. Winter icing and flooding as well as pool-riffle characteristics of the creek are of major concern. The town of Jackson has been pumping warmer water from thaw wells into Flat Creek to reduce the production of frazil ice during the winter. Potential rehabilitation measures include man-made fish structures and other structures to aid in sediment deposition and bank building to narrow the creek channel.

Determination of Local Groundwater and Surface Water Interactions using Heat as a Tracer near Fish Creek

In a joint study with the US Geological Survey, the District plans to determine temperature gradients to model flow in and out of Fish Creek. The model output will be used to determine aquifer factors such as apparent hydraulic conductivity, seepage velocity of the water moving in or out of the creek, as well as the time periods of the gains or losses in the creek. Brian went on to discuss losing and gaining reaches as related to temperature. A summary of the data collected and results of the model output will be published in a USGS Scientific Investigations Report.

Fecal Bacteria Source Tracking in Fish Creek and Flat Creek Watersheds

Brian described the sampling sites and methods. 162 samples were collected over a 9-month period on ten sites. Preliminary results were shared with the group and included the presence of e coli bacteria from birds, deer/elk, canines and rodents.

UW/National Park Service Research Station Activities

Hank Harlow, Department of Zoology and Physiology, University of Wyoming, stated that the joint research station was established in the 1950's. The station maintains academic interfaces with researchers around the world. Since 1977, there have been 200+ research projects and more than 500 publications. The station provides various functions and physical resources, including laboratories, a library, and teaching opportunities.

Hank continued by indicating that the research is applied to park management, such as elk migration, brucellosis, elk mortality, coyotes, fire ecology, snowmobiles and related impacts, fungi, amphibians, and thermal mapping. Basic research is conducted along with selected studies related to Jackson Lake drawdown and species of plant growth as related to water lowering/stability of water level affect on plant species. Other studies include water quality issues, earthquake risks, aquatic animals and related river habitat.

Discussion followed.

Land Use and Nitrogen Cycling in Jackson Hole Streams

Bob Hall, Department of Zoology and Physiology, University of Wyoming, and Jennifer Tank, University of Notre Dame, are jointly conducting nitrogen deposition research in the Teton area. Bob indicated that small streams receiving runoff have high rates of nitrogen processing and removal. Nitrates are considered a global pollutant. While low amounts of nitrogen exist in the Snake, there could be increasing rates of nitrogen deposition in the area.

Bob described the nitrogen cycle. In order to determine what controls the degree to which streams transform, store, and transport nitrogen; nitrate uptake, storage and denitrification are being measured on nine streams of contrasting land use in

the Jackson area. Research is indicating that concentrations of nitrate vary from 0.1 to 10,000 parts per billion, and uptake is influenced by biota, stream shape and hydraulics.

The agricultural and urban streams in the Jackson area are very productive. High productivity equals high uptake. Bob indicated that denitrification can not be detected. Jackson area streams are a benchmark for low nitrates and are an endpoint for streams with uptake driven by primary production.

Discussion followed.

The meeting adjourned at 8:43 p.m.