

Henry's Fork Watershed Council

Tuesday, February 13, 2018

Participants began registering at 8 a.m. at the Henry's Fork Foundation Community Campus in Ashton.

Brandon Hoffner, of the Henry's Fork Foundation (HFF), called the meeting to order. Brandon thanked everyone for traveling to Ashton. Participants introduced themselves. Brandon explained that the Watershed Council began in 1993 in an effort to build trust and to find a way to collaborate, solve problems, and open lines of communications among the various stakeholders in the watershed. Brandon called for two minutes of silence, noting that it has been a tradition of the council at every meeting since its inception. Brandon then opened the meeting up to any announcements or comments.

Community Building

Brandon Hoffner expressed that he is glad to be working with Aaron Dalling as co-facilitator of the Henry's Fork Watershed Council (HFWC). After Dale Swensen's retirement, Aaron became Executive Director of Fremont-Madison Irrigation District (FMID).

Bryce Contor explained that Stan Clark's funeral would take place after the HFWC meeting. Stan was a great friend and mentor to Bryce.

Keith Esplin shared that Recharge Development Corporation (RDC) and the Eastern Idaho Water Rights Coalition (EIWRC) are sponsoring an Eastern Idaho Water Supply Alternatives Symposium on February 21, 2018 at the Shilo Inn in Idaho Falls. More information can be found at <http://www.easternidahowater.org/>.

Mark Chandler shared concerns about the alternatives being considered by ITD for Targhee Pass, specifically the alternative that includes highway overpasses. His primary concern is loss of critical habitat. He expressed that funds might be better spent towards securing access and protecting critical habitat. He also mentioned that there are similar concerns here as there were in Jackson Hole (e.g., growth), which was built in the middle of critical winter range for species like elk.

Henry's Fork Water Supply

Rob Van Kirk, HFF

January and February, at least until the last day or two, have been very warm, limiting snow accumulation at the lower-elevation sites in the watershed. Nonetheless, water-year precipitation is 94% of mean for the date and snow-water-equivalent (SWE) is 97% of the long-term mean and 103% of the 30-year median. As has been the case over the past few years, precipitation relative to average has been highest in the Fall River subwatershed and lowest in the upper Henry's Fork. SWE tracked last year's accumulation fairly closely during January but has since

leveled off, whereas last year's SWE accumulation during February was well above average. Because of the warm weather, as well as last year's above-average precipitation, streamflow throughout the watershed has been average or above-average all winter. Reach gain between Henry's Lake and Island Park Reservoir has steadily increased since late summer and is now above average, indicating good recovery of the deep Yellowstone Plateau aquifers from the 2013-2016 drought. Outflow from both Island Park Reservoir and Henry's Lake has been just a hair less than natural stream inflow. As a result, both reservoirs have gained volume from direct precipitation during periods of high precipitation and lost a little water during the dry spells. Both reservoirs are well above average in content for this time of year. Current medium-term weather forecasts call for below-average temperatures and above-average precipitation. At this point, cold temperatures are just as important as more precipitation, in order to keep the snow we already have on the ground as long as possible.

Mack's Inn Wastewater Treatment Plant

David Noel, Forsgren Associates

In 1975, a Facility Planning Study was conducted and identified some environmental needs. In 1981 the treatment plant was completed at Mack's Inn. The system was updated in 1988 and ended up with a lagoon that could handle an average flow of 0.27 cfs. Today the average flow is 0.28 cfs. In the next planning period, they expect that average flow to go up to 0.43 cfs. Also, the system was designed for an average load of 334 lbs/day, but is currently experiencing an average of 1,175 lbs/day in the summer, so there are significant overloading issues. A good pump station is designed for 20 years, this treatment plant is in year 38.

Options to address this issue include river discharge, which involves more stringent requirements be met, and mechanical treatment, which is efficient, would allow consistent ammonia treatment, and customized nutrient removal. Why is additional land application not an option? The U.S. Forest Service is not willing to provide additional land. They'd prefer the "County have a well thought out long term plan and support a treatment plant to treat the sewage so it can be discharged into the groundwater or river."

To summarize, flows have increased an average of 12% over 5 years and plant loading has increased an average of 240% over the past 5 years. This suggests increased use, but doesn't correlate with building permits. The demands on the treatment plant are changing and the plant will run out of disposal capacity before the service obligation is met. There are currently 600 platted lots without buildings on them in the service area.

Folks asked if, as customers, they could expect a rate increase. David explained that it is hard to say. Possibly, but not likely an exponential increase. Someone else asked if they are monitoring metals concentration because of degradation of the plant facilities. No, they are simply monitoring what the permits require.

Preliminary nutrient analysis of the Upper Henry's Fork

Melissa Muradian, HFF

As part of an extensive water-quality monitoring network, HFF has been collecting data on nutrient content at several locations along the Henry's Fork. HFF collects concentration of Total Nitrogen (TN) and Total Phosphorus (TP). Available nutrients in an aquatic system are important because the entire system's growth is fueled from the bottom up: primary producers use available nutrients and the sun's energy to grow, and these organisms feed other organisms or provide important habitat, and so on. TN and TP are especially important because organisms use nutrients in species-specific ratios and usually either TN or TP are in short supply relative to other nutrients; meaning if either TN or TP are added to the system then productivity increases.

Through preliminary data collection and analysis, HFF has determined three important characteristics of the Henry's Fork. First, the reach from Mack's Inn to Island Park reservoir (IP) is phosphorus limited for most of the year. Second, the Buffalo River—a spring-fed tributary—is also phosphorus limited for most of the year. Finally, river reaches from below Island Park reservoir to Riverside campground are neither phosphorus-limited nor nitrogen-limited. The latter implies two important points: IP reservoir is storing and producing phosphorus, and as a result, the downstream reaches have nutrient ratios that promote growth for longer periods of the year than the reach upstream of IP. These preliminary conclusions corroborate what has been heard anecdotally and what has been seen in earlier data collection, which is the Henry's Fork upstream of IP is lower in nutrients than the downstream reaches. This explains why the fishery isn't as productive as, say, the Harriman Ranch.

Using history of the region along with our physical understanding of how this system works, HFF thinks eras of productivity in the reach from Mack's Inn to IP are as follows: prior to 1900 productivity was low, then as increased settlement brought septic tanks—which leak and provide a source of increased nutrients to the system—productivity increased and stayed high from approximately 1940-1985. Then the system changed to a less productive state with fewer macrophytes and fewer big fish. The decline in the fishery was coincident with conversion from septic tanks to a sewer system, namely the Mack's Inn wastewater treatment plant.

HFF sees the recent wastewater treatment plan and proposal that Brandon Harris and David Noel presented as a much-needed opportunity to maximize the fishery from Mack's Inn to IP. Our goal is to promote conditions that will allow that reach to become at least as productive as it was from 1940-1985 by managing nutrient concentrations and ratios that will increase productivity in the reach from Mack's Inn to IP, *without* increasing productivity inside IP reservoir. HFF is prepared to scientifically inform the wastewater treatment and disposal process to attain our goals, and the goals of other stakeholders. HFF is well positioned to inform this process since HFF has already been conducting data collection, research, and analysis on nutrients and productivity in these reaches, and has plans to increase efforts toward fully understanding the relationship between nutrient ratios and productivity here. HFF believes that maximizing the fishery upstream of IP reservoir will have socio-economic benefits to the communities of Mack's Inn and Island Park. As more people come to recreate in our area, this will provide additional

opportunities for high-quality recreation. And finally, by maximizing the fishery here, the downstream fisheries will be protected by diffusing this increasing fishing pressure across the watershed.

Analysis and conceptual design for a project to benefit breeding trumpeter swans and provide stock water for Flat Ranch cattle operation

Matthew Ward, The Nature Conservancy

With the Flat Ranch, The Nature Conservancy strives to demonstrate that a sustainably managed ranch can benefit both people and nature. The Flat Ranch aims to increase habitat and recreational opportunities. This project proposes a 10-20 acre open water wetland, which would protect water quality, provide habitat, store flood waters, and maintain flows during dry periods. The project hopes to restore a nest site for trumpeter swans, and would increase stock water options for the cattle operation as well as increase forage and habitat for other birds. The breeding objective for trumpeter swans in the Upper Henry's Fork area is 8 brooding pairs. That goal is not being met.

Currently, this area is a flood irrigated pasture (from May – Oct each year), but the flat nature of the landscape is a design constraint. There is evaporation of about 10-21 acre-feet, seepage of 10-21 acre-feet, and the total input would be 21-42 acre-feet (0.07-0.14 cfs). The Nature Conservancy holds water rights and knows that there will be a change in use or diversion.

Community Building and Wrap-Up

Aaron Dalling, FMID, asked for one minute of silence to wrap-up the meeting before closing comments and announcements.

Paul Faulkner clarified that swans are very territorial, they don't want to be able to see another brooding pair, so the Flat Ranch project would be for one pair.

Gordon Rattray shared that he appreciated the good presentations today and the use of scientific data to come up with plans to improve our environment.

The meeting was adjourned at 10:30.