

Henry's Fork Watershed Field Tour Tuesday, August 12, 2014

Participants began gathering at 8:30 a.m. at the Fremont-Madison Irrigation District office in St. Anthony, then met others at the North Fremont High School parking lot in Ashton to travel via the Mesa Falls Scenic Byway to the Island Park Ranger Station near Pond's Lodge, where introductions were made. A group of 39 people carpooled to the first stop on the tour, the Sheridan Creek Bridge on the Green Canyon Road west of Island Park Reservoir.

Sheridan Creek Restoration Project

Brandon Hoffner of HFF talked about the history of the Sheridan Creek restoration. The Sheridan Creek project was done in the late 1990s to return the creek to its original channel. The riparian enhancement project improved ten diversion structures, eliminated grazing from a riparian pasture on Harriman State Park land, and added willows along the creek for erosion control. A few years ago, the Watershed Council began working with Harriman State Park, with assistance from Idaho Master Naturalists, to maintain fencing and keep cattle out of the restoration area, and to inform the grazing permittees and ranger riders of the importance of the project.

Harriman Manager John Sullivan said the park has \$3,200 left in a grant that needs to be spent by 2015. He needs to decide whether to spend it to repair fences or to repair or replace the existing Powder River fencing where Sheridan Creek flows into Island Park Reservoir. His decision hinges on bigger issues, such as raising the elevation of Island Park Reservoir .

Earlier this year, the Watershed Council WIRE'd a water quality monitoring project being conducted by HFF. Sheridan Creek at the Green Canyon Road crossing is one of the sampling locations. "Although we do not yet know which alternatives will eventually be implemented, we do know that the State has allocated funds to study enlargement of Island Park Reservoir. This study would benefit greatly from data that can be used to assess the role Island Park Reservoir currently plays in processes such as sediment and nutrient delivery to the Henry's Fork," the project evaluation states.

Enlarging the pool of the Reservoir would impact the west end of the reservoir, in the Sheridan Creek area. Rob Cavallaro, Tom Bassista, and Aaron McKarley of Idaho Fish and Game stated the agency's concerns about the wildlife impacts of raising the reservoir. Cavallaro talked about:

Elk – Shotgun Valley is very important as an elk mingling area, for transitional migration, and as key calving habitat. Thurmon Ridge is also important calving habitat. Sheridan Ridge from Yale Creek to Sheridan Creek provides calving grounds out of the forest with good forbe production and good cover that reduces predation by black bears.

Sage Grouse – The bulk of nesting for sage grouse is over Thurmon Ridge into the Sand Creek desert. They nest in May, hatch in June, and then move into wetland habitat. Broods move into the Shotgun Valley in wet areas related to the reservoir where there is good forbe production and insects.

Migratory Birds – Trude Island in the Reservoir is an important nesting area for California gulls and Caspian terns, which are both federally protected species. They estimate 5,000 gull nests, and the island is the only nesting area in Idaho for the terns. The island is also home to black crown night herons, pelicans, and canvasback ducks (duck nesting is denser than at Market Lake).

Idaho species of conservation importance – Sandhill cranes, which take four to five years to breed; longbilled curlews, found on Trude Island and Henry’s Lake Flat; shore birds such as plover and sandpipers found during drawdown when the island becomes a peninsula with mudflats.

Island Park Reservoir has become important habitat for a variety of bird species.

Ryan Newman of BOR said one of the alternatives listed in the Basin Study for enlarging the pool of the reservoir would use flood control space as storage. It calls for a four-foot pool raise (HFF’s Rob Van Kirk said the dam already has a one-foot rubber bladder in place so the raise would be another three feet.) The BOR is working with Idaho Department of Water Resources to collect data with LiDAR (a high-resolution remote-sensing technology) to map the ground around the reservoir to determine what areas would be impacted. The study is 65 percent to 70 percent complete. Once the data are collected, they will conduct a precursory analysis, followed by more detailed analysis. Other concerns also have to be addressed. Can the dam handle the larger pool? Will it require structural improvements? What will happen to homes on I.P. Bills Island? What about sewer systems in the impacted area? How many homes will be impacted? Results of the LiDAR study are expected by the end of August.

John Hildreth, hydrologist for BOR, explained the Upper Snake is managed as a system and includes Jackson Lake, Palisades Reservoir, Grassy Lake, Island Park Reservoir, Ririe Reservoir, American Falls Reservoir, Lake Walcott, and Milner Dam. During most water years, any additional water storage in Island Park would belong to American Falls storage rights holders, and the purpose of American Falls is to deliver irrigation water. The raise in the storage capacity of Island Park would increase the potential to hold that water higher in the reservoir system, thereby increasing water management flexibility. In wet years, the additional capacity would store “new water” that currently would flow unused past Milner.

Cynthia Bridge Clark from IDWR said the critical threshold issues are property and real estate assessments. The state’s interest in identifying more water supplies is driving the study.

Rob Van Kirk said Fremont-Madison Irrigation has filed on 20,000 acre-feet of additional storage in Island Park Reservoir. The three-foot raise is expected to produce 25,000 to 36,000 acre-feet. The Watershed Council has applied for a Watersmart grant to continue analysis of the Island Park expansion and other alternatives considered in the Henry’s Fork Basin Study.

John Sullivan questioned whether he should spend his grant money to replace 1,000 feet of fence. “I don’t want to put it in if it’s going to be inundated.” He also asked about an issue he has with Diversion #9 on Sheridan Creek. He asked if Harriman owns the diversion. Harriman sets the headgate to run water into the creek and puts a lock on it, but someone keeps cutting the

locks and pushing water in the other direction. Rob Keller from IDWR/Water District 01 said that water rights records would indicate who has the right to divert water at that headgate.

Island Park Dam

After lunch was served, the field tour continued at the dam, where Dave Peterson of Fall River Rural Electric explained the reservoir is full at 135,000 acre-feet. Prior to construction of the Island Park hydroelectric power plant, the reservoir reached 135,000 acre-feet when one foot of water spilled over the spillway. The power plant was built in 1994-95, and a one-foot inflatable rubber bladder was added to the bathtub spillway to allow the power plant to use the previously spilled water. The dam has three outlet structures (bottom-release gates, spillway, power-plant siphon) and an emergency spillway. Up to 960 cfs can be delivered to the power plant through the siphon. The plant generates 4.5 megawatts of power that goes into Fall River Electric's grid.

Rob Van Kirk said the BOR would have to determine if any retrofitting of the dam would be needed to expand the reservoir's capacity by installing a new rubber bladder that is three feet higher than the existing one. This three feet is currently authorized to store water for flood control when needed. One of the major engineering issues is how a flood flow could be passed at the dam if the flood-control space is being used for active storage. The State has allocated \$2.5 million to study the Island Park expansion, which includes assessment of real estate, engineering and other issues.

Dan Garren of Idaho Fish and Game said the Box Canyon stretch of the Henry's Fork below Island Park Dam is the top fishery in Idaho for rainbow trout. The amount of winter flow is critical for trout survival. More water December through February means more fish survive. Fish counts through the canyon average about 3,000 fish per mile. That number is down a little right now.

Rob Van Kirk talked about the long-term water quality monitoring project the Watershed Council WIRE'd earlier this year. HFF has installed four monitoring instruments, called sondes, which measure dissolved oxygen, chlorophyll, blue-green algae, conductivity, turbidity, temperature, and water depth. One of the sondes is located at the Box Canyon boat launch, below Island Park Reservoir. Each sonde runs on four D-cell batteries and so far, are holding their calibrations very well. The sondes collect data based on optical processes, and there is no optical process for phosphorus, the limiting nutrient in the Henry's Fork. Phosphorus concentrations are being measured from direct field samples and laboratory analysis. . Matt Cahoon, HFF conservation technician, pulled the sonde from its housing and explained its operation.

Dissolved oxygen concentration immediately downstream of the dam is not as good as it is downstream, where oxygen is added by inflow from the Buffalo River, natural aeration in riffles, and photosynthesis by aquatic vegetation. All water that passes through the power plant is aerated, which improves oxygen levels over what they would be otherwise.

Chester Dam

Dale Swensen of Fremont-Madison Irrigation explained the Chester Dam was built in 1938 as

part of the Island Park Dam project, along with Grassy Lake Dam and the Crosscut Canal, which delivers storage water to the lower Teton River. At capacity, the Crosscut carries 600 cfs, delivering 400 cfs to the Teton River and the other 200 cfs to branches of Fall River Canal. On the west side of Chester Dam, the Last Chance Canal delivers water to the Egin Bench.

In the 1980s, Energetics considered putting a hydro plant at Chester but abandoned plans when the price of natural gas dropped. Then in 2003, FMID obtained title to the dam and canal. Symbiotics obtained a FERC permit for a hydro project. FMID partnered with Symbiotics and Fall River Rural Electric to build the power plant and then assume ownership. Dave Peterson explained that work started in 2008 on the power house and canals, and in fall 2011, turbines were turning. The power plant produces 3.3 megawatts of power, but no water is flowing through the power plant at present because of three broken turbines. A rubber dam was added between November 2013 and March 2014, using coffer dams extending in the streambed. Brandon said the construction caused turbidity only five days during that time.

Dale said part of the mitigation for the project called for fish screens with one-quarter inch spacing on two canals, improved boat ramps, and public restrooms.

In addition, HFF, the Greater Yellowstone Coalition, Idaho Fish and Game, and U.S. Fish and Wildlife Service, in conjunction with FMID and Fall River Electric, received a federal grant and private donations to install a fish ladder to allow trout and other native fish species to move upstream in the Henry's Fork. Fish now have access to all of the Fall River drainage, resulting in greater survival and reproductive success.

Brandon explained HFF has installed a video system to track fish going through the ladder rather than trapping the fish, which is a high-maintenance system. A camera has been installed, and once calibrated correctly, will transmit the information on a regular schedule for counting fish numbers and size.

Dan Garren said the Chester project is good news for anglers. The fish ladder will produce a higher fish population downstream. Fish will be able to travel up and down the river for the first time since 1938.

The tour concluded after participants got a closer look at the fish screens and fish ladder.