



Water forecasts Key for Salmon Tract Irrigators

Predicting how much water is going to be available for stockholders in the Salmon River Canal Company has always been a challenge. When the Salmon Dam was completed in 1911 near Rogerson, Idaho, promoters expected the Salmon tract would rival the nearby Twin Falls Canal Company. In fact, several investors lost quite a bit of the money they made developing the 202,000-acre Twin Falls Canal Co. tract trying to pull off a second large project. It didn't take long to learn the Salmon Falls watershed was stingy and the irrigation project was quickly scaled back to about 25,000 acres. Old timers can count how many times the reservoir has filled in its 93-year history. That's why predicting runoff using data collected from snow survey sites has been so important for over half a century.

Water shortages and noxious weeds headed the list of problems that led farmers on the Salmon Tract to form a soil conservation district in 1950. At that time, people on the tract hauled domestic water about six months out of each year. Water shortages left many fertile fields uncultivated and rangeland undeveloped.

Measuring and forecasting water supplies has been a primary responsibility of the District since it began gathering snow data in 1954. Until the sites were automated in the 1990s, district supervisors manually collected data from 13 snow courses. Each April the Twin Falls Soil and Water Conservation District hosts a water forecast meeting to share information about the snowpack and streamflow projections to farmers on the Salmon Tract. That information is used to set the annual irrigation allocation. A full share is 1.167 acre-feet, but in practice irrigators consider 0.75 acre-feet a full share. Allocations have been as low as 0.1 acre-feet per share in 1961. An acre-foot will cover an acre to the depth of 12 inches.

Lyle Fuller farms on the Salmon Tract and is a past member of the Twin Falls SWCD. He remembers going on his first trip to check snow courses over Christmas break when he was a freshman in high school. Back then it took at least three days (if everything went well) to check the snow courses that dotted the Salmon Falls watershed. The canal company takes its name from the waterway's Nevada moniker... Salmon River. Once the stream crosses the Idaho border, it is known as Salmon Falls Creek. Surveyors didn't go alone. At that time, the Soil Conservation Service (known today as the Natural Resources Conservation Service) owned the equipment and provided one technician to help collect data. All the rest of the labor was provided on a voluntary basis by farmers, many of them members of the Twin Falls SWCD. "A lot of folks only went once," Fuller said.

Fuller remembers that the weather was good the first day out. He and his father went with this uncle and two cousins in a surplus military jeep that had been converted to a snow machine by adding tracks. The cab was too small to fit the entire crew so someone had to ski along behind. They stopped at the Ranger Station in Jarbidge, Nevada to build a fire before heading the 9 miles up to Bear Creek and then to Fox Creek. If all went well, the snow machine would take them the whole way. If not, someone would stay with the snow machine and either dig it out or repair it while the others skied up to the snow course.



Sno Ball... the converted army surplus snow survey jeep.

With today's technology, getting the current snow depth information is as simple as clicking a computer mouse. But back then, they had to take snow depth measurements every 100 feet across the half-mile wide snow course at Bear Creek. As more information was collected over the years, the Bear Creek snow course was shortened to five sampling sites, located about 50-feet apart.

The crew spent the night at Jarbidge Ranger Station, then headed out in miserable weather to build a fire at the Pole Creek Ranger Station before checking the snow courses at Pole Creek, Hummingbird Spring and Goat Creek. Fuller remembers skiing behind the snow machine with his father that day when his father suddenly waved down his uncle who was driving the snow machine to ask: "All day long the wind has been blowing snow into this cheek and now it's blowing into the other. Has the wind changed direction or did you turn around?"

On the third day, the crew checked sites at Cedar Creek, Deadline Ridge, Magic Mountain and the Shoshone Basin. It was a long three days and the surveyors still had 8 more snow courses to check. "You had to pack enough food and supplies for at least three days," Fuller said. "Very few times you made it without something breaking down." Most of the sites were set up in the fall of 1954, although U.S. Forest Service rangers had been collecting snowpack data at Bear Creek since 1931.

After graduating from high school and beginning to farm, Fuller was one of the regular snow surveyors for 30 years between the mid-1960s and mid-1990s. Over the years, helicopters gradually replaced the old snow machines. In time, modern snow machines replaced the helicopters. Beginning in the early 1990s, many of the old snow courses were upgraded with telemetry systems that allow the data to be automatically sent to a centralized site on a hourly or daily basis. Instead of checking the sties manually once a month, the NRCS now ground truths the sites at least once a year. "The means of collecting the data has changed, but the need for the information hasn't," Fuller said. "Without accurate snowpack data and streamflow forecasts, irrigators are left to guess about their water supply based on reservoir levels and snowpack observations. And with fuel and other input costs rising rapidly, that's not a risk farmers can afford to take these days," he added.

At the 51st annual water forecast meeting on April 6, 2006, irrigators on the Salmon Tract learned they could expect a full allotment of 1.1 acre-feet no matter which of the five streamflow projections were used. That was good news after 6 years of drought.

Cindy Snyder
Twin Falls Soil and Water Conservation District