Water Management in the Manuherikia Catchment. 14 October 2019.

Gold Mining

This catchment's early use of water abstraction was for Gold Mining, from the 1860's. The water rights were issued as "Mining Rights", a right to take water in perpetuity.

The management of these rights was based on a priority system based on the date of issue of the mining right. The highest priority could shut off all other rights until their right was filled. There was little or no environmental consideration attached to the water rights.

There were "Warden's Courts" to register water rights and to sort out any disputes. I imagine this would be a very entertaining place at times. The last Warden's Court in Alexandra closed in 1971.

Thomson Creek has eleven water races that were taking water in the gorge, for mining around the Matakanui area. There would have been a shortage of water at times, so much so that a water race bought water from Lauder Creek into Thomson's Creek. Only one of theses eleven races is still active, being the Matakanui Water Race operated by Omakau Irrigation (OAIC).

The Hawkdun race is 108 km long and was built in 1873 to take water to Naseby for gold mining. It now supplies water to Naseby township domestic supply, water for stockwater and for irrigation.

As gold mining declined in the area, some of the water rights were transferred to irrigation rights, still called mining rights. The RMA was passed in 1991, these mining rights were renamed "Deemed Permits" and given a 30-year term.

Falls Dam

Falls Dam was built in the 1930's by the Public Works Department. It was a depression job scheme, funded by the government. The Omakau Main Race irrigation scheme was built around the same time. The dam was built to conserve water for the Omakau scheme and augment the supply to the Lower Manuherikia scheme at Chatto Creek. The Manuherikia scheme was built earlier with the first water sales in 1922. Both Manuherikia and Omakau races were purpose built for irrigation. Blackstone Hill and Galloway schemes also take water from the Manuherikia.

Ministry of Works

I have been here helping operate the Falls Dam and river for 31 years and manager on OAIC for the same period.

Stories we have heard about water management from before this time are interesting. The stories suggest that when storage water was needed to keep the lower valley flowing, the release from the dam was set to maximum and left there, rain or drought. The farmers used to comment that there was a lot of water in the river, don't worry was the reply from the dam operators. Everything is fine. The storage operated this way would last six weeks. Then they were out of storage water. They would drain the dam completely leaving only a small flow flowing directly through the dam. The valley was very dry, the schemes were shut down to stockwater only until significant rains arrived. The racemen were effectively on holiday at this stage. The older farmers told us that they were lucky if they still had water by the new year. One farmer told of a game they played as children, trying to cross the Manuherikia, without getting water on the top of their feet.

I am not too sure how they priority system worked in the early days. But during one dry year the Resident Engineer of the Ministry of Works walked the river, asking people with low priorities to shut down to supply water to the high priorities. He got so much flack he never came back.

Around the 1980's there was a rationalisation of scheme operations. OAIC had seven racemen, that number was lowered to three, then they were all retired off and I got shifted from the Hawkdun Scheme. I was thrown in the deep end, the scheme was operating, but all the existing staff had left. Tricky times. John Anderson had been the overseer for all Central Otago irrigation schemes. During this time, the Crown was divesting itself of the irrigation schemes and selling them to the farmer irrigation companies. John took over management of Falls Dam operations.

John Anderson

John is the greatest piece of the more recent history working in the area on the irrigation schemes. He was called "Old Man River" at times, with 50 years of experience running the river and schemes. I worked with him for thirty years, starting on the Hawkdun Idaburn irrigation schemes, then shifting to Omakau Irrigation. When the schemes were privatised, John set up Aqua Irrigation and I left MWD or Works Corp as it was called and went to work with Aqua Irrigation. John got the contract to operate Hawkdun, Omakau and Manuherikia irrigation schemes. We operated the Falls Dam together. John worked the dam hard, only releasing enough to keep the irrigation and the river flowing. I used to get sent to adjust the dam most often as I live closest. It was sometimes twice a day. John used to check out the river near and around Alexandra. If it rained, we reduced the flow, when it was dry, we increased the flow. Under John's operation we managed to double the time storage was available and keep the irrigation and rivers flowing, from six weeks to 12 weeks.

River Operations

The Manuherikia River has four irrigation schemes and some private water users. The tributaries have a mix of private and scheme irrigation races. The tribs contribute to the flow in the Manuherikia. Dunstan Creek, Lauder Creek, Poolburn, Thomson Creek and Chatto Creek are the main tributaries.

Falls Dam made an agreement about 1990 with all water users, schemes and private users, to share the available water equally. When there was a water shortage, instead of calling priority and shutting people off, we all share the shortage and take the same cut in supply. We still use this agreement successfully today. About this time Falls Dam Co. set a minimum level at Falls Dam, to keep some water back in storage for habitat and emergency use.

When the storage is getting low, Falls Dam calls a restriction on its users. This has ranged from 20% to 80% restrictions. In the past when we are on 20% flows, it is treated as stockwater only. At this stage the valley is extremely dry. I have seen it dry out; it is not pretty. We are often only one good rain away from getting into the same position again. That is why we are very cautious about how we release water from the dam. We are keeping water back for use by everyone, including the river. We have had a water restriction about half of the time in the last 21 years. They range from minor restrictions to quite harsh restrictions.

Falls Dam installed an automated gate on its release valve. It was a great tool for making adjustments without the need to drive to the dam and back again. It was instrumental in conserving the storage water.

My job as River Manager is to keep the schemes supplied and the river flowing above the minimum flow at Ophir and at or above the voluntary minimum flow at Alexandra. The level at Campground is currently 900 l/s. I think during dry spells there was possibly only 300 l/s at Alexandra. This may be before the flow site was installed. It went to 400 odd l/s in the dry period of 2014/2015. ORC had let us operate Campground to 600 l/s that season and the drying weather inadvertently caused the river to drop more than expected. It takes 26 hours for the water to start arriving at Campground after release from the dam and it takes some communication with the water users to try and keep a constant flow.

Hydro

In the early 2000's Falls Dam Co. entered an agreement with Pioneer Generation to supply and install power generation at Falls Dam. It is working very well and gives the operator computer access to monitor and adjust the flow from the dam. We get a lot more info from Pioneer's computer, including the leakage flow. When the dam was first built it was thought to put in power generation, but it was never done.