

IDA VALLEY IRRIGATION SCHEME

This scheme is shown on the key map and also is map No. 1 of the detail series attached thereto. The water for this scheme was originally supplied by the Manorburn watershed, (Poolburn storage being added later) and the use of Manorburn water dates from 1865, for mining.

Referring to map No. 1, water was carried by the Upper Bonanza race to Hallidays Flat, then by the Lower Bonanza to Lows Saddle, then by Dip Creek down to Galloway (Map 2) where it was used for hydraulic sluicing. A storage reservoir, the Greenland, was built on the Manorburn and is now enclosed and submerged in the present Manorburn Dam.

The Syndicate and Blacks No. 3 races shown were also originally mining races, used for sluicing in the vicinity of Poolburn, and these could only have obtained material quantities of water from the Bonanza Race, dropped down a gully from Lows Saddle, in the same way as the Syndicate race is fed today.

By 1906, the rights and races had fallen into the hands of the Mines Department, who used the system to supply another area in Galloway via the Crawford Hills race (shown on Map 2).

This soon petered out and probably around 1908 the whole system was idle for want of payable ground. There is no doubt that the possibilities for irrigation were recognised by both landowners and Government officers, and it was around this time that surveys were carried out by Mr J.H. Dobson of this Department.

The late Mr F.W. Furkert was District Engineer, Dunedin, from 1908 to 1912, and it was certainly due to his interest in irrigation and his initiative and foresight that Ida Valley Irrigation scheme was developed. It was soon established that a storage reservoir in the Upper Manorburn sufficiently large to equalise the whole run off could be built, and this would completely change the then existing conditions under which the mining races could supply little water in the driest part of the year. The scheme was therefore designed to utilise the averaged run off to irrigate 12,000 acres, and comprised (a) Manorburn Dam (b) Enlargement of the Upper Bonanza race down to Hallidays Flat where water could be dropped into Moa Creek (c) Enlargement of the Lower Bonanza Race (d) Enlargement of the Syndicate and Blacks No. 3 races. (e) Extension of Blacks No. 3 back to Moa Creek (f) Small diverting weirs in Moa and Poolburn Creeks (g) A new race running from Moa Creek to Poolburn Creek and extending on down the east or German Hill side of the valley, and being named accordingly.

With this layout, the Syndicate race is fed by the Lower Bonanza, picking up water dropped from Lows Saddle, while the Blacks No. 3 and German Hill races are fed with water delivered down Moa Creek to Moa Creek weir, and by local stream flow in the Poolburn. Owing to the layout of the land and sections, relatively few distributaries are required and the system worked very satisfactorily except for heavy race losses in the Upper Bonanza due to high water velocities.

The scheme was built between 1912 and 1916, and water was first supplied in 1917.

In 1917 and 1918 there was considerable difficulty in getting irrigators interested and started on irrigation, and it was decided to divert some water to Galloway, since Lows Saddle commands Galloway also. Prior to this it had been proposed to supply Galloway by a difficult and costly race from the Manuherikia Scheme, but it was finally decided to supply from the Manorburn Dam early in 1920.

The combined area irrigated had grown to 5,900 acres by 22/23, and to 13,169 in 26/27, and 13,754 in 31/32.

In 1928 there arose some doubts as to whether the figure of 13,169 for 26/27 was not too great for safety, in view of the original figure of 12,000 and to the fact that gain from creeks as apart from storage had not proved as good as originally estimated. This was confirmed in 29/30 and 30/31, when some rationing had to be applied.

Because of this, and because the labour situation required employment to be found, Poolburn Dam was commenced in November 1929 and completed in April 1931.

It was confidently expected that this new storage which is big enough to store the whole run off, would put the matter beyond doubt, and in fact allow further land to be supplied, and if the water shed run off per square mile was as good as Manorburn, this would have been achieved.

Experience has shown that this gathering ground is not nearly as good as the Manorburn and prior to 1947 it was considered that only a small margin of safety existed.

There had been moderate rationing in 29/30, 30/31 and 41/42, but this had not given much concern to either the farmers or the Department's officers, because it was felt that the overall balance between maximum farm production and safe operation was a reasonable one. Normal operation continued up to 46/47 season, a period of 30 years since supplies commenced, and during this time the farmers had become very prosperous, and a very large production of wool and fat lambs had been achieved. While there is reason to think that even better results could be obtained with subdivision and closer farming, yet the scheme was considered to be completely successful from the aspect of operation and farming.

Then followed a succession of seasons that have tried the farmers and Department most sorely. 1946/47 was a very poor year for run-off, and supplies had to be cut 15% in 47/48. If next year had been normal, no great harm would have been done, but things rapidly became worse. Since then, rationing has had to be applied as follows.

47/48	Supplies reduced by	15%
48/49	" "	54%
49/50	" "	32%
50/51	" "	83%
51/52	" "	18%
52/53	" "	33%
53/54	Probably	10%

This has occasioned great loss of production and farm earnings and reduction of valuable flocks, and has given great concern to all interested parties.

A great deal of work has been put into investigations of Hope's Creek, the adjacent watershed to the west of Manorburn, in an endeavour to find a method of obtaining additional water at a reasonable cost.

The following are details of the supply system.

Manorburn Dam was completed in 1914, and is a concrete arch, 88 feet above stream bed, crest length 387 feet.

It contains 7,500 c.yd. of concrete and created a storage of 41,310 acre feet, with a maximum reservoir area of 1,745 acres. The whole of the upstream face was gunited in the autumns of 1949 and 1950.

A crack developed some years ago in the right or eastern abutment and repair by means of a new gravity abutment has been commenced but has not been completed because the level of water prevented the completion of the work. It will be finished as early as possible.

Poolburn Dam was completed in 1931, and is a concrete arch, 83 feet above stream bed, crest length 535 feet. It contains 14,000 c.yd. of concrete, and created a storage of 21,000 acre feet, with a maximum reservoir area of 1,120 acres.

Moa Creek Diverting weir is an arched dam 41 feet high and 200 feet long and stores 31 acre feet, which is used for day to day regulation.

Poolburn Diverting weir is an arched dam 37 feet high and 248 feet long and stores 48 acre feet which is used for daily regulation.

There are 73 miles of main race, of which 3 miles is partly concrete, and 29½ miles of distributary races.

The area under irrigation in a normal year is now 12,360 acres, while that portion of Galloway supplied is 1,515 acres, making a total of 13,875 acres from Poolburn and Manorburn reservoirs.

The maximum quantity normally carried in the Upper Bonanza Race is 85 cusecs.