

Accuracy of Hydrological Data Collected in the Lindis Catchment

Data from five hydrological monitoring stations on the main stem of the Lindis River have been collected over various periods of time. Two permanent flow monitoring stations, Lindis at Lindis Peak and Lindis at Ardgour Road have continuous datasets from 1976 and 2005 to present respectively. The three temporary sites; Lindis at SH8 and Lindis at Clutha Confluence have datasets over the 2007-08, 2014-15 and 2015-2016 summer seasons while the Lindis at Rutherfords dataset is from late September 2014 to present. The Lindis at Ardgour Road station was moved approximately 500 metres upstream from its original location in November 2009 due to a change in the river channel caused from a flood event in May 2009 resulting in a poor flow measurement control. The Lindis at Clutha Confluence flow monitoring station was reinstated in September 2014 at a site approximately 200 metres upstream from the location used in 2007.

Hydrological data for the Lindis Catchment have been collected by ORC and NIWA using national and international accepted methods and best practice to ensure they conform to standard levels of accuracy expected from a hydrological station. Data and flow gaugings have been processed through the Hilltop time-series manager to produce a continuous flow series for each of the stations. Comments have been added to the metadata records when a problem that may compromise data quality has been identified. The flow derived from applying the flow rating to the stage data to produce the continuous time-series record has been compared with the gauged flow to ensure the time-series data agrees with the gauged flow at the time. Flow gaugings have a calculated uncertainty of 8% or better based on ISO 748:2007. The majority of gaugings are within the +/-8% of the rated flow data for all stations on the main stem of the Lindis River.

Data produced from the two permanent flow monitoring stations on the main stem of the Lindis River are expected to have an accuracy of 10% or better over the full range of flows. Data from the three temporary stations have an expected accuracy of 10% or better for flows below 5 cumecs with exception of the Lindis at Clutha Confluence station during the 2014-15 season when a water level instrument fault caused data of lesser accuracy to be collected resulting in a large portion of the period being deleted and the remainder assigned as poor quality with a possible inaccuracy of 20%. However there is a high degree of confidence at the point at which zero flow occurred.