



SPECTRA/M-co Inflow Series Comparison



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Prepared By

A blue ink signature of Francie Morrow.

Francie Morrow
Hydrologist

A blue ink signature of Helli Tribe.

Helli Tribe
Hydrologist

Reviewed By

A blue ink signature of Dr Jack McConchie.

Dr Jack McConchie
Principal Water Resources Scientist

Opus International Consultants Limited

Environmental
Level 9, Majestic Centre, 100 Willis Street
PO Box 12 003, Wellington 6144,

New Zealand

Telephone: +64 4 471 7000

Facsimile: +64 4 499 3699

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1 Introduction

The Electricity Commission has requested that Opus International Consultants (Opus) and the National Institute of Water and Atmospheric Research (NIWA) undertake a comparison of 10 inflow series calculated for SPECTRA and M-co. The inflow series to be compared are:

- Actual Lake Taupo
- Natural Lake Taupo
- Lake Ohau
- Lake Pukaki
- Lake Tekapo
- Lake Wanaka
- Lake Wakatipu
- Lake Hawea
- Lake Te Anau
- Lake Manapouri

Each site has data from 1 July 1931 to 15 July 2008. The datasets have been compiled as weekly averages.

In the following report it is important to recognise that the two inflow series have been produced for different purposes, and by different methodologies. The Spectra data are derived from the analysis of quality-assured hydrometric data held in the Power Archive which is maintained by Opus International Consultants. The data are analysed retrospectively to generate the historic pattern of inflows with a high degree of consistency and accuracy. The M-co data are produced to provide a real-time estimate of the current inflows to the various lakes. These data are potentially less accurate, and the historic data are subject to less quality assurance. Therefore, some differences between the two datasets are to be expected. It is the magnitude of these differences that is the subject of this report.

The SPECTRA and M-co inflow series at the same site have been compared by: a visual comparison; simple statistical analysis; plots of the difference between each dataset; and cusum plots. With regard to the statistical summary, the comparison of the mean and median from each series can be considered relatively robust. However, the minimum and maximum can be affected by single 'extreme' values in either series. These measures therefore do not necessarily provide a good index of the similarity between the inflow series. The flow duration curves provide a good comparison of the two inflow series, and the cusum plots indicate any consistent patterns. A monthly summary of each of the inflow series has been included in Appendix A.

1.1 SPECTRA (Opus) inflow calculation method

Lake inflows are calculated using total lake outflows, lake level, and a lake area to level relationship as inputs to an inflow model. The output from the model consists of an inflow

data series, and a corresponding “adjusted level” data series. The adjusted lake level data provides a smoothed data series that incorporates corrections for excessive lake inflow, recession rates, and minimum inflow parameters.

The adjusted lake level dataset is produced using a water balance calculation based on the inflow and outflow series. The adjusted lake level can be compared against the measured lake level to ensure accuracy, and provide a measure of confidence in the model output. The actual and adjusted lake levels should be identical if the model and water balance are correct. If the two lake levels (i.e., adjusted and actual) differ significantly then an error exists and this needs to be investigated.

It is important to note that the adjusted lake level is an output of the inflow calculation routine, and not an absolute measurement. The current inflow programs are modified algorithms based on those discussed in Gilbert (1978) and Thompson and Ibbitt (1978).

1.2 M-co (NIWA) inflow calculation method

Lake inflows in the daily COMIT Hydro system are calculated using net lake outflows, lake level, and a linear lake area to level relationship as inputs to an inflow model. The output from the model consists of an inflow data series, an adjusted outflow data series, and a lake level series. The time step of the calculation is based on the inferred volume of the lake level precision, and its relationship to the mean flow through the lake. Generally this is set so that the error is less than half the mean flow at any time step. The lake area to level relationship is set so that it is a good fit to the lake area over the standard operating range.

The adjusted outflow data series has two points of difference from the measured outflow series used as input to the model. Firstly, when an inferred inflow recession rate is too steep, some outflow is moved by a time step until realistic recession rates are achieved. Second if this cannot be managed for a particular flood event, a small adjustment is made to the outflow. These adjustments are of order 1%. For example, at Lake Wanaka between 2 Feb 2002 and 9 Feb 2009, the inferred inflow is larger than the measured outflow by 1.7%, while the change in storage was zero. At Lake Te Anau over a similar time period the inflow was larger than the measured outflow by 0.67%, and change in storage was similarly zero.

The inflow algorithm used has no need of a minimum flow setting, as it is driven by the recession formula especially at low inflows. Differences between the two algorithms are documented in Henderson (1996). The current NIWA algorithm was developed specifically to enable real-time applications of lake inflow calculations with a view to using them in a forecasting mode. It thus includes provision for estimating of inflow up the end of the available outflow and level data, and is ideally suited to the M-co application.

2 Actual Lake Taupo

There are three different inflow series into Lake Taupo. The Electricity Commission use '42790 Taupo Operational'. This is the actual Lake Taupo inflow with the synthetic TPD data added from 1931 to 1971 to make it as though TPD started in 1931. This overcomes having a discontinuity in the data.

'2790 Actual Lake Taupo' inflow is the inflows actually recorded. Therefore, prior to 1971 it is simply the 'Natural Lake Taupo' inflow (without any TPD contribution) but since that time it includes the effect of TPD.

'62790 Natural Lake Taupo' inflow assumes that there are no TPD inflows.

2.1 Visual comparison

Figure 2.1 shows that the Actual Lake Taupo inflow datasets are more similar in the later part of the record. In the first half of the record, SPECTRA data appear to be consistently lower than M-co data. The difference obviously relates to how each party handles the TPD inflows. The SPECTRA record includes a synthetic TPD series so that the data set is continuous. M-co does not. Once TPD is operative the difference disappears. So the two datasets prior to TPD are actually modelling different things i.e., one with and one without TPD. It is not known which of these is right as two different methods have been used to create the data. This would require an examination of each method and assessment of which is the most appropriate. The reason the SPECTRA record includes synthetic TPD is to provide comparison against what is happening and has happened since 1976.

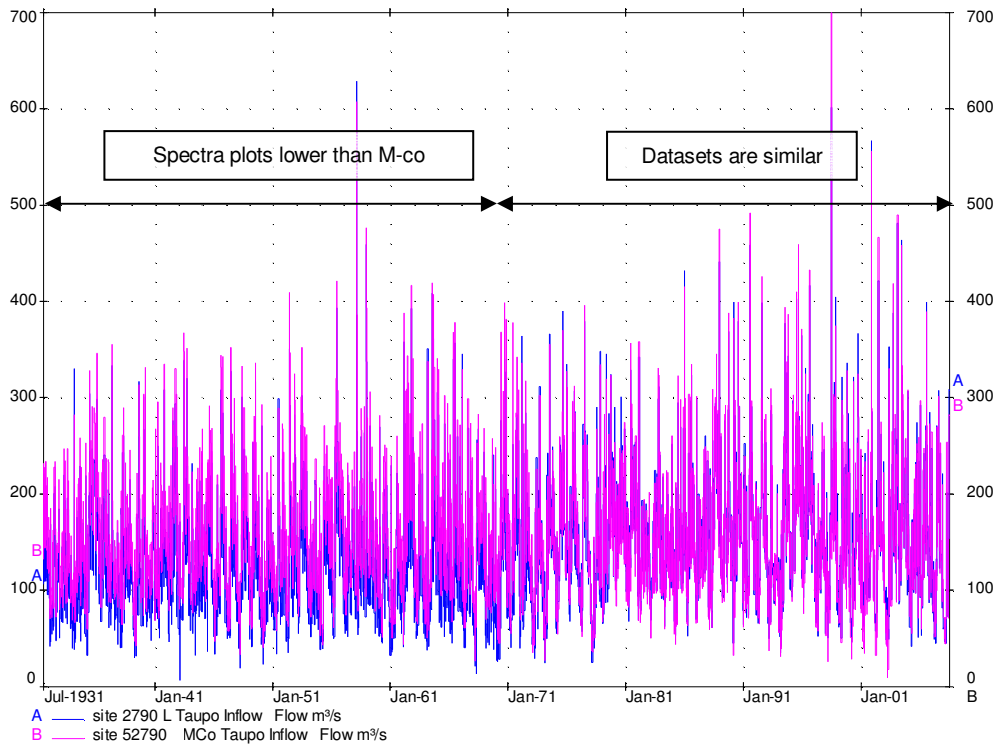


Figure 2.1 Actual Lake Taupo comparison of data sets

2.2 Analysis

The minimum (min), maximum (max), mean, and median were calculated for the SPECTRA and M-co datasets. The results for Actual Lake Taupo, along with the percentage differences between the two datasets, are listed in Table 2.1. The results show that the M-co inflow is bigger than the SPECTRA inflow.

Table 2.1 Statistical analysis for Actual Lake Taupo

| | SPECTRA (m³/s) | M-co (m³/s) | Difference (%) |
|--------|---------------------------|------------------------|---------------------------|
| Min | 7 | 9 | 22 |
| Max | 629 | 702 | 10 |
| Mean | 139 | 155 | 10 |
| Median | 126 | 143 | 12 |

Flow duration curves are a good means of comparing data because they show the percentage of time that flow exceeds any given value. However, they do not show the time of a difference as they remove the temporal component. Figure 2.2 shows a small, consistent difference for the Actual Lake Taupo inflow record.

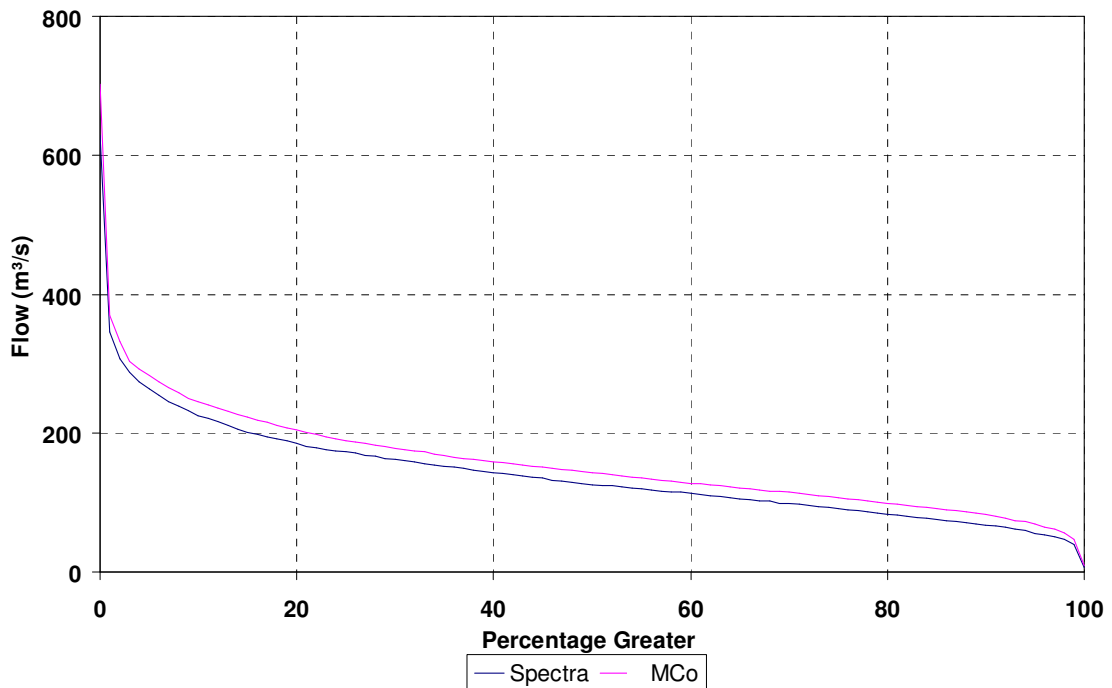


Figure 2.2 Actual Lake Taupo flow duration curve

2.3 Plot of difference

By plotting the difference between the M-co and SPECTRA inflow datasets both the magnitude of any difference, and the timing of any changes, become obvious. The differences noted in the flow duration curve for Actual Lake Taupo occur largely in the first 40 years of record (from 1931 to 1971). The difference is approximately 20m³/s, the average value of TPD diversions (Figure 2.3).

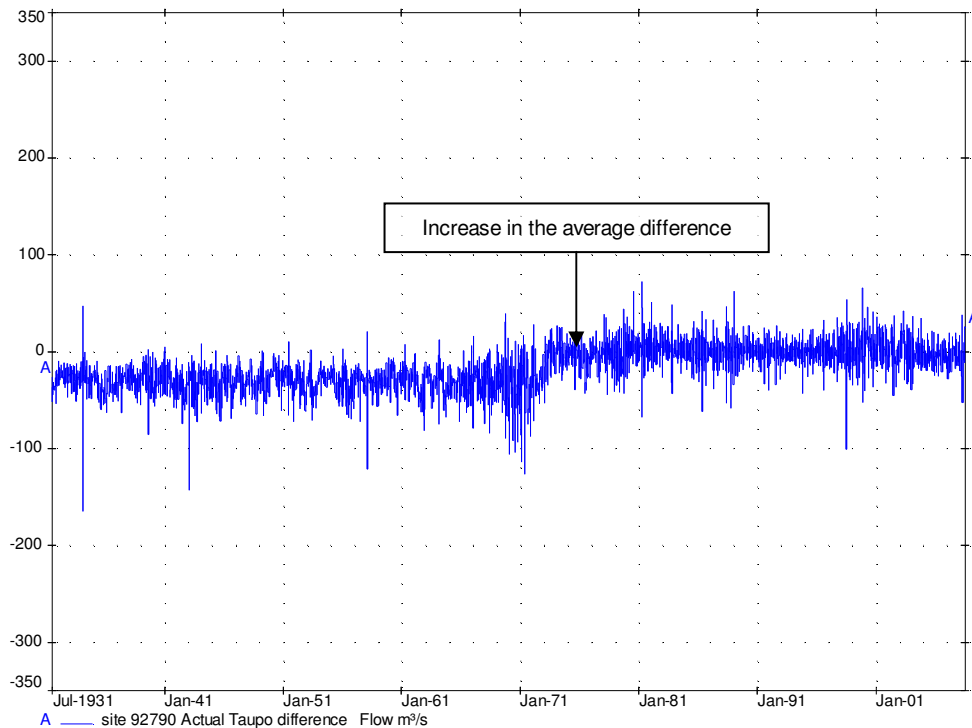


Figure 2.3 Actual Lake Taupo - difference between SPECTRA and M-co

2.4 Cusum plot

A cusum plot shows “the cumulative sum of the deviation from the mean”. This process graphs two series in a way that compares the variation in the cumulative sum of the means of the series. The plots will always start and finish at the mean of the series. If the fluctuations about the mean are nearly coincident in time, and the ratios of the magnitudes of the fluctuations are almost constant, the graphs will be approximately straight lines. If there are consistent trends in the data then the line will deviate from the mean.

Cusum plots have the following advantages:

1. Deviations are graphed relative to the x-axis and so the scale can be varied to highlight any trends.
2. The times of deviations along the x-axis can be labelled like any other time series. This can highlight when trends or shifts in the datasets occurred, and allow explanations for any shifts to be explored.

A cusum plot shows three lines. There is one line for each series. These lines plot 1000 times the cumulative sum of the difference from the mean divided by the standard deviation.

The third line on the graph is the difference between the other two. It represents the same quantity as the deviations of the other styles of double mass curve.

The Actual Lake Taupo cusum plot (Figure 2.4) shows a very large difference between SPECTRA and M-co data. The SPECTRA data's cusum shows that the period up to the mid 1970s was lower than the mean. Data since the 1980s has been above the mean. This is because TPD inflows started being added to the lake during the late 1970s. The M-co data does not appear to reflect this change. It is therefore inferred that the data prior to the 1970s was not adjusted for the lack of TPD inflow. Conversely, Figure 3.4 shows that the data series are much more similar for Natural Lake Taupo record as this removes the effect of the TPD.

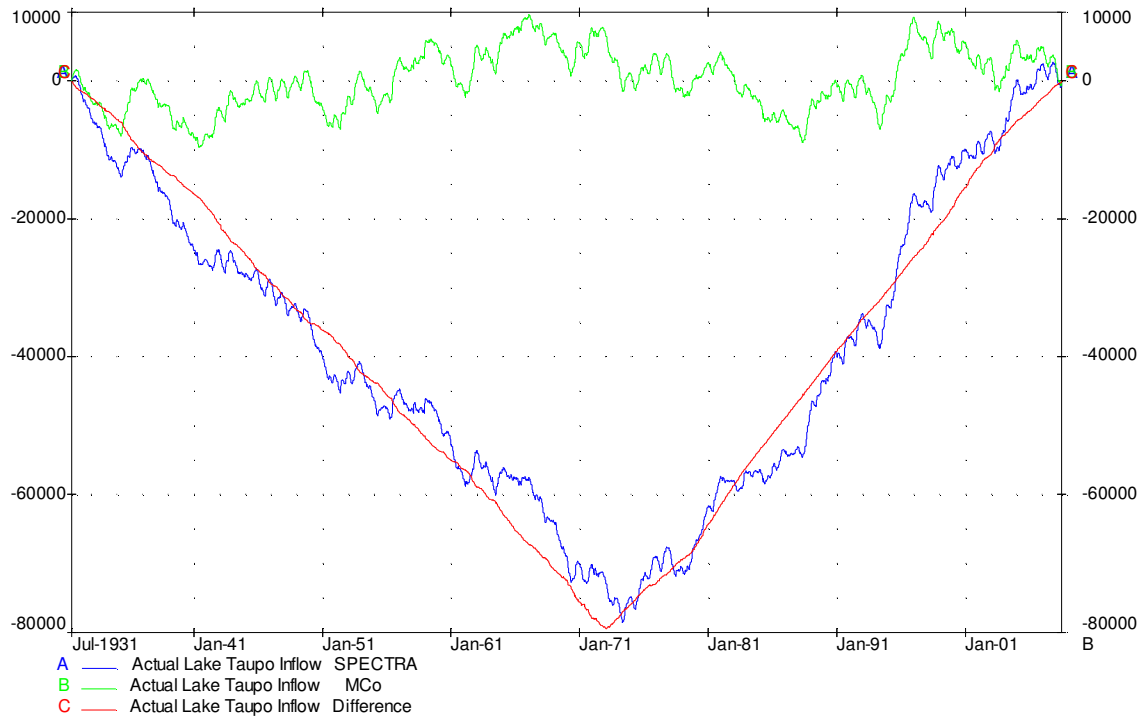


Figure 2.4 Actual Lake Taupo cusum plot

3 Natural Lake Taupo

3.1 Visual comparison

Figure 3.1 shows that the two datasets for Natural Lake Taupo are similar. The SPECTRA data appear to have larger flood peaks, especially up to 1981.

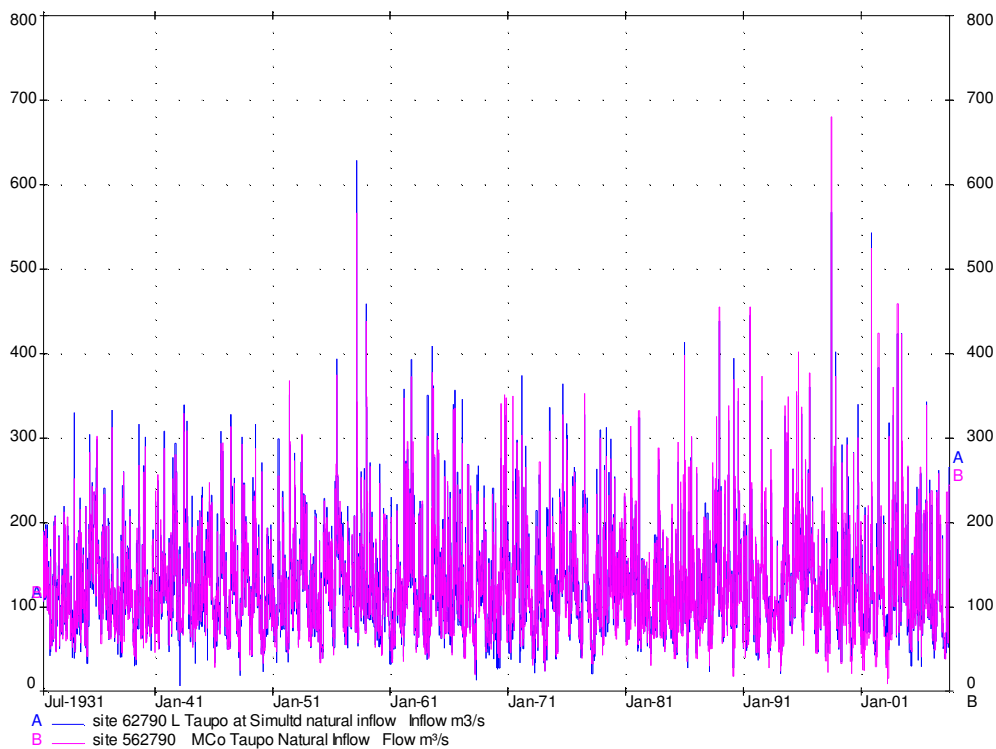


Figure 3.1 Natural Lake Taupo comparison of data sets

3.2 Analysis

The statistical analysis for the Natural Lake Taupo data sets (Table 3.1) shows that there is no difference between the mean or the median and very little difference in the minimum or the maximum. The flow duration curve (Figure 3.2) shows very little difference between the datasets.

Table 3.1 Statistical analysis for Natural Lake Taupo

| | SPECTRA (m³/s) | M-co (m³/s) | Difference (%) |
|--------|--------------------------------------|-----------------------------------|---------------------------|
| Min | 7 | 9 | 22 |
| Max | 629 | 681 | 8 |
| Mean | 125 | 125 | 0 |
| Median | 113 | 113 | 0 |

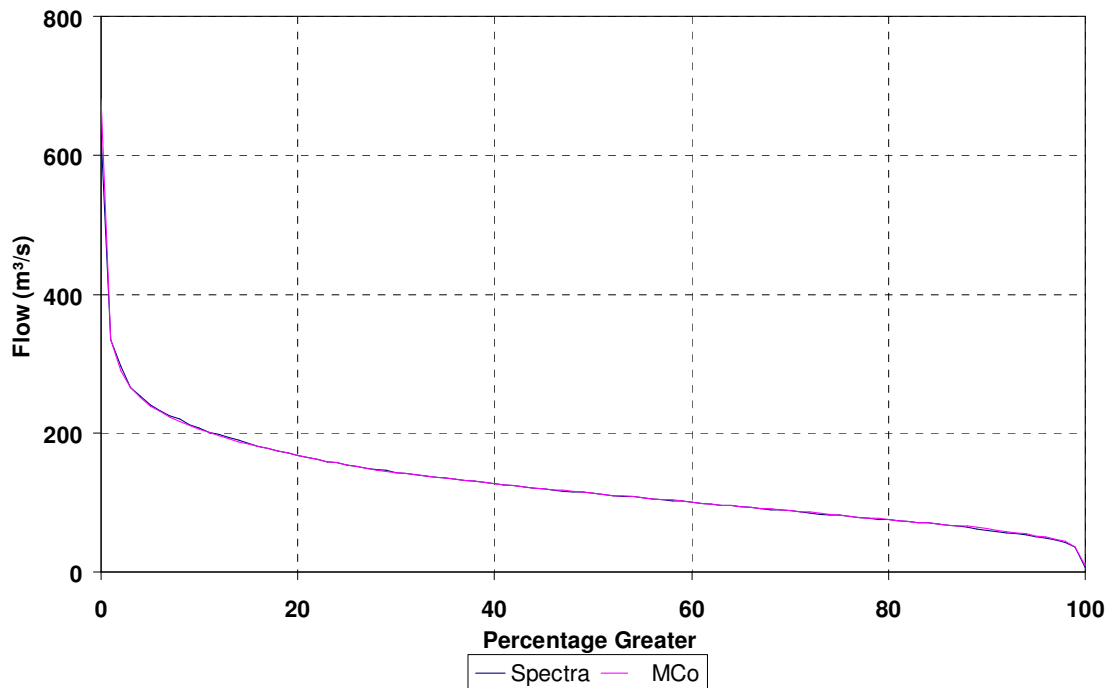


Figure 3.2 Natural Lake Taupo flow duration curve

3.3 Plot of difference

The plot of the difference between SPECTRA and M-co for Lake Taupo Natural reiterates the small difference between the datasets (Figure 3.3)

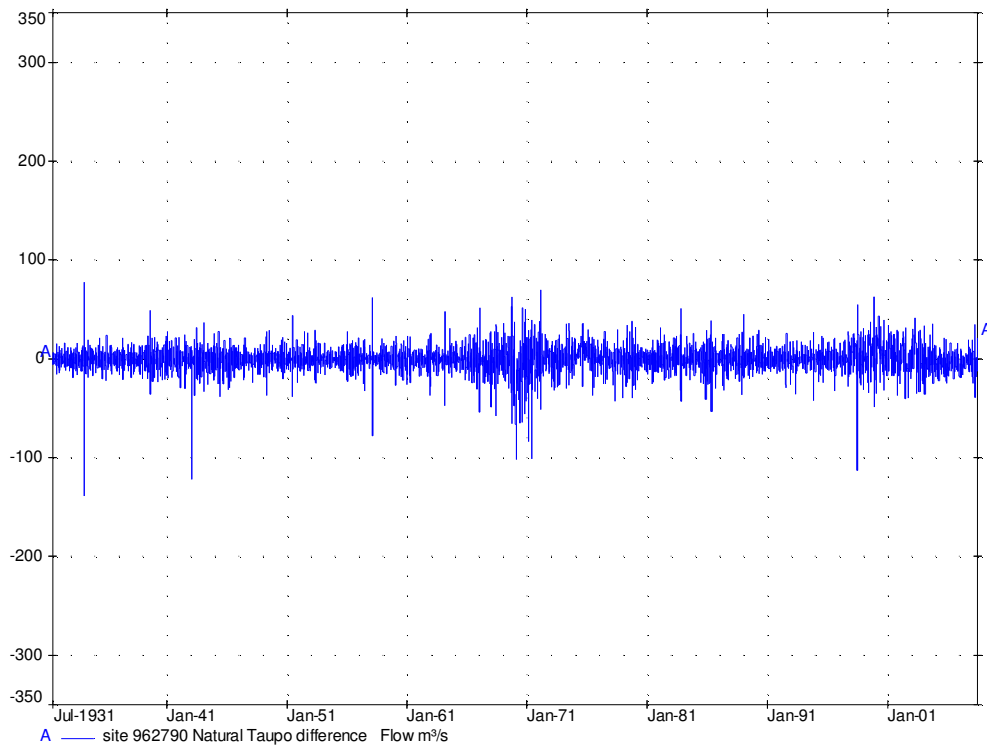


Figure 3.3 Natural Lake Taupo - difference between SPECTRA and M-co

3.4 Cusum plot

The cusum plot of Lake Taupo Natual shows the cusum for the SPECTRA data, the M-co data, and the difference between the two (Figure 3.4).

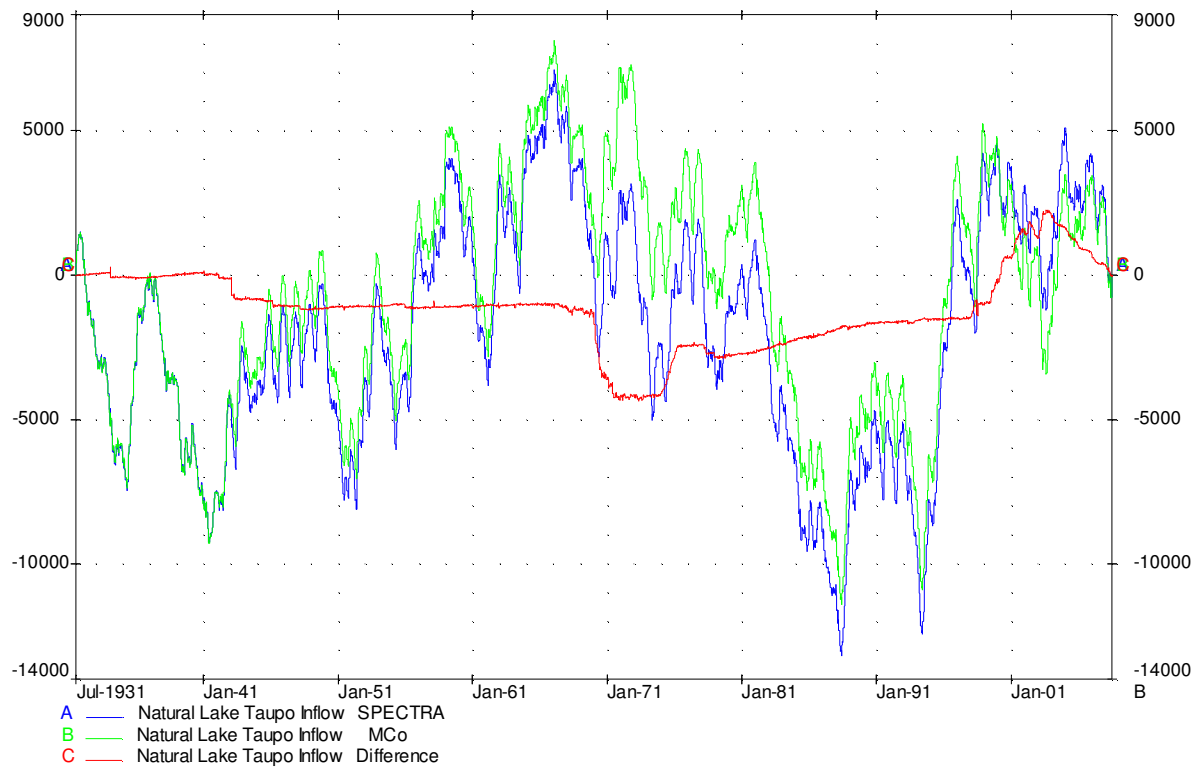


Figure 3.4 Natural Lake Taupo cusum plot

4 Lake Ohau

4.1 Visual comparison

Figure 4.1 shows that the two datasets for Lake Ohau are similar. The SPECTRA data appear to be slightly higher than the M-co data.

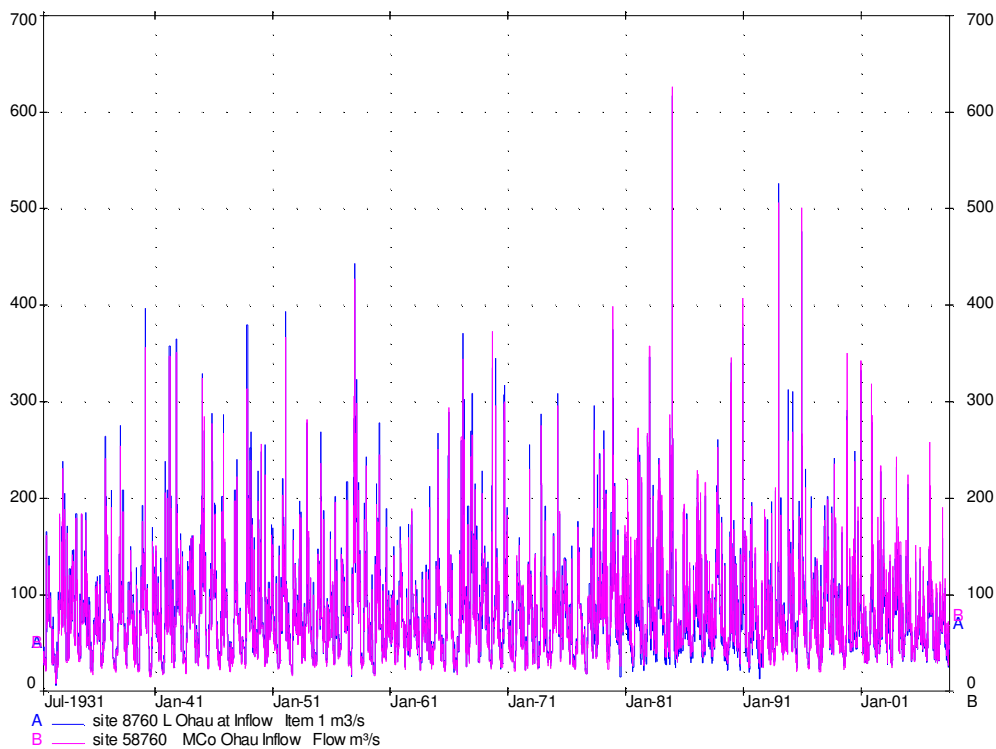


Figure 4.1 Lake Ohau comparison of data sets

4.2 Analysis

The statistical analysis (Table 4.1) and flow duration curve (Figure 4.2) for Lake Ohau show that the two data sets are very similar. The means and medians are particularly close.

Table 4.1 Statistical analysis for Lake Ohau

| | SPECTRA (m³/s) | M-co (m³/s) | Difference (%) |
|--------|--------------------------------------|-----------------------------------|---------------------------|
| Min | 6 | 8 | 25 |
| Max | 618 | 627 | 1 |
| Mean | 80 | 81 | 1 |
| Median | 68 | 69 | 1 |

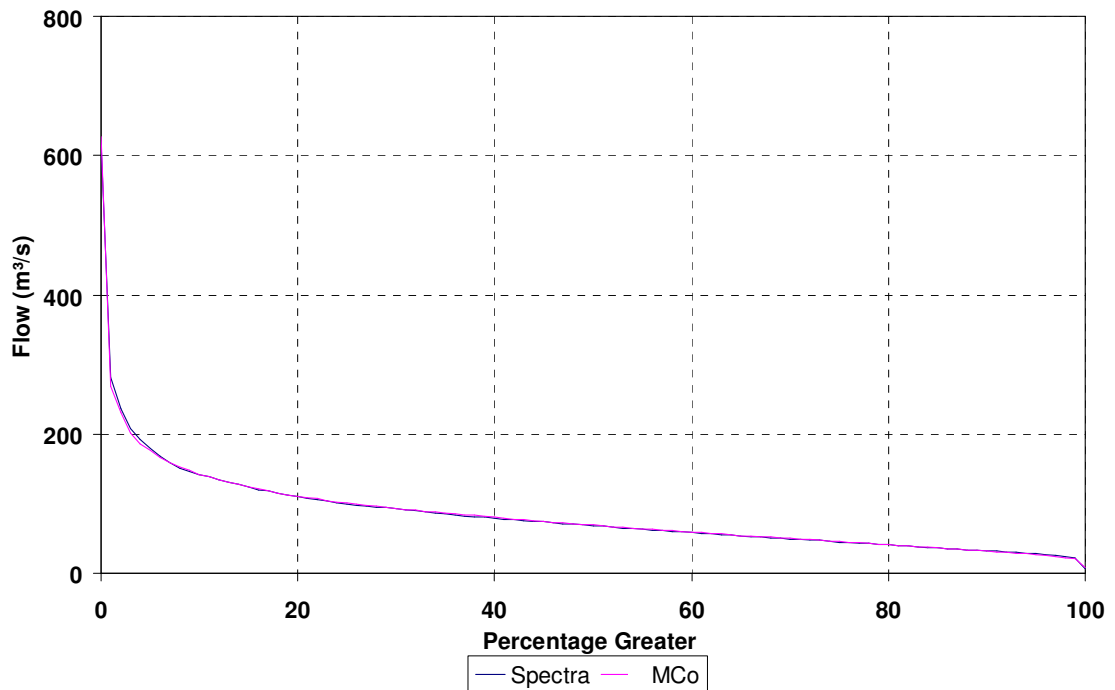


Figure 4.2 Lake Ohau flow duration curve

4.3 Plot of difference

Figure 4.3 shows that there is very little difference in the datasets, not more than 80m³/s difference at any given time.

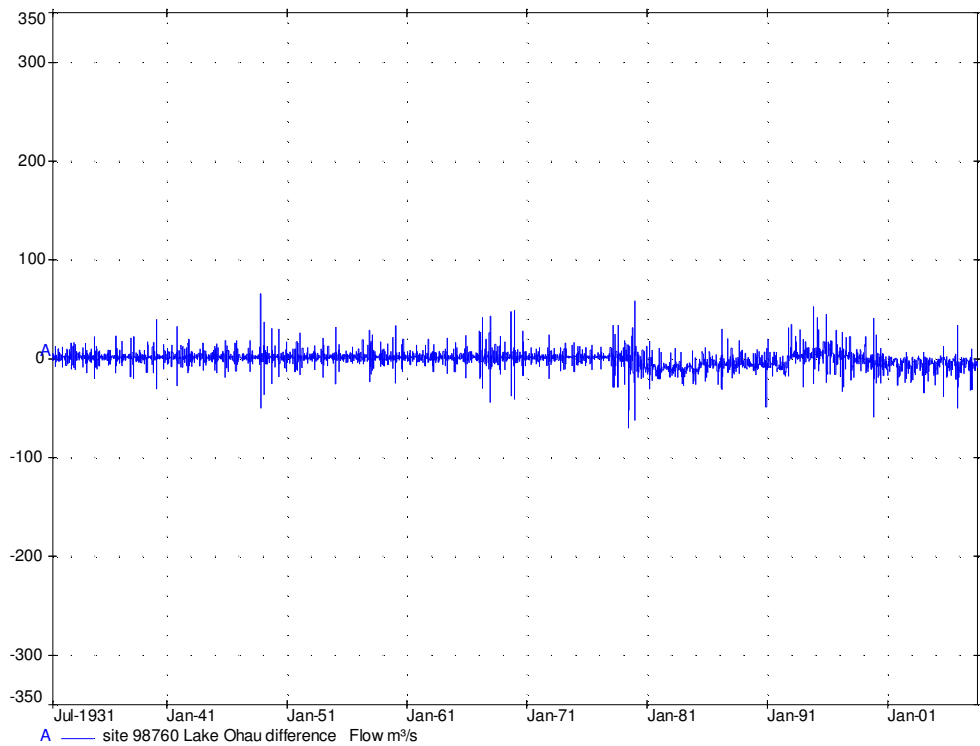


Figure 4.3 Lake Ohau - difference between SPECTRA and M-co

4.4 Cusum plot

Figure 4.4 shows the cusum for the SPECTRA data, the M-co data, and the difference between the two. The differences seen in this plot are relatively minor.

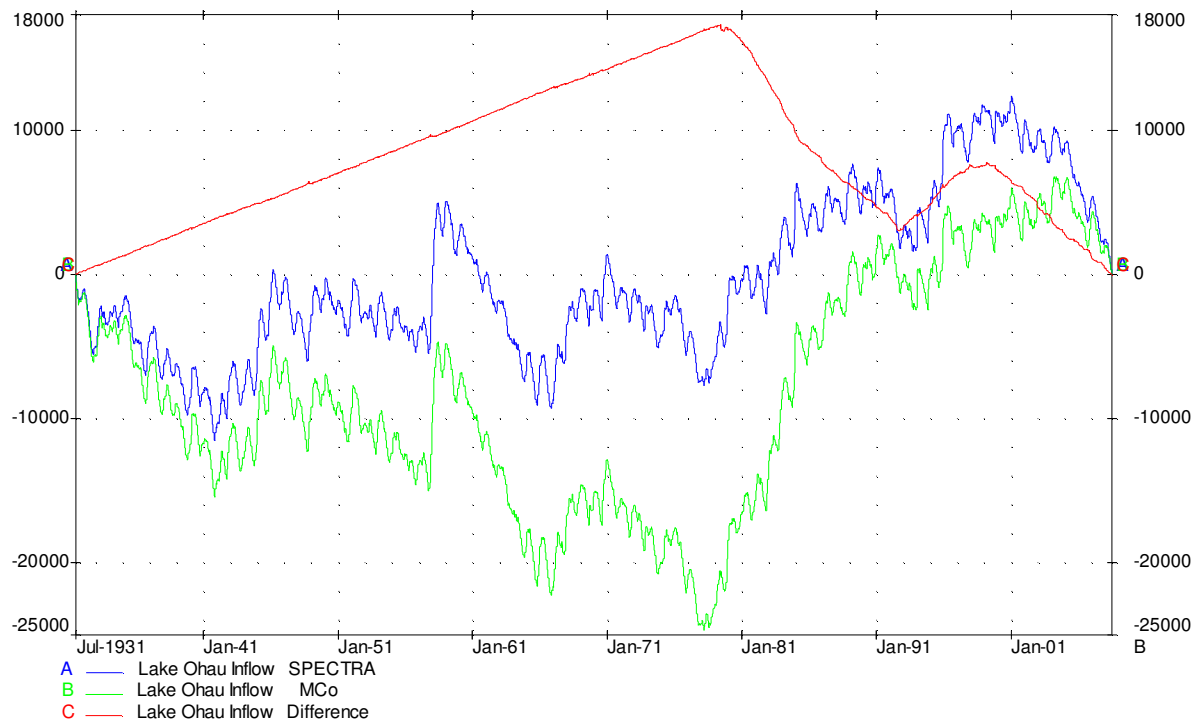


Figure 4.4 Lake Ohau cusum plot

5 Lake Pukaki

5.1 Visual comparison

The records for Lake Pukaki appear to be more similar throughout the first half of the record than the second half (Figure 5.1). During the later part of the records, SPECTRA plots lower than M-co.

The slight differences in data from around 1941 to 1965 have been discussed by Horace Freestone, Steve Thompson, David Payne and Meridian. However, given the relatively small difference and period over which it is a problem, Meridian did not want to spend money on solving the data difference.

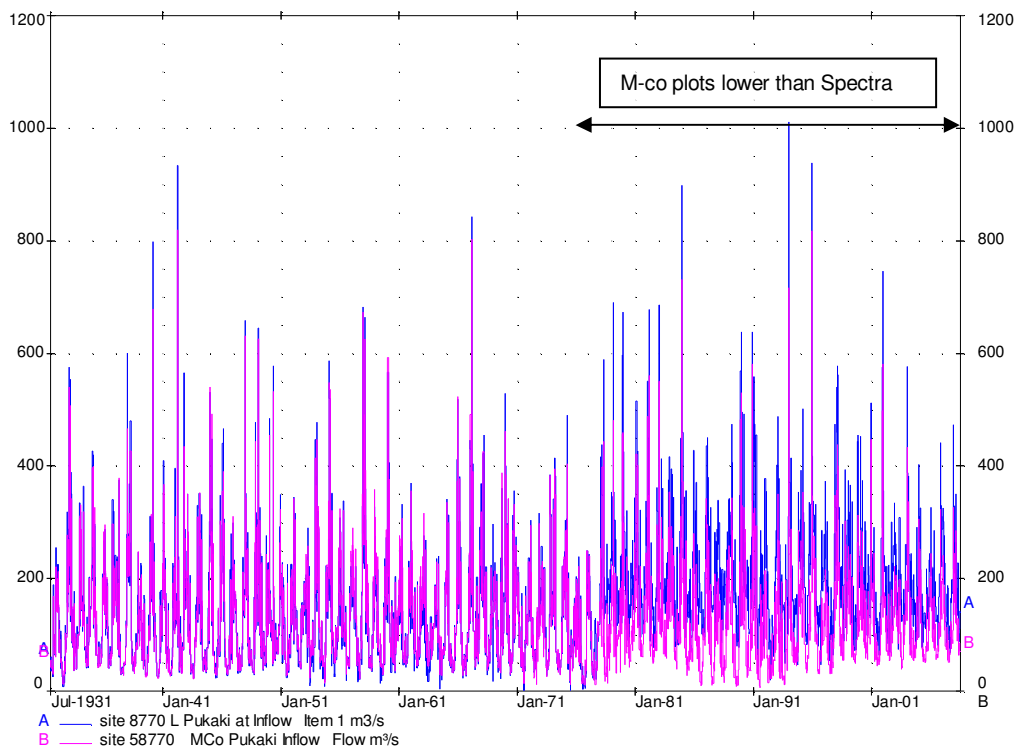


Figure 5.1 Lake Pukaki comparison of data sets

5.2 Analysis

The statistical analysis for Lake Pukaki shows there are significant difference in each variable examined (Table 5.1). The difference between the two medians is particularly apparent.

Table 5.1 Statistical analysis for Lake Pukaki

| | SPECTRA (m³/s) | M-co (m³/s) | Difference (%) |
|--------|--------------------------------------|-----------------------------------|---------------------------|
| Min | 2 | 6 | 67 |
| Max | 1011 | 820 | 19 |
| Mean | 156 | 126 | 19 |
| Median | 140 | 104 | 26 |

Lake Pukaki (Figure 5.2) shows a significant difference in the mid-range of flows. This difference is not so apparent at the low and high ends of inflow.

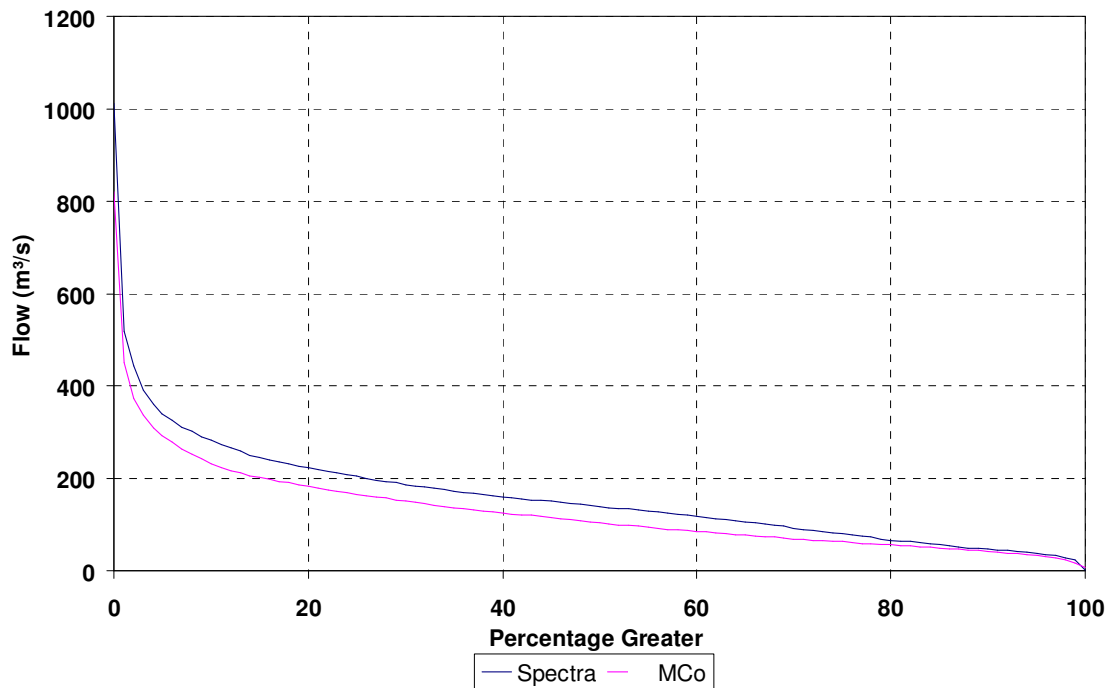


Figure 5.2 Lake Pukaki flow duration curve

5.3 Plot of difference

Lake Pukaki's differences occur in the latter part of the record, from 1977 to the present (Figure 5.3). The difference between the datasets has a much greater variation for Pukaki than for Taupo (Actual and Natural), Ohau, Tekapo, and Hawea. This could be because the M-co series uses the natural inflow to Pukaki and not the total inflow.

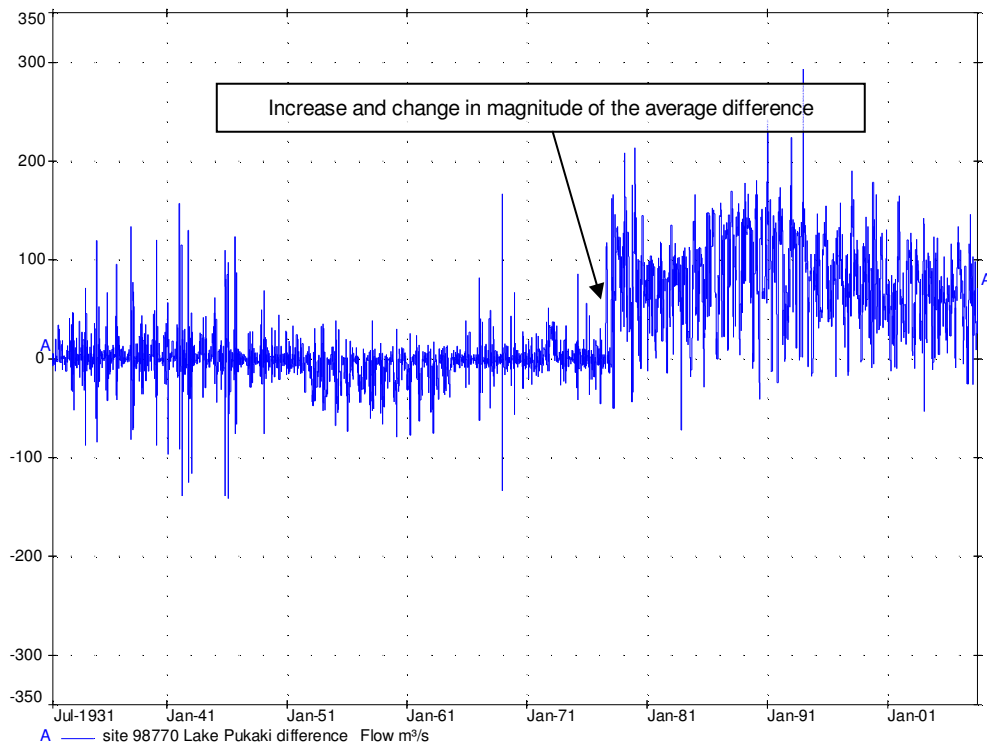


Figure 5.3 Lake Pukaki - difference between SPECTRA and M-co

5.4 Cusum plot

Lake Pukaki, Figure 5.4 shows that SPECTRA data prior to the late 1970s plot below the mean. Data after this time are above the mean. This change reflects the effect of building the Pukaki Power Station.

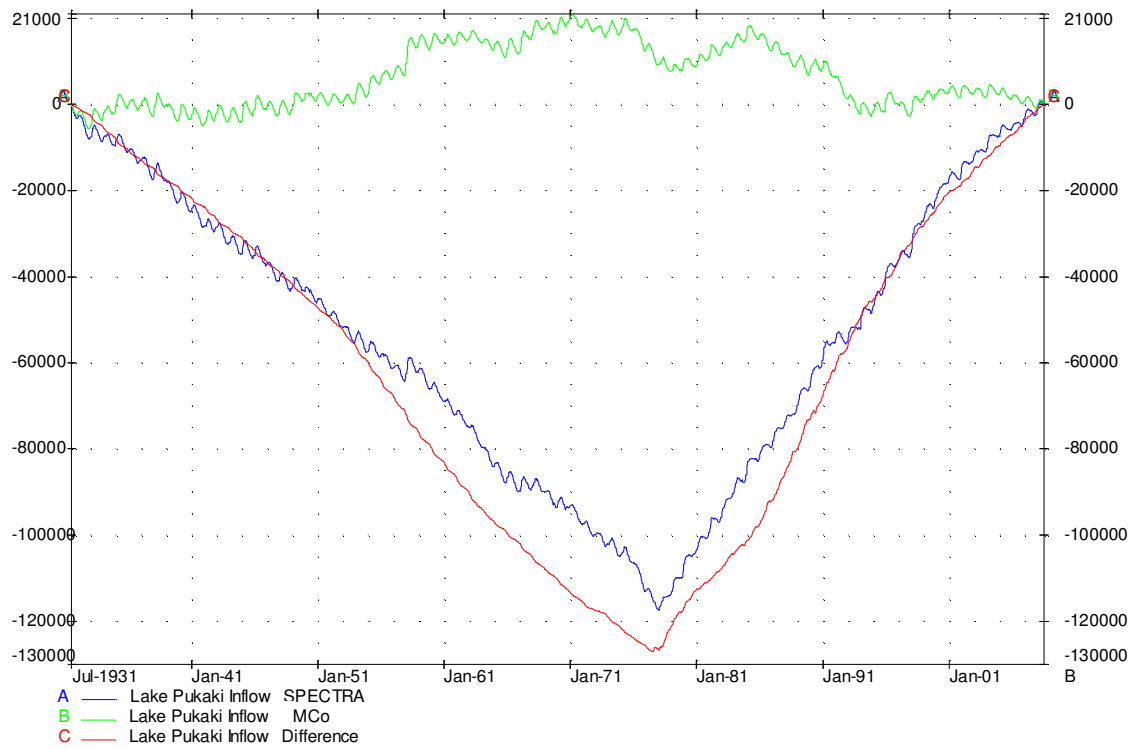


Figure 5.4 Lake Pukaki cusum plot

6 Lake Tekapo

6.1 Visual comparison

The two datasets for Lake Tekapo (Figure 6.1) appear to be similar throughout the length of record. The SPECTRA record shows slightly more variability in flow.

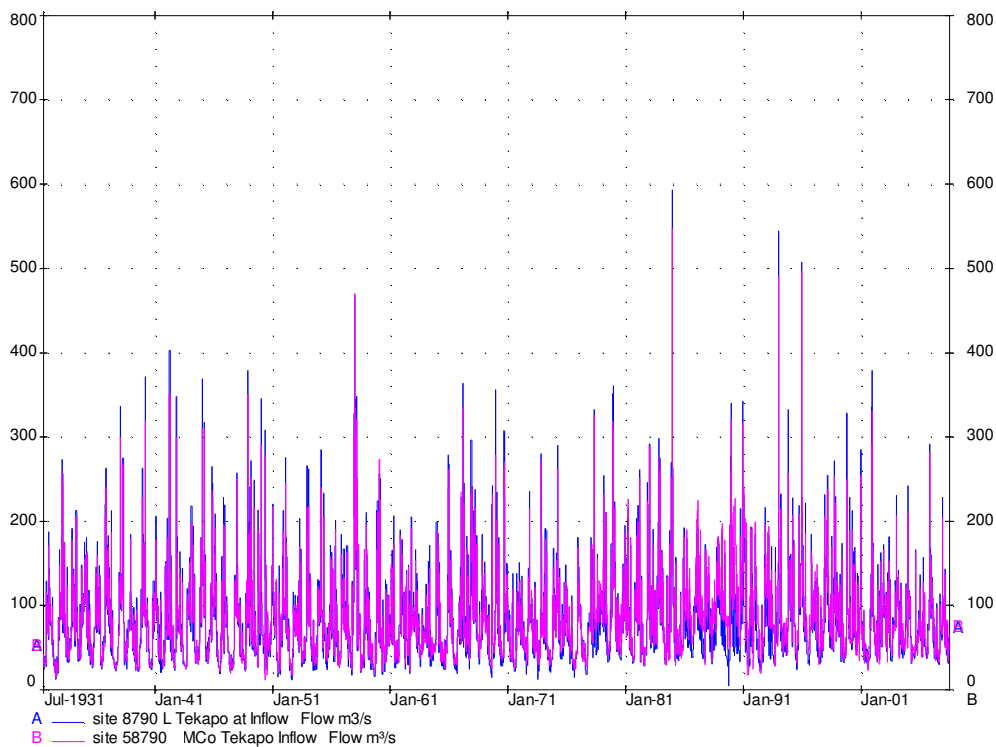


Figure 6.1 Lake Tekapo comparison of data sets

6.2 Analysis

Table 6.1 shows some differences between the two Lake Tekapo data sets, the mean and the median are 4 and 7% different respectively. The flow duration curve (Figure 6.2) shows that the M-co data are slightly higher than the SPECTRA data during highest 13% of flows but are lower than SPECTRA for the lowest 85% of flows.

Table 6.1 Statistical analysis for Lake Tekapo

| | SPECTRA (m³/s) | M-co (m³/s) | Difference (%) |
|--------|--------------------------------------|-----------------------------------|---------------------------|
| Min | 4 | 12 | 67 |
| Max | 594 | 547 | 8 |
| Mean | 81 | 84 | 4 |
| Median | 68 | 73 | 7 |

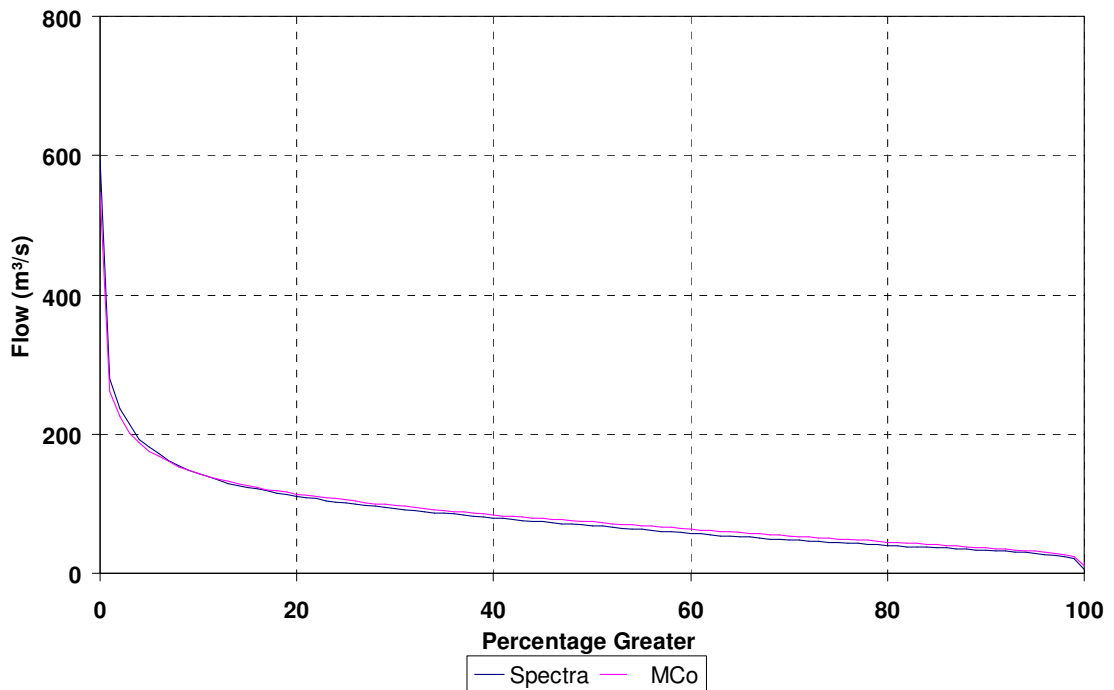


Figure 6.2 Lake Tekapo flow duration curve

6.3 Plot of difference

The plot of difference for Lake Tekapo (Figure 6.3) shows very similar flows for the majority of the records. There is a decrease in the average difference for a period between 1984 and 1994, which is highlighted in Figure 6.3.

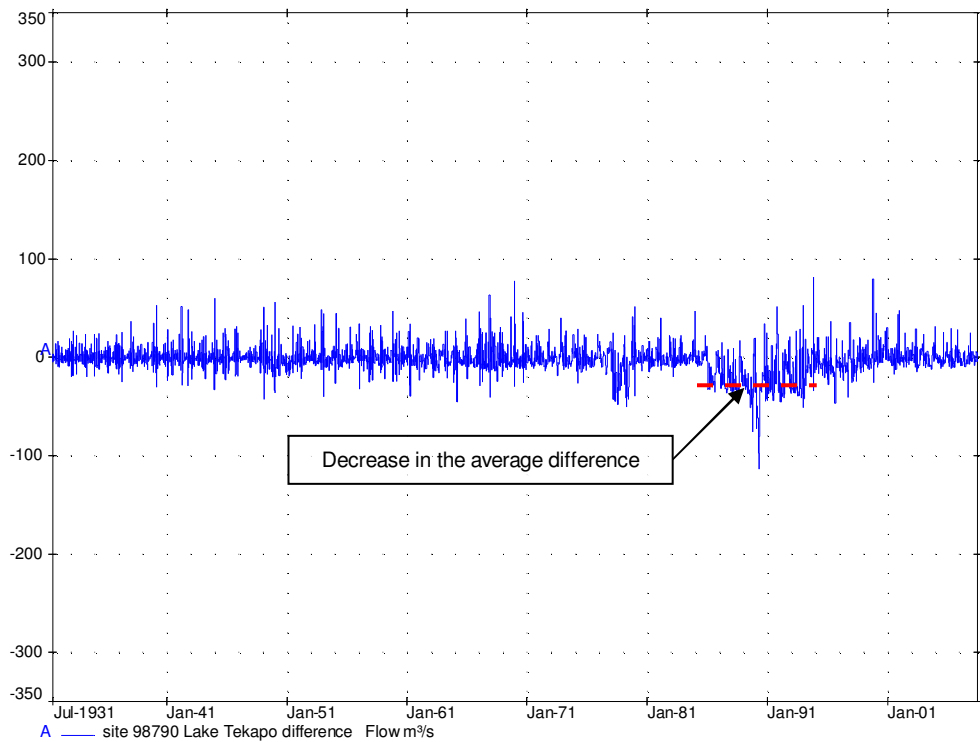


Figure 6.3 Lake Tekapo - difference between SPECTRA and M-co

6.4 Cusum plot

Figure 6.4 shows the cusum for the SPECTRA data, the M-co data, and the difference between the two. The differences seen in this plot are relatively minor.



Figure 6.4 Lake Tekapo cusum plot

7 Lake Wanaka

7.1 Visual comparison

The two datasets for Lake Wanaka (Figure 7.1) appear to be similar throughout the length of record. SPECTRA data show slightly higher inflows than M-co data for the period up to 1980.

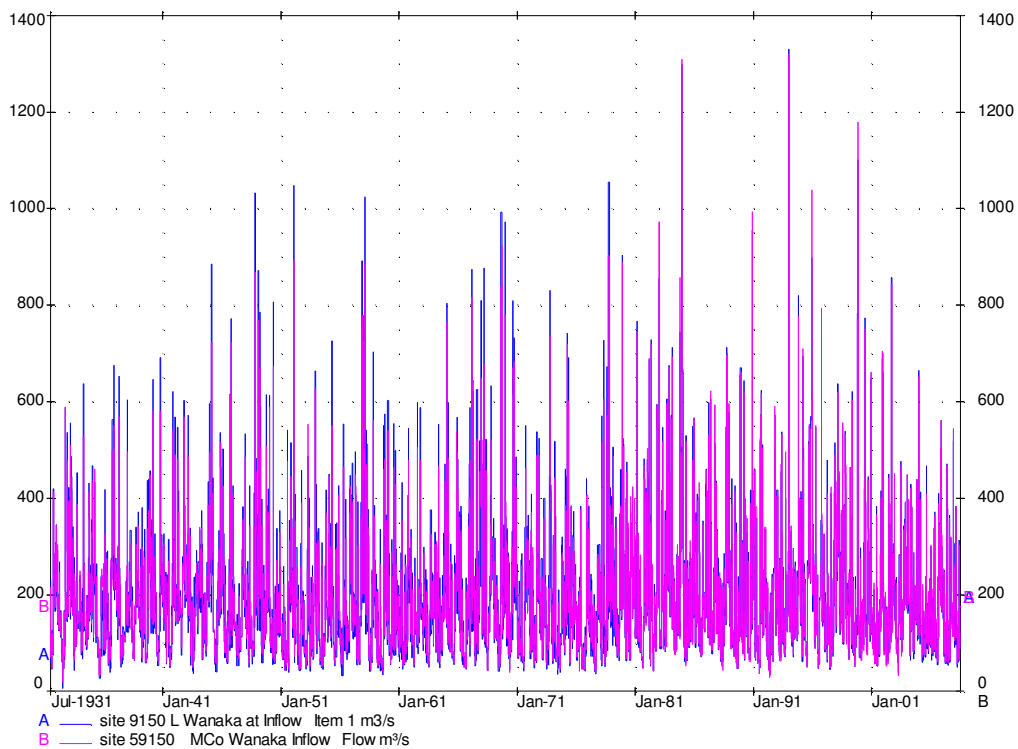


Figure 7.1 Lake Wanaka comparison of data sets

7.2 Analysis

Table 7.1 shows that the minimum flow in the M-co dataset is significantly larger than the minimum flow in the SPECTRA data. Otherwise the maximum, mean and median all appear to be similar. Figure 7.2 shows similar flow regimes.

Table 7.1 Statistical analysis for Lake Wanaka

| | SPECTRA (m³/s) | M-co (m³/s) | Difference (%) |
|--------|--------------------------------------|-----------------------------------|---------------------------|
| Min | 6 | 20 | 70 |
| Max | 1332 | 1320 | 1 |
| Mean | 196 | 197 | 1 |
| Median | 159 | 165 | 4 |

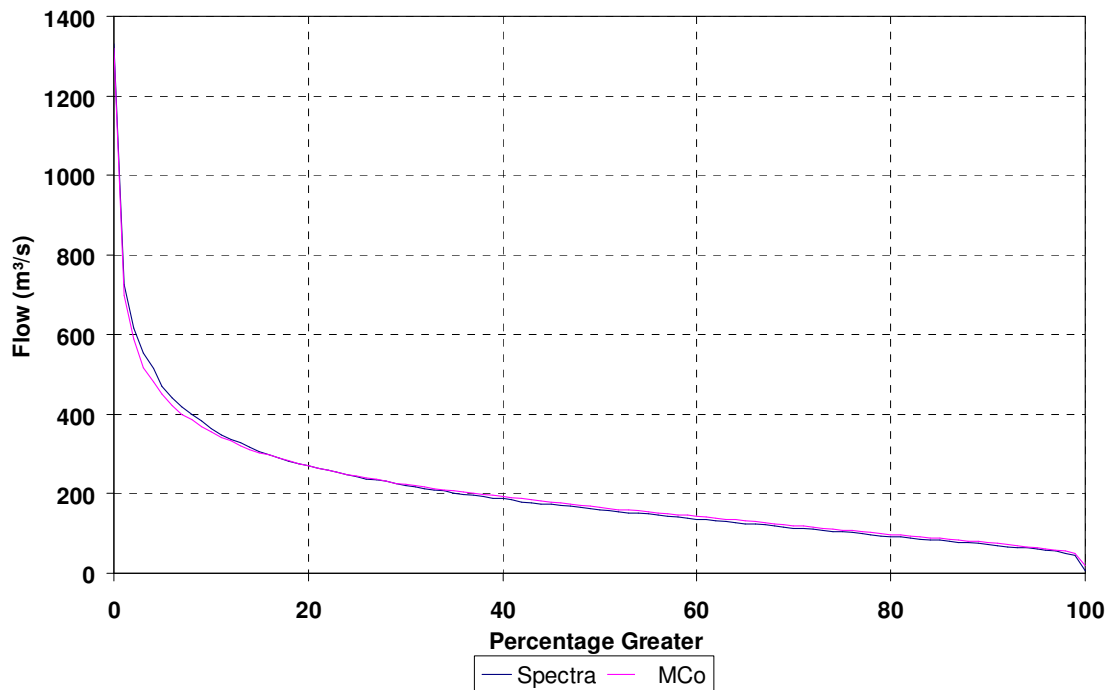


Figure 7.2 Lake Wanaka flow duration curve

7.3 Plot of difference

The plot of differences between SPECTRA and M-co for Lake Wanaka (Figure 7.3) shows larger differences throughout the record than for Lake Hawea, Lake Tekapo, Lake Pukaki or Lake Ohau, Natural Lake Taupo and Actual Lake Taupo.

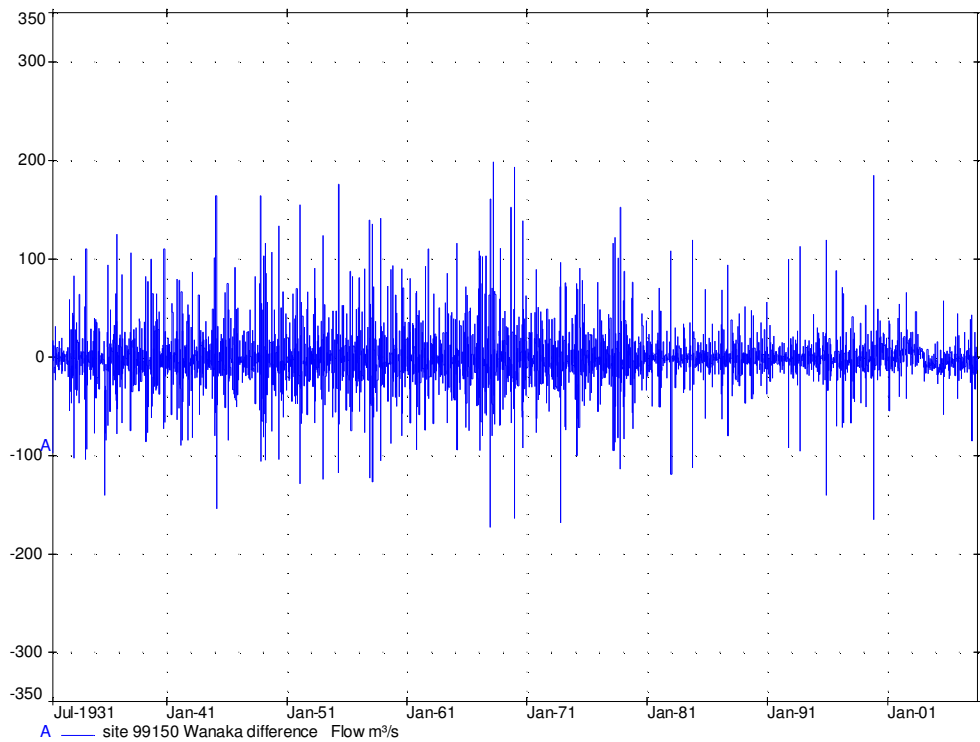


Figure 7.3 Lake Wanaka - difference between SPECTRA and M-co

7.4 Cusum plot

The cusum comparison of plots for Lake Wanaka shows that they are very similar (Figure 7.4). This is contradictory to the plot of difference shown in Figure 7.3.



Figure 7.4 Lake Wanaka cusum plot

8 Lake Wakatipu

8.1 Visual comparison

The two datasets for Lake Wakatipu (Figure 8.1) appear to be reasonably similar throughout the length of record. However, SPECTRA data show slightly higher inflows than M-co data for the period up to 1980 and after 2001.

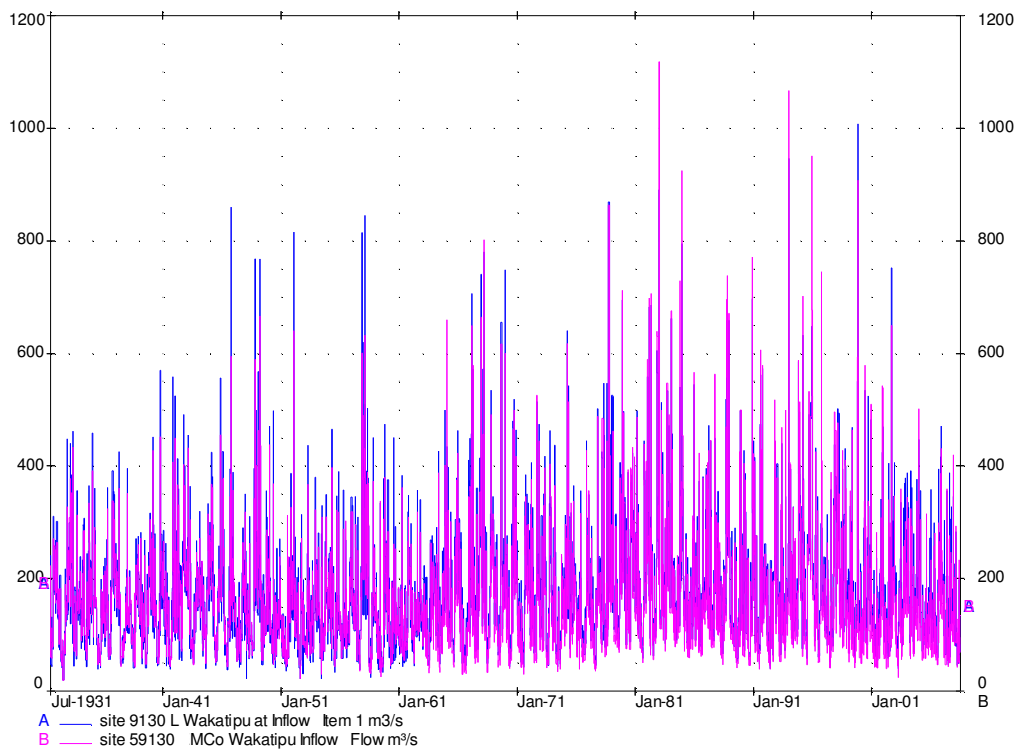


Figure 8.1 Lake Wakatipu comparison of data sets

8.2 Analysis

The statistical analysis for Lake Wakatipu is listed in Table 8.1, it shows there are some differences in the maximum, mean and medians for the datasets. The SPECTRA mean and median are 6 and 7% higher respectively than the M-co series. Figure 8.2 shows that the M-co data is lower for most flow regimes.

Table 8.1 Statistical analysis for Lake Wakatipu

| | SPECTRA (m³/s) | M-co (m³/s) | Difference (%) |
|--------|--------------------------------------|-----------------------------------|---------------------------|
| Min | 20 | 20 | 0 |
| Max | 1008 | 1119 | 10 |
| Mean | 175 | 165 | 6 |
| Median | 149 | 138 | 7 |

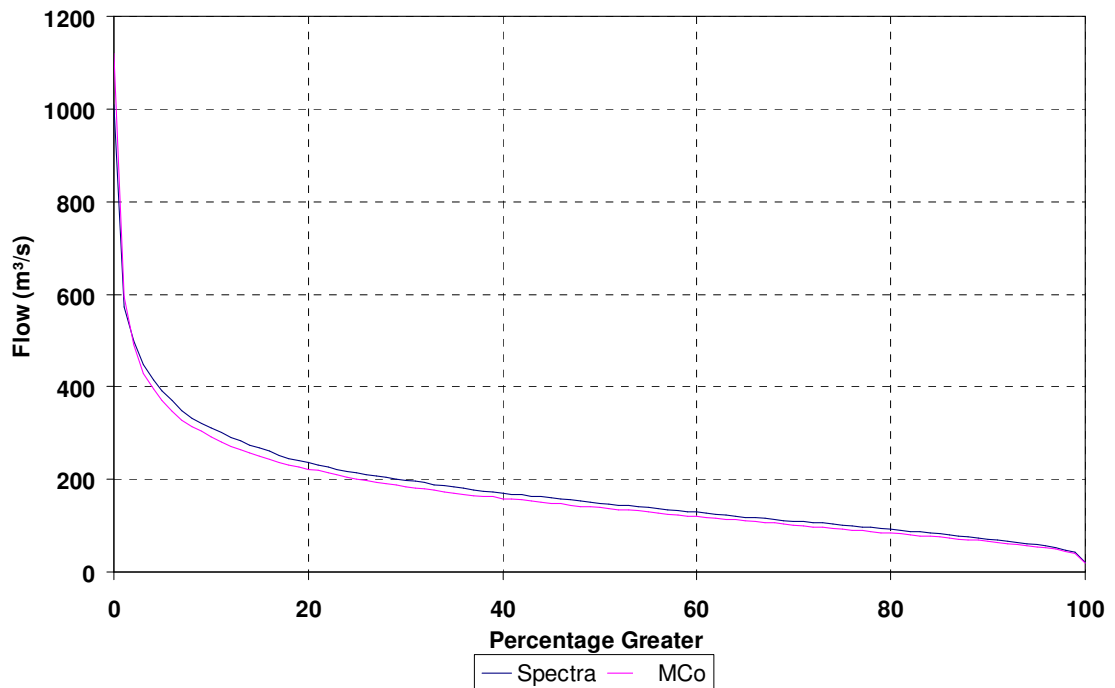


Figure 8.2 Lake Wakatipu flow duration curve

8.3 Plot of difference

Figure 8.3 shows that there are significant differences in flow across the record. The plot shows that there is an increase in the average difference in 1963.

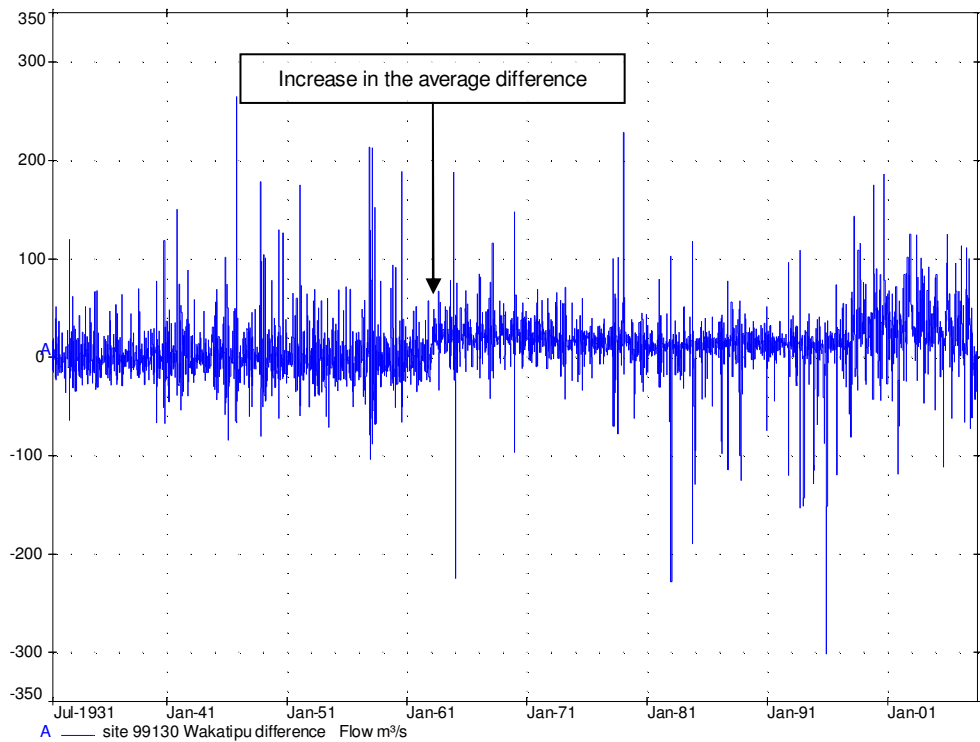


Figure 8.3 Lake Wakatipu - difference between SPECTRA and M-co

8.4 Cusum plot

Figure 8.4 shows the cusum for the SPECTRA data, the M-co data, and the difference between the two. The differences seen in this plot are relatively minor.

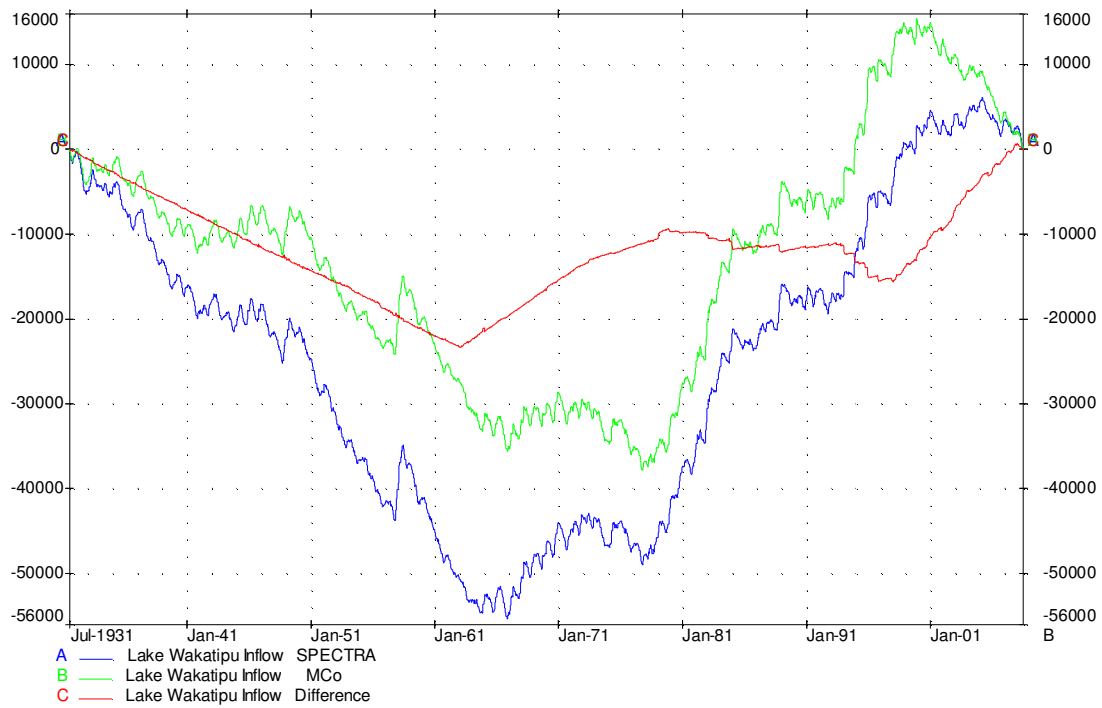


Figure 8.4 Lake Wakatipu cusum plot

9 Lake Hawea

9.1 Visual comparison

The two datasets for Lake Hawea (Figure 9.1) appear to be similar throughout the length of record. In general the SPECTRA data has higher flood flows.

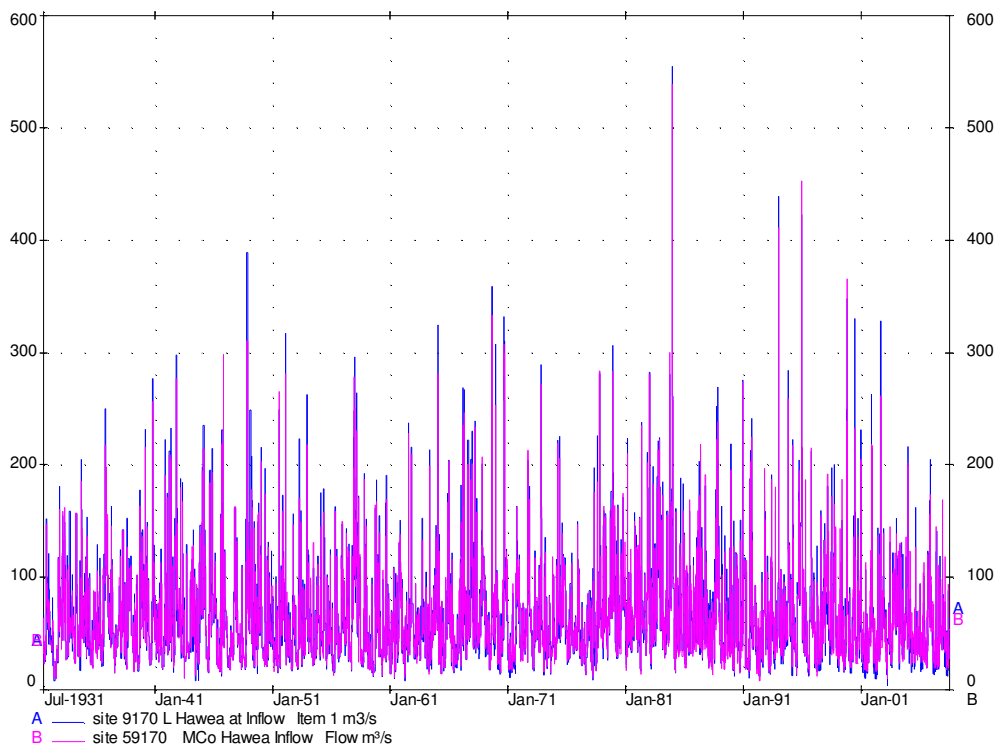


Figure 9.1 Lake Hawea comparison of data sets

9.2 Analysis

The statistical analysis in Table 9.1 shows that while the minimum have a 63% difference, this is in fact only 5m³/s. The means and medians are in fact very similar. The flow duration curves are very similar (Figure 9.2).

Table 9.1 Statistical analysis for Lake Hawea

| | SPECTRA (m³/s) | M-co (m³/s) | Difference (%) |
|--------|--------------------------------------|-----------------------------------|---------------------------|
| Min | 3 | 8 | 63 |
| Max | 555 | 539 | 3 |
| Mean | 65 | 65 | 0 |
| Median | 52 | 53 | 2 |

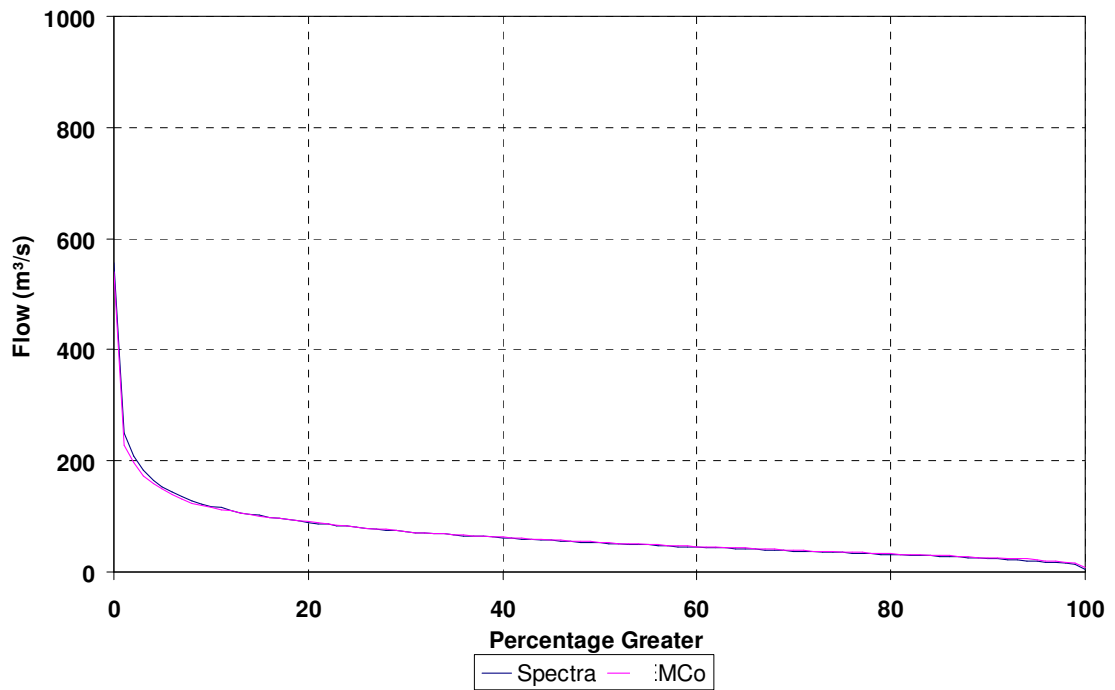


Figure 9.2 Lake Hawea flow duration curve

9.3 Plot of difference

Figure 9.3 shows little difference between the data.

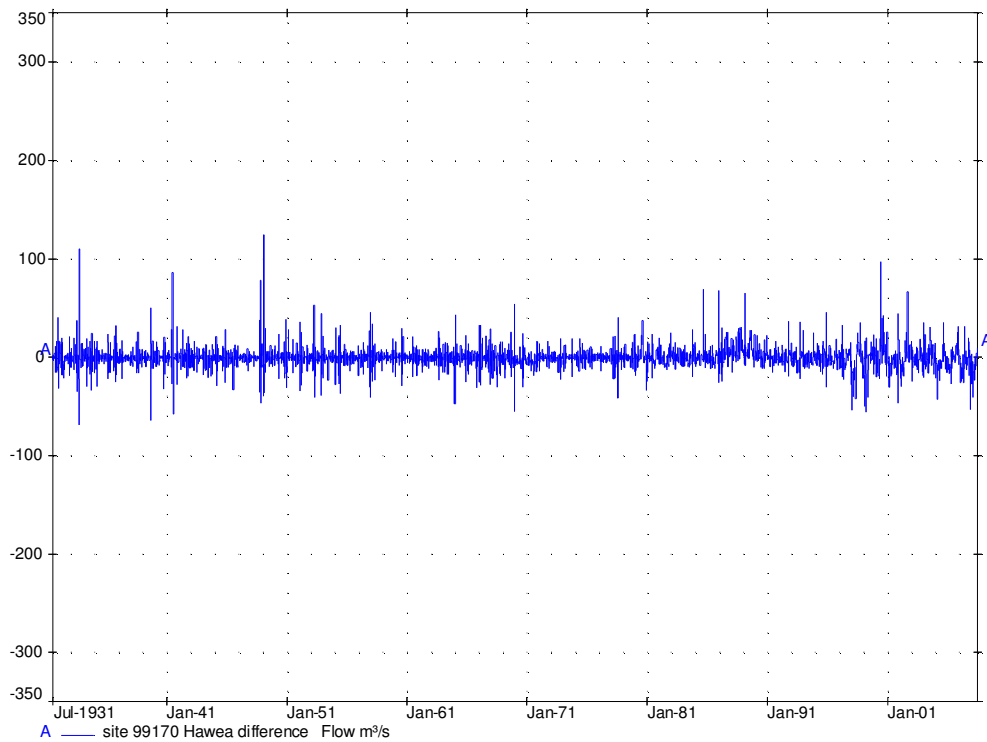


Figure 9.3 Lake Hawea - difference between SPECTRA and M-co

9.4 Cusum plot

The cusum comparison of plots for Lake Wanaka shows that they are very similar (Figure 9.4).

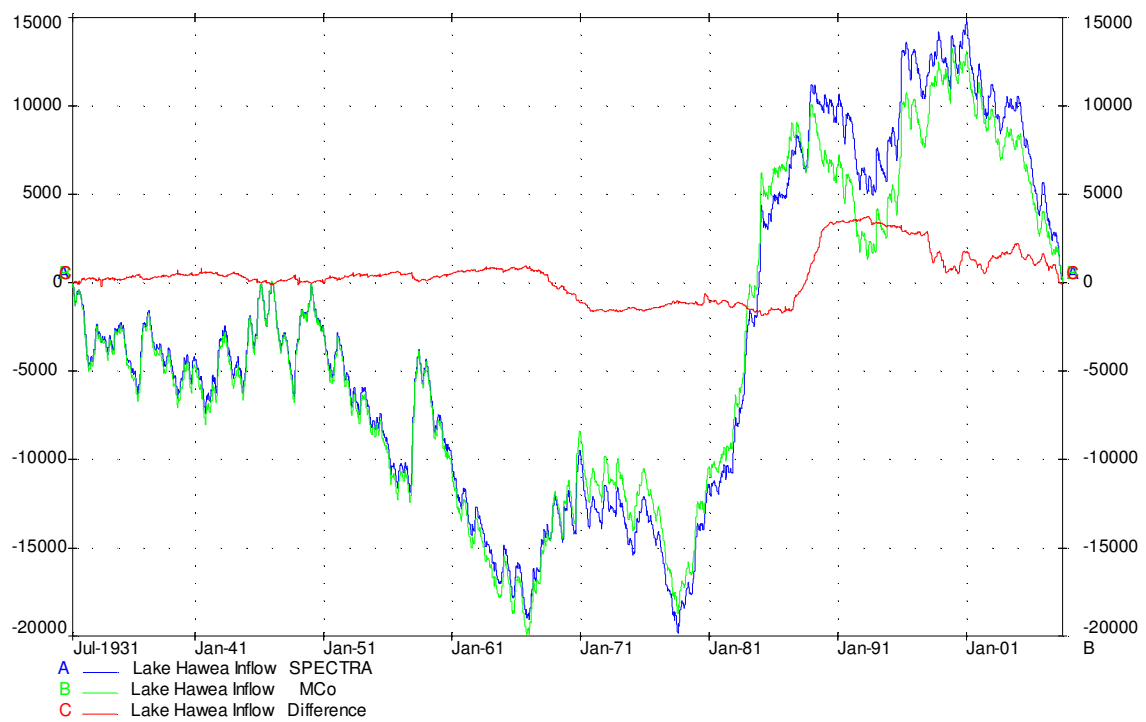


Figure 9.4 Lake Hawea cusum plot

10 Lake Te Anau

10.1 Visual comparison

The two datasets for Lake Te Anau (Figure 10.1) appear to be similar throughout the length of record.

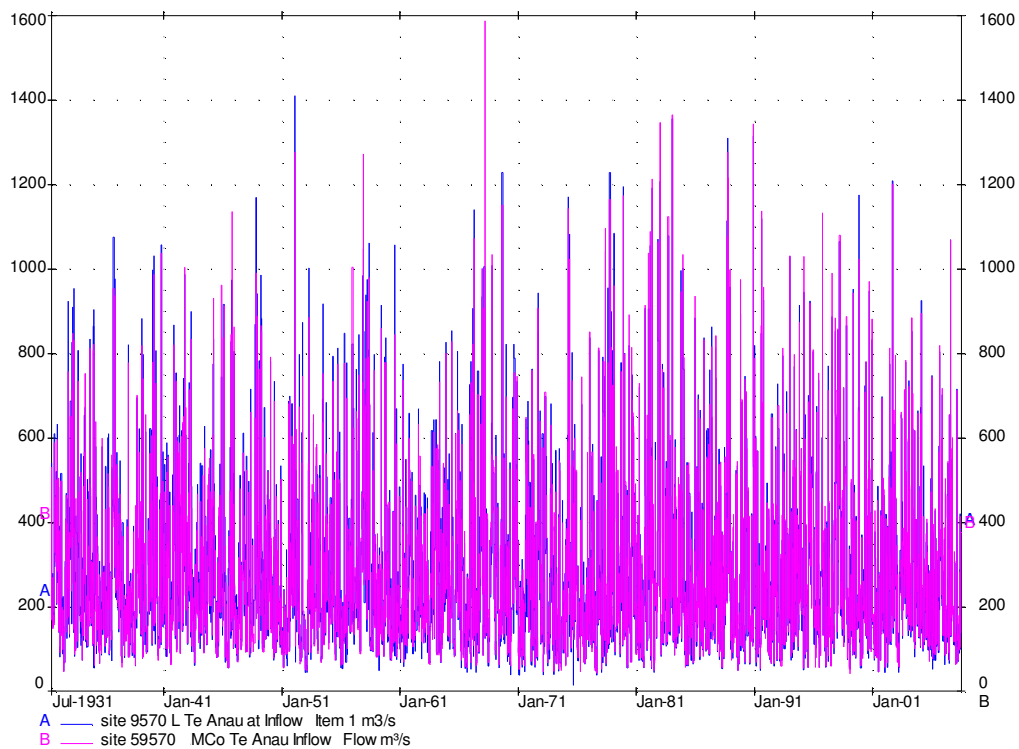


Figure 10.1 Lake Te Anau comparison of data sets

10.2 Analysis

The statistical analysis in Table 10.1 shows that the minimum have a 64% difference, this is 27m³/s. However, the means and medians are very similar. The flow duration curves are also very similar (Figure 10.2).

Table 10.1 Statistical analysis for Lake Te Anau

| | SPECTRA (m³/s) | M-co (m³/s) | Difference (%) |
|--------|--------------------------------------|-----------------------------------|---------------------------|
| Min | 15 | 42 | 64 |
| Max | 1411 | 1589 | 11 |
| Mean | 283 | 284 | 0 |
| Median | 222 | 225 | 1 |

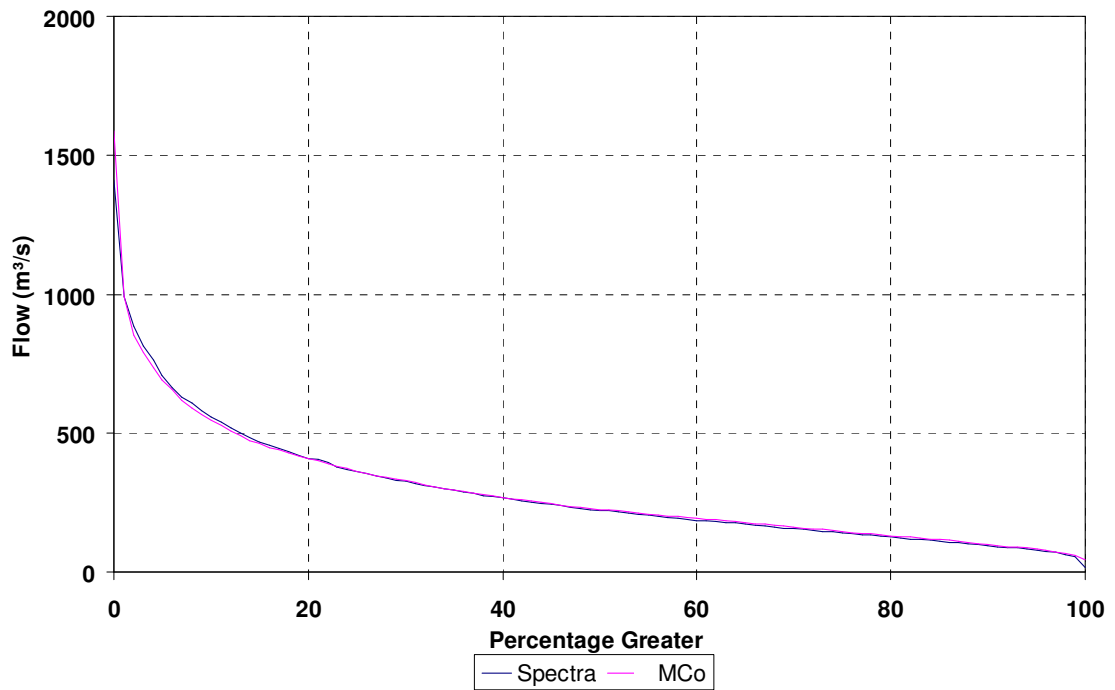


Figure 10.2 Te Anau flow duration curve

10.3 Plot of difference

Figure 10.3 shows some quite large differences in flow, including one event where M-co is almost 800m³/s larger than SPECTRA. The means are very similar for Lake Te Anau, therefore it is possible that the differences seen in Figure 10.3 are caused by a slight time lag between the datasets.

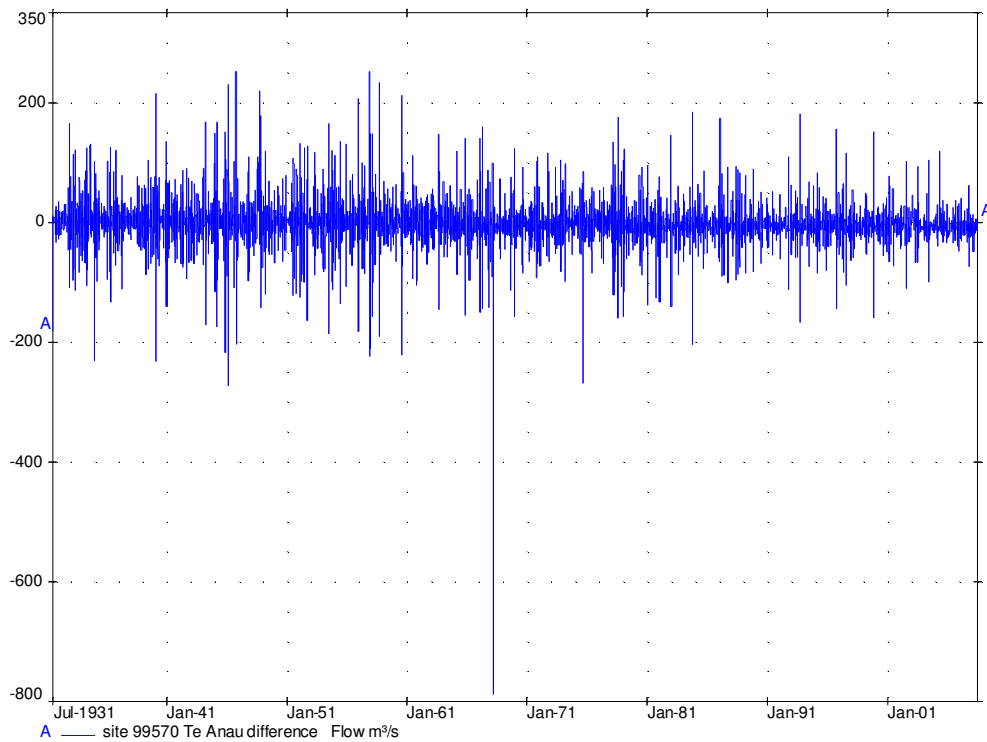


Figure 10.3 Lake Te Anau - difference between SPECTRA and M-co

10.4 Cusum plot

Figure 10.4 shows the cusum for the SPECTRA data, the M-co data, and the difference between the two. The differences seen in this plot are relatively minor.

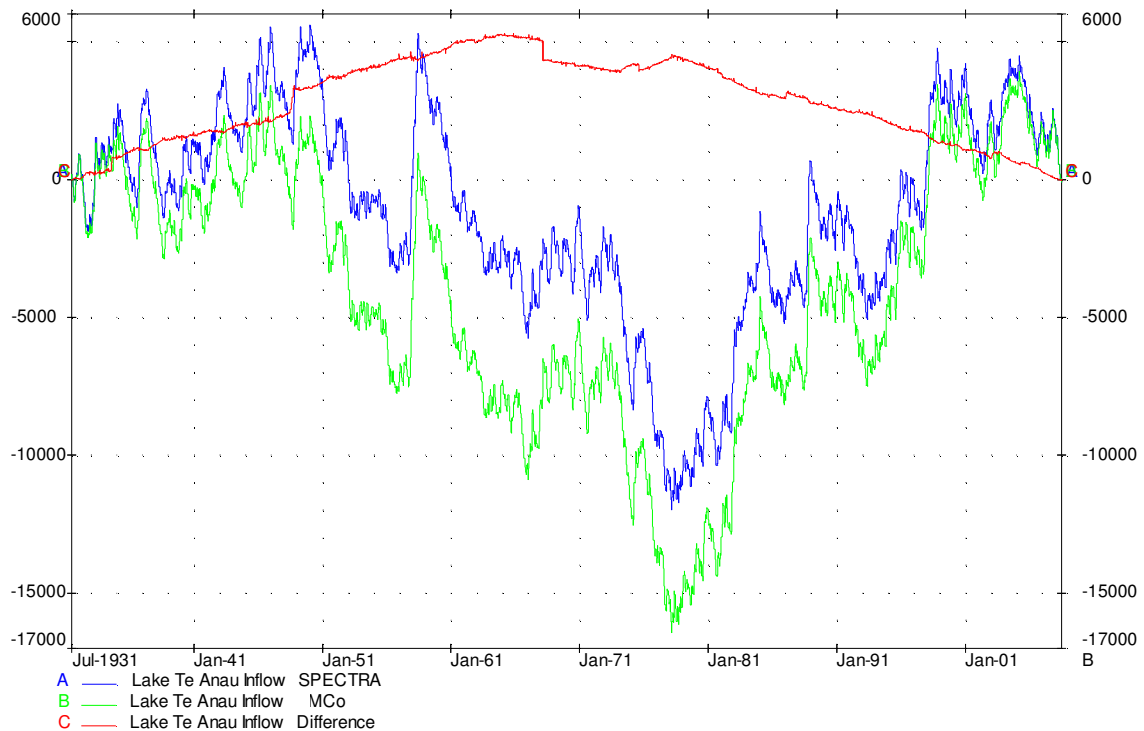


Figure 10.4 Lake Te Anau cusum plot

11 Lake Manapouri

The M-co local inflows to Lake Manapouri are derived from a simple correlation with Lake Te Anau inflow. That is, they are not based on any directly measured inflow data to Lake Manapouri. The closest approximation to this definition of local inflows within the Spectra dataset is site 99551 – Manapouri local inflow with Mararoa. These inflow series were therefore used in the comparison which is described below.

11.1 Visual comparison

When the M-co data is plotted over the SPECTRA data, the two series appear to be very similar (Figure 11.1). The large spike that occurs in the M-co data in 1968 does not occur in the SPECTRA data. As will be discussed later, it is this spike that leads to the significant difference in the maximum inflows between the two datasets. This apparently anomalous spike highlights one of the consequences of comparing real-time estimates of inflow with quality assured and audited data. The auditing process corrects or removes any errors which may exist in the real-time data.

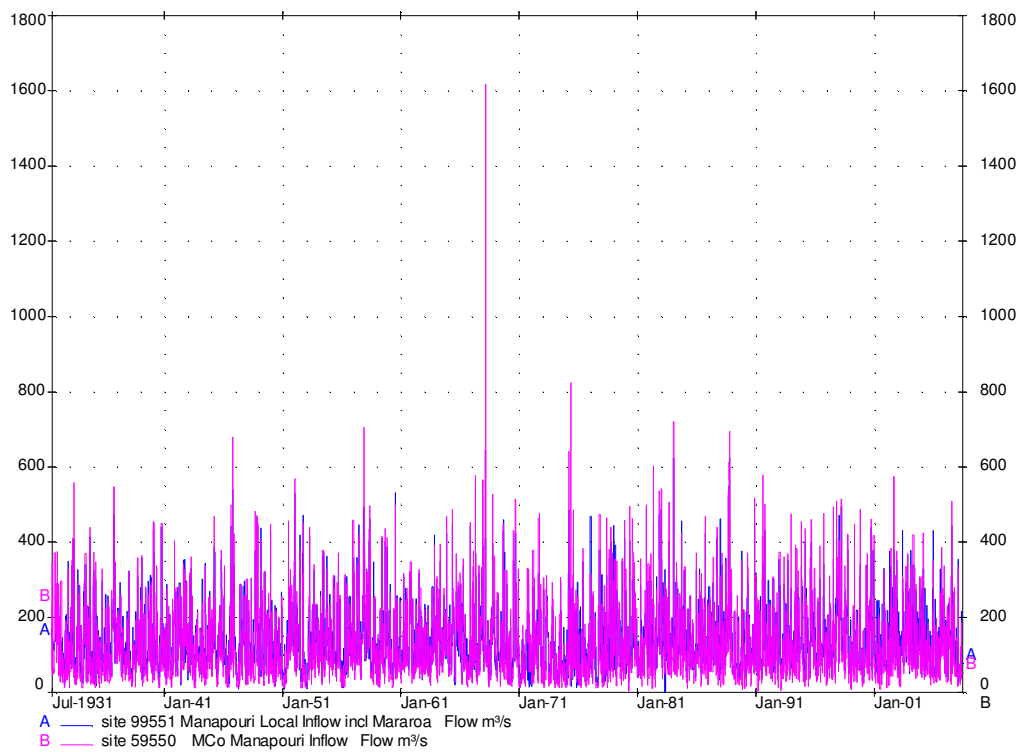


Figure 11.1 Lake Manapouri comparison of data sets

11.2 Analysis

Table 11.1 shows significant differences in the datasets for the maximum estimated inflows. The other statistical measures all appear reasonably similar. As discussed, the difference in the maximum values is caused by the apparently anomalous spike in the M-co data series during 1968. This large difference between the maximum values in the SPECTRA and M-co inflow series is also shown in Figure 11.3.

Table 11.1 Statistical analysis for Lake Manapouri

| | SPECTRA (m³/s) | M-co (m³/s) | Difference (%) |
|--------|--------------------------------------|-----------------------------------|---------------------------|
| Min | 0 | 4 | NA |
| Max | 626 | 1618 | 159 |
| Mean | 136 | 129 | 5 |
| Median | 116 | 101 | 13 |

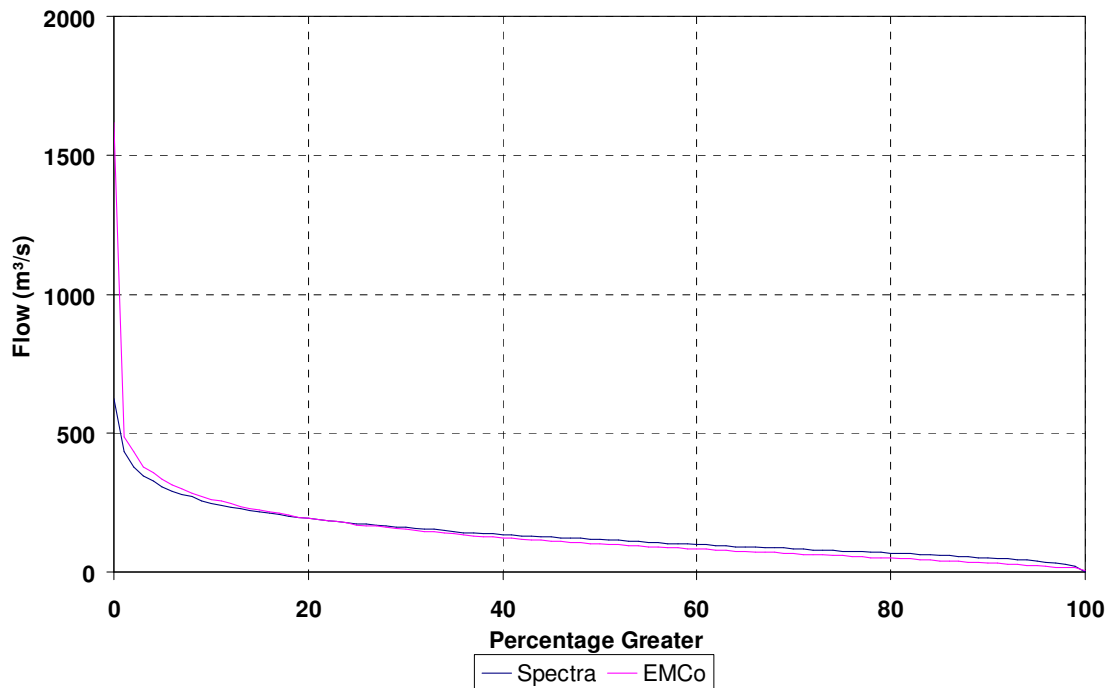


Figure 11.2 Lake Manapouri flow duration curve

11.3 Plot of difference

Figure 11.3 shows two occasions when the M-co record estimates significantly larger inflows than the SPECTRA record. Over the rest of the time series the two records appear very similar. Any differences are essentially randomly and evenly distributed about zero.

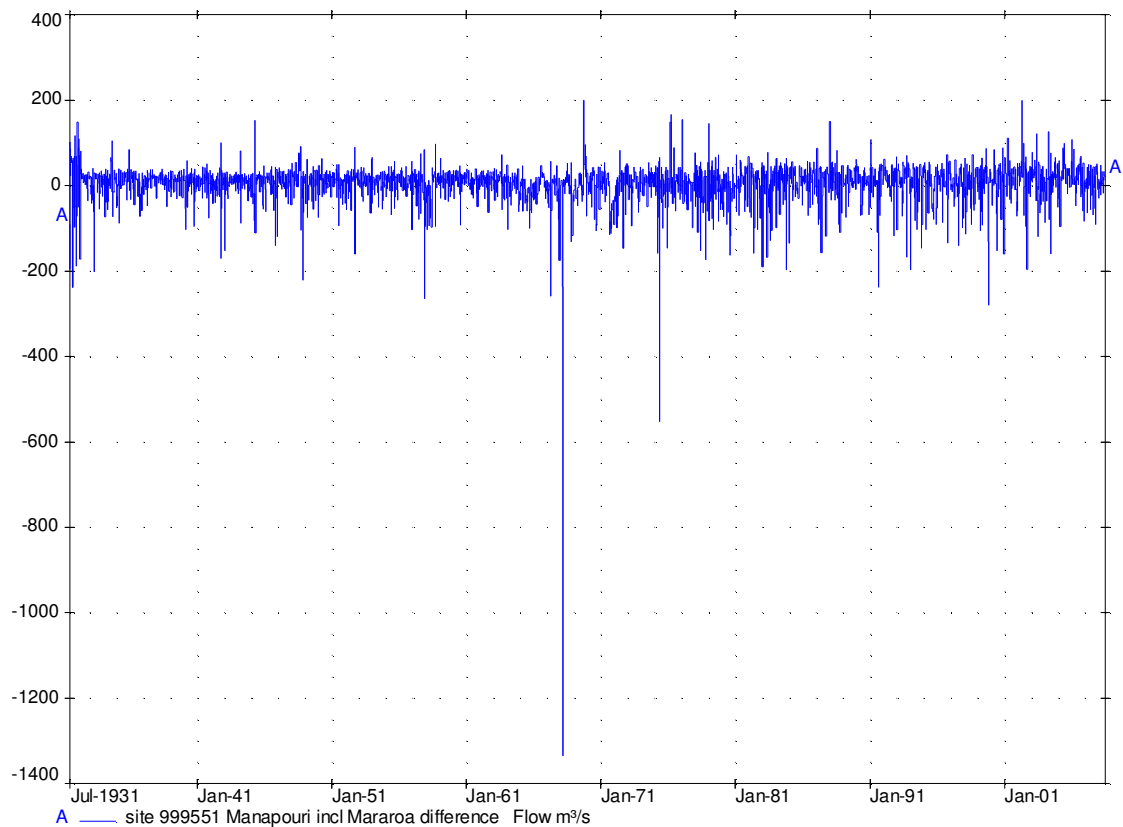


Figure 11.3 Lake Manapouri - difference between SPECTRA and M-co

11.4 Cusum plot

The Lake Manapouri Cusum plot shows some differences as expected from the previous discussion. There is no clear trend to the differences over time although the pattern would appear to change after the early 1970s. It is likely that this change is caused by the way the two datasets consider the effects of the Manapouri Power Scheme on local inflows.

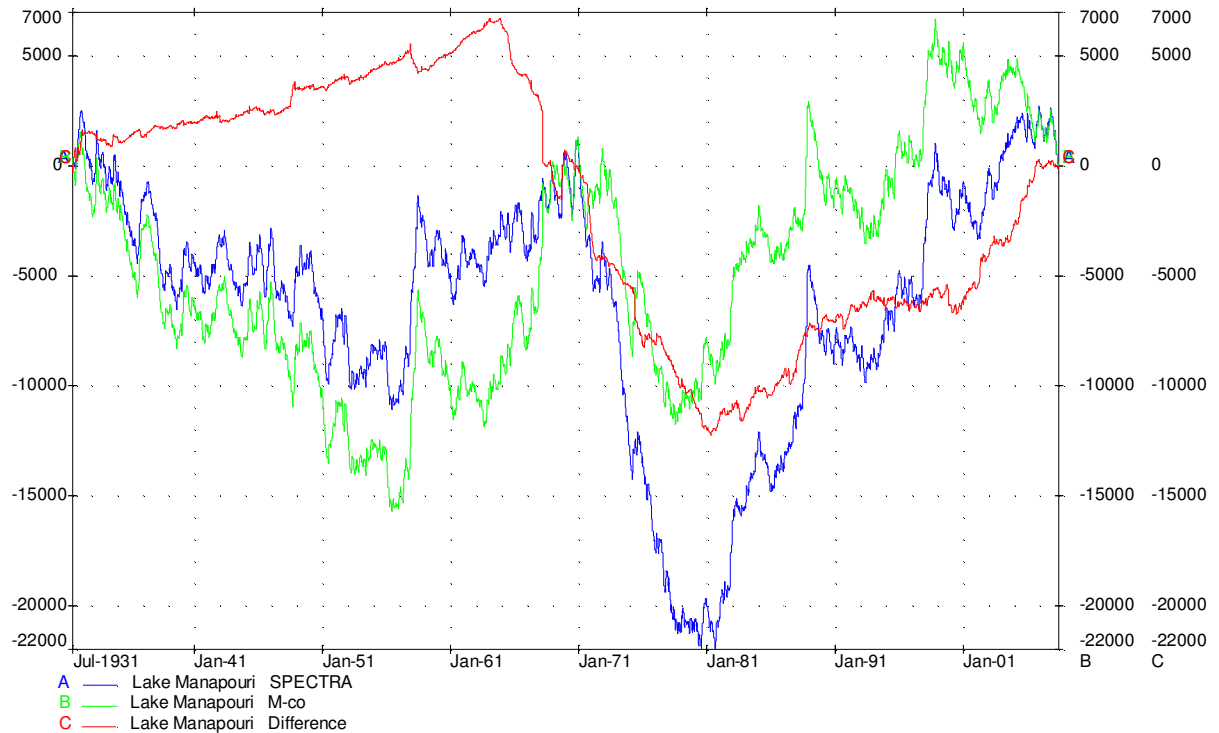


Figure 11.4 Lake Manapouri cusum plot

12 Summary

In general, the two inflow series compared for each of the lakes are very similar. The various 'averages' derived are similar, as are the flow duration curves. The plot of differences between the series shows that any variability tends to be randomly distributed around zero as expected.

There are significant differences apparent when comparing the inflow series for Actual Lake Taupo and Lake Pukaki. In each case it would appear that the difference is a result of the way in which the inflow series model the hydrological changes caused by power development works. In the case of Actual Lake Taupo, the M-co inflow series has larger flows than Spectra until the commissioning of the Tongariro Power Development. After TPD is completed the two inflow series are essentially identical. At Lake Pukaki the two series are the same until the high dam is commissioned after which the Spectra inflows are higher.

While the differences between the two inflow series are relatively small extreme values occasionally occur in the M-co series. For example, in both the Te Anau and Manapouri series there is one value in 1968 that is over four times as large as the maximum difference for the entire rest of the series. It is likely that the same value affects both records, and exists because the M-co data are real-time and unaudited. Whatever 'error' caused this extreme value, it is likely to have been removed from the Power Archive files

during the auditing and quality assurance process. Therefore, this 'error' does not exist in the Spectra inflow series derived from the Power Archive.

The minimum (min), maximum (max), mean, and median (med) were calculated for the SPECTRA and M-co inflow series at each site. While big differences are present in some of the minimum and maximum values this is caused by isolated extreme values in one of the inflow series; usually the M-co series. The differences between the average values are generally small, except as discussed above in the case of Actual Lake Taupo and Lake Pukaki. A summary of the percentage differences between the inflow series is listed in Table 12.1.

Table 12.1 Summary of percentage differences for summary statistics

| INFLOW | Difference (%) | | | |
|--------------------|----------------|-----|------|--------|
| | Min | Max | Mean | Median |
| Actual Lake Taupo | 32 | 12 | 12 | 13 |
| Natural Lake Taupo | 27 | 8 | 0 | 0 |
| Lake Ohau | 26 | 1 | 0 | 1 |
| Lake Pukaki | 217 | 19 | 19 | 26 |
| Lake Tekapo | 164 | 8 | 4 | 8 |
| Lake Wanaka | 233 | 1 | 1 | 4 |
| Lake Wakatipu | 2 | 11 | 6 | 7 |
| Lake Hawea | 129 | 3 | 0 | 3 |
| Lake Te Anau | 182 | 13 | 0 | 2 |
| Lake Manapouri | N/A | 159 | 5 | 13 |

The differences between the SPECTRA and M-co inflow series are most likely caused by the two methodologies adopted. In most cases, the differences between the two methods in terms of bulk water are small to insignificant, and affect only a portion of the record.

The differences in general arise because:

- Spectra inflows are calculated using, among other factors, the total lake outflows, while M-co inflow calculations use net lake outflows;
- The two series model the hydrological effects of the power schemes in different ways e.g., Actual Lake Taupo and Lake Pukaki; and
- The outflow series used as input to the inflow calculation are different for a variety of reasons which could be further investigated. It can be seen in several cusum plots that a major change occurs around 1979. Before this, a historical series were derived using data direct from the Power Archive. After this time data were obtained daily from power company records. These data have not been adjusted for subsequent changes to the flow series such as new gate ratings.

Critical in a review of data quality is a process of independent review of the reasons for any changes made to power station data used to provide outflows. There remain significant issues in the lake outflow series. These may be capable of

resolution, or alternatively they may continue to contribute to increased uncertainty for particular periods of record.

The two inflow series compared in this report are created using different methodologies. The M-co series provide real-time estimates of the inflows to the various hydro lakes on a daily basis. The Spectra inflow series, based on quality assured data from the Power Archive, are likely to provide higher resolution and more accurate data for detailed historical analysis.

13 References

Gilbert, D. J., 1978. Calculating Lake Inflow (Note). *Journal of Hydrology (NZ)* 17(1): 39-43.

Henderson, R.D., 1996. Inflow Processing. NIWA Client Report ELE60511 for ECNZ Fuel Resources Group, Wellington. 27p.

Thompson, S. and Ibbitt, R., 1978. Smoothing permanent records of lake level (Note). *Journal of Hydrology (NZ)* 17(1): 44-49.

Appendix A
PCal of each site

Table A.1 Monthly means 1931 to 2008 – SPECTRA Actual Lake Taupo Inflow (m³/s)

| Year | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Mean |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| 1931 | | | | | | | 169 | 153 | 161 | 133 | 125 | 119 | 143 |
| 1932 | 84 | 88 | 67 | 93 | 84 | 146 | 111 | 94 | 105 | 143 | 93 | 78 | 99 |
| 1933 | 93 | 117 | 124 | 107 | 156 | 97 | 131 | 145 | 112 | 84 | 98 | 77 | 112 |
| 1934 | 67 | 134 | 69 | 92 | 97 | 125 | 155 | 134 | 104 | 142 | 131 | 109 | 113 |
| 1935 | 76 | 133 | 101 | 92 | 140 | 219 | 169 | 206 | 140 | 151 | 210 | 124 | 146 |
| 1936 | 201 | 199 | 129 | 126 | 120 | 105 | 157 | 156 | 164 | 134 | 134 | 107 | 144 |
| 1937 | 156 | 94 | 98 | 108 | 184 | 111 | 103 | 87 | 99 | 93 | 87 | 96 | 110 |
| 1938 | 87 | 130 | 60 | 162 | 98 | 124 | 122 | 146 | 130 | 96 | 141 | 121 | 118 |
| 1939 | 119 | 68 | 61 | 68 | 52 | 131 | 111 | 196 | 145 | 101 | 89 | 125 | 106 |
| 1940 | 150 | 196 | 124 | 82 | 95 | 106 | 84 | 88 | 107 | 134 | 142 | 93 | 116 |
| 1941 | 118 | 86 | 144 | 78 | 65 | 133 | 137 | 138 | 135 | 204 | 145 | 127 | 126 |
| 1942 | 122 | 108 | 111 | 127 | 142 | 84 | 206 | 171 | 258 | 183 | 129 | 140 | 149 |
| 1943 | 87 | 69 | 78 | 95 | 87 | 209 | 197 | 157 | 224 | 178 | 129 | 102 | 135 |
| 1944 | 74 | 132 | 111 | 93 | 99 | 101 | 131 | 138 | 132 | 141 | 105 | 127 | 115 |
| 1945 | 174 | 116 | 122 | 100 | 147 | 132 | 157 | 181 | 177 | 172 | 139 | 85 | 142 |
| 1946 | 80 | 52 | 88 | 134 | 108 | 93 | 127 | 238 | 190 | 175 | 158 | 99 | 129 |
| 1947 | 115 | 67 | 62 | 78 | 64 | 210 | 176 | 134 | 147 | 204 | 108 | 119 | 124 |
| 1948 | 104 | 59 | 54 | 91 | 190 | 144 | 184 | 146 | 121 | 180 | 149 | 98 | 127 |
| 1949 | 96 | 94 | 81 | 86 | 168 | 200 | 197 | 159 | 119 | 120 | 118 | 87 | 127 |
| 1950 | 54 | 114 | 46 | 70 | 82 | 102 | 105 | 134 | 119 | 108 | 145 | 92 | 97 |
| 1951 | 98 | 84 | 77 | 83 | 74 | 96 | 189 | 111 | 87 | 151 | 189 | 159 | 117 |
| 1952 | 109 | 111 | 62 | 79 | 110 | 260 | 175 | 134 | 102 | 148 | 238 | 190 | 143 |
| 1953 | 121 | 109 | 71 | 92 | 166 | 202 | 223 | 177 | 148 | 177 | 163 | 111 | 147 |
| 1954 | 90 | 78 | 102 | 78 | 97 | 108 | 115 | 149 | 131 | 82 | 87 | 113 | 103 |
| 1955 | 74 | 93 | 57 | 100 | 180 | 159 | 143 | 164 | 145 | 153 | 121 | 124 | 126 |
| 1956 | 135 | 91 | 58 | 162 | 152 | 279 | 222 | 185 | 144 | 169 | 167 | 156 | 160 |
| 1957 | 110 | 74 | 110 | 74 | 145 | 120 | 133 | 102 | 93 | 147 | 147 | 160 | 118 |
| 1958 | 90 | 256 | 125 | 70 | 130 | 127 | 161 | 166 | 112 | 114 | 124 | 294 | 147 |
| 1959 | 162 | 120 | 122 | 143 | 122 | 126 | 104 | 120 | 92 | 148 | 116 | 86 | 122 |
| 1960 | 67 | 144 | 78 | 53 | 91 | 154 | 161 | 145 | 156 | 117 | 100 | 66 | 111 |
| 1961 | 90 | 74 | 64 | 88 | 64 | 101 | 163 | 112 | 139 | 116 | 77 | 90 | 98 |
| 1962 | 100 | 73 | 184 | 122 | 163 | 202 | 161 | 181 | 185 | 248 | 206 | 193 | 169 |
| 1963 | 121 | 110 | 69 | 71 | 91 | 155 | 171 | 126 | 196 | 87 | 91 | 77 | 114 |
| 1964 | 107 | 80 | 155 | 57 | 75 | 87 | 236 | 188 | 227 | 195 | 130 | 181 | 144 |
| 1965 | 136 | 167 | 116 | 95 | 94 | 144 | 123 | 179 | 103 | 96 | 176 | 135 | 130 |
| 1966 | 140 | 128 | 94 | 121 | 136 | 131 | 215 | 146 | 151 | 107 | 136 | 135 | 137 |
| 1967 | 123 | 150 | 106 | 63 | 89 | 90 | 92 | 199 | 123 | 89 | 162 | 156 | 120 |
| 1968 | 80 | 66 | 51 | 62 | 113 | 184 | 138 | 126 | 117 | 142 | 121 | 135 | 111 |
| 1969 | 110 | 155 | 61 | 70 | 106 | 77 | 81 | 108 | 165 | 91 | 80 | 124 | 102 |

| Year | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Mean |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| 1970 | 69 | 33 | 64 | 66 | 111 | 177 | 144 | 176 | 248 | 198 | 156 | 100 | 129 |
| 1971 | 125 | 93 | 72 | 64 | 110 | 150 | 105 | 177 | 204 | 237 | 163 | 158 | 138 |
| 1972 | 86 | 66 | 212 | 74 | 135 | 101 | 185 | 143 | 145 | 134 | 107 | 91 | 124 |
| 1973 | 89 | 59 | 65 | 50 | 121 | 151 | 93 | 157 | 212 | 122 | 155 | 117 | 116 |
| 1974 | 69 | 80 | 51 | 99 | 114 | 155 | 271 | 200 | 157 | 198 | 144 | 158 | 142 |
| 1975 | 131 | 73 | 97 | 93 | 165 | 212 | 186 | 224 | 207 | 215 | 153 | 121 | 157 |
| 1976 | 203 | 160 | 113 | 102 | 143 | 157 | 219 | 222 | 198 | 174 | 138 | 142 | 164 |
| 1977 | 119 | 98 | 82 | 79 | 147 | 248 | 224 | 178 | 181 | 156 | 134 | 122 | 148 |
| 1978 | 95 | 69 | 42 | 102 | 77 | 96 | 201 | 142 | 153 | 136 | 180 | 128 | 119 |
| 1979 | 78 | 117 | 177 | 141 | 199 | 121 | 137 | 201 | 181 | 243 | 201 | 171 | 164 |
| 1980 | 197 | 129 | 148 | 187 | 151 | 165 | 195 | 207 | 223 | 170 | 184 | 203 | 180 |
| 1981 | 144 | 126 | 122 | 100 | 135 | 230 | 221 | 207 | 189 | 187 | 206 | 186 | 171 |
| 1982 | 119 | 140 | 128 | 93 | 154 | 150 | 132 | 130 | 153 | 143 | 125 | 158 | 135 |
| 1983 | 117 | 92 | 77 | 123 | 151 | 152 | 153 | 136 | 183 | 244 | 195 | 150 | 148 |
| 1984 | 119 | 140 | 162 | 92 | 125 | 127 | 189 | 166 | 139 | 125 | 130 | 180 | 141 |
| 1985 | 135 | 95 | 94 | 99 | 79 | 178 | 155 | 156 | 167 | 126 | 149 | 175 | 134 |
| 1986 | 257 | 156 | 100 | 97 | 160 | 151 | 201 | 205 | 185 | 189 | 138 | 116 | 163 |
| 1987 | 140 | 86 | 132 | 145 | 147 | 149 | 126 | 137 | 155 | 177 | 152 | 183 | 144 |
| 1988 | 90 | 104 | 121 | 94 | 150 | 189 | 204 | 256 | 243 | 226 | 230 | 217 | 177 |
| 1989 | 240 | 157 | 121 | 108 | 129 | 230 | 193 | 138 | 164 | 280 | 163 | 129 | 171 |
| 1990 | 147 | 111 | 183 | 144 | 185 | 133 | 175 | 298 | 168 | 182 | 189 | 112 | 169 |
| 1991 | 116 | 173 | 106 | 117 | 106 | 100 | 165 | 292 | 227 | 189 | 149 | 128 | 156 |
| 1992 | 147 | 140 | 121 | 110 | 85 | 137 | 219 | 283 | 201 | 184 | 165 | 188 | 165 |
| 1993 | 120 | 89 | 81 | 93 | 147 | 221 | 124 | 102 | 110 | 108 | 149 | 114 | 122 |
| 1994 | 99 | 83 | 57 | 90 | 134 | 187 | 226 | 255 | 213 | 217 | 278 | 141 | 165 |
| 1995 | 119 | 133 | 146 | 226 | 164 | 199 | 290 | 212 | 265 | 237 | 201 | 211 | 200 |
| 1996 | 168 | 164 | 136 | 228 | 178 | 170 | 243 | 231 | 280 | 196 | 185 | 202 | 198 |
| 1997 | 130 | 118 | 88 | 107 | 107 | 142 | 123 | 135 | 167 | 166 | 154 | 134 | 131 |
| 1998 | 108 | 126 | 90 | 99 | 134 | 167 | 366 | 203 | 193 | 283 | 195 | 148 | 177 |
| 1999 | 124 | 73 | 101 | 105 | 180 | 195 | 163 | 174 | 174 | 118 | 243 | 146 | 150 |
| 2000 | 138 | 99 | 58 | 115 | 120 | 173 | 155 | 165 | 211 | 229 | 134 | 161 | 147 |
| 2001 | 119 | 140 | 93 | 88 | 171 | 142 | 120 | 153 | 117 | 135 | 194 | 291 | 147 |
| 2002 | 145 | 103 | 88 | 97 | 111 | 205 | 228 | 161 | 192 | 154 | 139 | 176 | 150 |
| 2003 | 105 | 70 | 79 | 58 | 129 | 175 | 134 | 108 | 209 | 250 | 168 | 197 | 141 |
| 2004 | 121 | 290 | 161 | 105 | 153 | 257 | 216 | 223 | 177 | 236 | 159 | 175 | 189 |
| 2005 | 177 | 113 | 94 | 66 | 115 | 132 | 159 | 136 | 146 | 222 | 97 | 168 | 136 |
| 2006 | 149 | 146 | 89 | 162 | 164 | 166 | 210 | 247 | 141 | 130 | 207 | 146 | 163 |
| 2007 | 150 | 92 | 97 | 76 | 86 | 145 | 199 | 233 | 142 | 186 | 125 | 133 | 139 |
| 2008 | 72 | 58 | 56 | 107 | 120 | 135 | | | | | | | 91 |
| Min. | 54 | 33 | 42 | 50 | 52 | 77 | 81 | 87 | 87 | 82 | 77 | 66 | 97 |
| Mean | 119 | 112 | 99 | 101 | 126 | 154 | 169 | 169 | 163 | 163 | 150 | 140 | 139 |
| Max. | 257 | 290 | 212 | 228 | 199 | 279 | 366 | 298 | 280 | 283 | 278 | 294 | 200 |

Table A.2 Monthly means 1931 to 2008 – M-co Actual Lake Taupo Inflow (m³/s)

| Year | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Mean |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| 1931 | | | | | | | 208 | 190 | 199 | 167 | 159 | 146 | 178 |
| 1932 | 110 | 110 | 89 | 114 | 107 | 172 | 136 | 118 | 130 | 173 | 122 | 102 | 124 |
| 1933 | 117 | 142 | 149 | 130 | 191 | 126 | 160 | 179 | 144 | 109 | 124 | 99 | 139 |
| 1934 | 88 | 175 | 90 | 109 | 120 | 153 | 183 | 171 | 129 | 175 | 164 | 136 | 141 |
| 1935 | 101 | 159 | 126 | 115 | 172 | 262 | 210 | 254 | 176 | 187 | 258 | 160 | 182 |
| 1936 | 240 | 248 | 162 | 156 | 152 | 131 | 196 | 191 | 204 | 170 | 168 | 133 | 179 |
| 1937 | 195 | 116 | 122 | 134 | 224 | 139 | 131 | 111 | 124 | 120 | 112 | 120 | 138 |
| 1938 | 111 | 152 | 81 | 190 | 122 | 151 | 152 | 180 | 165 | 123 | 170 | 153 | 145 |
| 1939 | 147 | 91 | 83 | 81 | 64 | 157 | 135 | 236 | 181 | 132 | 112 | 155 | 132 |
| 1940 | 177 | 238 | 160 | 105 | 121 | 130 | 110 | 115 | 131 | 159 | 178 | 122 | 145 |
| 1941 | 139 | 118 | 177 | 103 | 86 | 157 | 165 | 172 | 171 | 247 | 185 | 156 | 157 |
| 1942 | 152 | 138 | 146 | 158 | 175 | 114 | 250 | 215 | 304 | 227 | 163 | 178 | 185 |
| 1943 | 108 | 148 | 104 | 117 | 123 | 237 | 243 | 192 | 266 | 226 | 164 | 126 | 171 |
| 1944 | 98 | 156 | 136 | 115 | 123 | 133 | 156 | 175 | 165 | 173 | 132 | 162 | 144 |
| 1945 | 212 | 151 | 152 | 128 | 176 | 168 | 197 | 219 | 223 | 207 | 179 | 110 | 177 |
| 1946 | 102 | 83 | 112 | 160 | 134 | 120 | 150 | 284 | 231 | 221 | 194 | 132 | 161 |
| 1947 | 140 | 90 | 85 | 96 | 79 | 241 | 217 | 169 | 184 | 249 | 138 | 147 | 153 |
| 1948 | 133 | 82 | 80 | 111 | 220 | 179 | 225 | 185 | 153 | 222 | 186 | 127 | 159 |
| 1949 | 122 | 118 | 105 | 108 | 197 | 241 | 241 | 200 | 150 | 151 | 150 | 110 | 158 |
| 1950 | 77 | 138 | 57 | 84 | 100 | 127 | 131 | 160 | 144 | 133 | 181 | 116 | 120 |
| 1951 | 122 | 111 | 99 | 106 | 95 | 126 | 211 | 141 | 113 | 182 | 236 | 198 | 145 |
| 1952 | 136 | 140 | 84 | 101 | 132 | 301 | 222 | 167 | 132 | 180 | 287 | 235 | 176 |
| 1953 | 156 | 138 | 96 | 119 | 195 | 244 | 272 | 221 | 186 | 218 | 202 | 140 | 182 |
| 1954 | 118 | 100 | 127 | 100 | 121 | 133 | 140 | 178 | 164 | 106 | 113 | 138 | 129 |
| 1955 | 97 | 118 | 72 | 114 | 211 | 200 | 177 | 201 | 182 | 192 | 152 | 164 | 157 |
| 1956 | 162 | 122 | 80 | 187 | 184 | 327 | 275 | 227 | 179 | 212 | 203 | 194 | 196 |
| 1957 | 142 | 98 | 136 | 96 | 170 | 152 | 162 | 128 | 118 | 182 | 181 | 198 | 148 |
| 1958 | 116 | 275 | 170 | 94 | 154 | 157 | 198 | 208 | 143 | 143 | 155 | 330 | 178 |
| 1959 | 201 | 152 | 152 | 177 | 152 | 159 | 131 | 151 | 117 | 182 | 147 | 109 | 152 |
| 1960 | 94 | 166 | 98 | 68 | 111 | 181 | 201 | 182 | 195 | 144 | 124 | 93 | 138 |
| 1961 | 115 | 93 | 84 | 106 | 80 | 122 | 195 | 150 | 180 | 144 | 103 | 113 | 124 |
| 1962 | 124 | 86 | 218 | 147 | 193 | 247 | 207 | 228 | 230 | 289 | 246 | 237 | 205 |
| 1963 | 148 | 131 | 90 | 92 | 114 | 188 | 214 | 162 | 241 | 115 | 122 | 101 | 143 |
| 1964 | 137 | 92 | 183 | 72 | 99 | 111 | 274 | 238 | 275 | 242 | 167 | 216 | 176 |
| 1965 | 170 | 208 | 154 | 124 | 125 | 178 | 155 | 224 | 137 | 122 | 219 | 177 | 166 |
| 1966 | 176 | 154 | 126 | 142 | 166 | 166 | 257 | 181 | 183 | 132 | 163 | 169 | 168 |
| 1967 | 162 | 167 | 126 | 86 | 113 | 122 | 119 | 229 | 162 | 116 | 196 | 190 | 149 |
| 1968 | 117 | 90 | 71 | 81 | 148 | 201 | 173 | 173 | 160 | 180 | 157 | 166 | 143 |
| 1969 | 141 | 178 | 89 | 100 | 133 | 105 | 113 | 134 | 191 | 106 | 115 | 155 | 130 |

| Year | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Mean |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| 1970 | 109 | 91 | 82 | 90 | 161 | 228 | 186 | 225 | 300 | 245 | 179 | 135 | 170 |
| 1971 | 146 | 148 | 85 | 72 | 126 | 226 | 133 | 191 | 262 | 288 | 209 | 194 | 173 |
| 1972 | 99 | 87 | 230 | 99 | 171 | 129 | 221 | 186 | 167 | 164 | 138 | 106 | 150 |
| 1973 | 120 | 54 | 75 | 67 | 128 | 146 | 94 | 152 | 211 | 127 | 155 | 129 | 122 |
| 1974 | 70 | 66 | 46 | 95 | 113 | 157 | 269 | 214 | 163 | 201 | 145 | 156 | 142 |
| 1975 | 133 | 83 | 97 | 92 | 161 | 211 | 188 | 231 | 212 | 215 | 152 | 122 | 159 |
| 1976 | 208 | 167 | 108 | 111 | 146 | 162 | 245 | 237 | 216 | 185 | 141 | 147 | 173 |
| 1977 | 122 | 95 | 82 | 79 | 151 | 243 | 241 | 187 | 193 | 168 | 135 | 122 | 152 |
| 1978 | 86 | 67 | 48 | 96 | 84 | 95 | 198 | 148 | 156 | 139 | 184 | 143 | 121 |
| 1979 | 78 | 127 | 184 | 144 | 207 | 126 | 143 | 208 | 183 | 243 | 198 | 162 | 167 |
| 1980 | 194 | 123 | 141 | 182 | 145 | 161 | 186 | 186 | 214 | 164 | 182 | 198 | 173 |
| 1981 | 141 | 119 | 119 | 100 | 122 | 226 | 216 | 198 | 187 | 185 | 193 | 186 | 166 |
| 1982 | 112 | 128 | 125 | 93 | 148 | 145 | 127 | 123 | 147 | 137 | 121 | 150 | 130 |
| 1983 | 111 | 88 | 70 | 116 | 141 | 149 | 148 | 134 | 178 | 247 | 190 | 150 | 144 |
| 1984 | 115 | 137 | 161 | 91 | 121 | 123 | 184 | 167 | 136 | 122 | 127 | 180 | 139 |
| 1985 | 134 | 92 | 92 | 97 | 78 | 180 | 151 | 152 | 168 | 126 | 149 | 170 | 133 |
| 1986 | 258 | 150 | 104 | 93 | 159 | 149 | 198 | 204 | 184 | 189 | 137 | 115 | 162 |
| 1987 | 139 | 83 | 127 | 147 | 143 | 145 | 125 | 135 | 154 | 177 | 149 | 183 | 143 |
| 1988 | 86 | 105 | 119 | 92 | 148 | 187 | 199 | 254 | 242 | 237 | 233 | 213 | 177 |
| 1989 | 234 | 154 | 120 | 105 | 131 | 229 | 191 | 135 | 163 | 279 | 162 | 128 | 169 |
| 1990 | 142 | 114 | 178 | 139 | 184 | 132 | 174 | 295 | 167 | 180 | 186 | 113 | 168 |
| 1991 | 113 | 174 | 105 | 114 | 110 | 101 | 164 | 290 | 224 | 185 | 151 | 120 | 154 |
| 1992 | 155 | 140 | 119 | 110 | 85 | 135 | 219 | 277 | 201 | 184 | 159 | 188 | 165 |
| 1993 | 122 | 90 | 79 | 95 | 155 | 221 | 122 | 105 | 110 | 107 | 148 | 114 | 122 |
| 1994 | 98 | 83 | 56 | 92 | 131 | 187 | 221 | 260 | 212 | 216 | 282 | 139 | 165 |
| 1995 | 122 | 130 | 144 | 228 | 162 | 200 | 290 | 210 | 265 | 237 | 201 | 213 | 201 |
| 1996 | 166 | 166 | 134 | 227 | 179 | 167 | 248 | 228 | 280 | 197 | 185 | 201 | 198 |
| 1997 | 131 | 119 | 91 | 107 | 109 | 135 | 128 | 135 | 167 | 166 | 153 | 135 | 131 |
| 1998 | 102 | 114 | 73 | 96 | 127 | 163 | 387 | 194 | 192 | 278 | 198 | 153 | 174 |
| 1999 | 124 | 72 | 99 | 108 | 177 | 201 | 158 | 172 | 167 | 105 | 224 | 160 | 148 |
| 2000 | 128 | 106 | 42 | 87 | 104 | 174 | 148 | 164 | 207 | 238 | 130 | 161 | 141 |
| 2001 | 121 | 135 | 77 | 70 | 158 | 143 | 108 | 148 | 118 | 121 | 200 | 294 | 141 |
| 2002 | 150 | 104 | 84 | 77 | 102 | 210 | 232 | 169 | 203 | 165 | 142 | 179 | 152 |
| 2003 | 105 | 57 | 65 | 37 | 104 | 184 | 133 | 98 | 208 | 252 | 173 | 199 | 135 |
| 2004 | 131 | 295 | 163 | 110 | 157 | 255 | 217 | 223 | 178 | 236 | 162 | 178 | 192 |
| 2005 | 180 | 115 | 101 | 75 | 116 | 138 | 162 | 139 | 146 | 225 | 108 | 174 | 140 |
| 2006 | 154 | 152 | 90 | 166 | 165 | 166 | 212 | 247 | 143 | 131 | 208 | 149 | 165 |
| 2007 | 159 | 96 | 102 | 80 | 94 | 144 | 200 | 232 | 144 | 188 | 129 | 132 | 142 |
| 2008 | 77 | 60 | 61 | 115 | 132 | 137 | | | | | | | 97 |
| Min. | 70 | 54 | 42 | 37 | 64 | 95 | 94 | 98 | 110 | 105 | 103 | 93 | 120 |
| Mean | 135 | 127 | 111 | 112 | 139 | 171 | 188 | 188 | 182 | 182 | 168 | 157 | 155 |
| Max. | 258 | 295 | 230 | 228 | 224 | 327 | 387 | 295 | 304 | 289 | 287 | 330 | 205 |

Table A.3 Monthly means 1931 to 2008 – SPECTRA Natural Lake Taupo Inflow (m³/s)

| Year | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Mean |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| 1931 | | | | | | | 169 | 153 | 161 | 133 | 125 | 119 | 143 |
| 1932 | 84 | 88 | 67 | 93 | 84 | 146 | 111 | 94 | 105 | 143 | 93 | 78 | 99 |
| 1933 | 93 | 117 | 124 | 107 | 156 | 97 | 131 | 145 | 112 | 84 | 98 | 77 | 112 |
| 1934 | 67 | 134 | 69 | 92 | 97 | 125 | 155 | 134 | 104 | 142 | 131 | 109 | 113 |
| 1935 | 76 | 133 | 101 | 92 | 140 | 219 | 169 | 206 | 140 | 151 | 210 | 124 | 146 |
| 1936 | 201 | 199 | 129 | 126 | 120 | 105 | 157 | 156 | 164 | 134 | 134 | 107 | 144 |
| 1937 | 156 | 94 | 98 | 108 | 184 | 111 | 103 | 87 | 99 | 93 | 87 | 96 | 110 |
| 1938 | 87 | 130 | 60 | 162 | 98 | 124 | 122 | 146 | 130 | 96 | 141 | 121 | 118 |
| 1939 | 119 | 68 | 61 | 68 | 52 | 131 | 111 | 196 | 145 | 101 | 89 | 125 | 106 |
| 1940 | 150 | 196 | 124 | 82 | 95 | 106 | 84 | 88 | 107 | 134 | 142 | 93 | 116 |
| 1941 | 118 | 86 | 144 | 78 | 65 | 133 | 137 | 138 | 135 | 204 | 145 | 127 | 126 |
| 1942 | 122 | 108 | 111 | 127 | 142 | 84 | 206 | 171 | 258 | 183 | 129 | 140 | 149 |
| 1943 | 87 | 69 | 78 | 95 | 87 | 209 | 197 | 157 | 224 | 178 | 129 | 102 | 135 |
| 1944 | 74 | 132 | 111 | 93 | 99 | 101 | 131 | 138 | 132 | 141 | 105 | 127 | 115 |
| 1945 | 174 | 116 | 122 | 100 | 147 | 132 | 157 | 181 | 177 | 172 | 139 | 85 | 142 |
| 1946 | 80 | 52 | 88 | 134 | 108 | 93 | 127 | 238 | 190 | 175 | 158 | 99 | 129 |
| 1947 | 115 | 67 | 62 | 78 | 64 | 210 | 176 | 134 | 147 | 204 | 108 | 119 | 124 |
| 1948 | 104 | 59 | 54 | 91 | 190 | 144 | 184 | 146 | 121 | 180 | 149 | 98 | 127 |
| 1949 | 96 | 94 | 81 | 86 | 168 | 200 | 197 | 159 | 119 | 120 | 118 | 87 | 127 |
| 1950 | 54 | 114 | 46 | 70 | 82 | 102 | 105 | 134 | 119 | 108 | 145 | 92 | 97 |
| 1951 | 98 | 84 | 77 | 83 | 74 | 96 | 189 | 111 | 87 | 151 | 189 | 159 | 117 |
| 1952 | 109 | 111 | 62 | 79 | 110 | 260 | 175 | 134 | 102 | 148 | 238 | 190 | 143 |
| 1953 | 121 | 109 | 71 | 92 | 166 | 202 | 223 | 177 | 148 | 177 | 163 | 111 | 147 |
| 1954 | 90 | 78 | 102 | 78 | 97 | 108 | 115 | 149 | 131 | 82 | 87 | 113 | 103 |
| 1955 | 74 | 93 | 57 | 100 | 180 | 159 | 143 | 164 | 145 | 153 | 121 | 124 | 126 |
| 1956 | 135 | 91 | 58 | 162 | 152 | 279 | 222 | 185 | 144 | 169 | 167 | 156 | 160 |
| 1957 | 110 | 74 | 110 | 74 | 145 | 120 | 133 | 102 | 93 | 147 | 147 | 160 | 118 |
| 1958 | 90 | 256 | 125 | 70 | 130 | 127 | 161 | 166 | 112 | 114 | 124 | 294 | 147 |
| 1959 | 162 | 120 | 122 | 143 | 122 | 126 | 104 | 120 | 92 | 148 | 116 | 86 | 122 |
| 1960 | 67 | 144 | 78 | 53 | 91 | 154 | 161 | 145 | 156 | 117 | 100 | 66 | 111 |
| 1961 | 90 | 74 | 64 | 88 | 64 | 101 | 163 | 112 | 139 | 116 | 77 | 90 | 98 |
| 1962 | 100 | 73 | 184 | 122 | 163 | 202 | 161 | 181 | 185 | 248 | 206 | 193 | 169 |
| 1963 | 121 | 110 | 69 | 71 | 91 | 155 | 171 | 126 | 196 | 87 | 91 | 77 | 114 |
| 1964 | 107 | 80 | 155 | 57 | 75 | 87 | 236 | 188 | 227 | 195 | 130 | 181 | 144 |
| 1965 | 136 | 167 | 116 | 95 | 94 | 144 | 123 | 179 | 103 | 96 | 176 | 135 | 130 |
| 1966 | 140 | 128 | 94 | 121 | 136 | 131 | 215 | 146 | 151 | 107 | 136 | 135 | 137 |
| 1967 | 123 | 150 | 106 | 63 | 89 | 90 | 92 | 199 | 123 | 89 | 162 | 156 | 120 |
| 1968 | 80 | 66 | 51 | 62 | 113 | 184 | 138 | 126 | 117 | 142 | 121 | 135 | 111 |
| 1969 | 110 | 155 | 61 | 70 | 106 | 77 | 81 | 108 | 165 | 91 | 80 | 124 | 102 |

| Year | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Mean |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| 1970 | 69 | 33 | 64 | 66 | 111 | 177 | 144 | 176 | 248 | 198 | 156 | 100 | 129 |
| 1971 | 125 | 99 | 69 | 63 | 110 | 149 | 104 | 174 | 202 | 238 | 160 | 157 | 138 |
| 1972 | 87 | 66 | 210 | 72 | 131 | 100 | 182 | 141 | 143 | 132 | 103 | 85 | 121 |
| 1973 | 89 | 55 | 64 | 46 | 101 | 122 | 67 | 132 | 186 | 98 | 125 | 102 | 99 |
| 1974 | 50 | 61 | 41 | 87 | 99 | 128 | 235 | 169 | 131 | 164 | 115 | 132 | 118 |
| 1975 | 114 | 59 | 80 | 83 | 144 | 184 | 162 | 200 | 182 | 192 | 131 | 101 | 137 |
| 1976 | 187 | 146 | 96 | 92 | 122 | 134 | 193 | 190 | 173 | 149 | 113 | 116 | 143 |
| 1977 | 92 | 78 | 64 | 63 | 118 | 214 | 192 | 153 | 154 | 130 | 109 | 97 | 122 |
| 1978 | 69 | 52 | 32 | 86 | 62 | 79 | 170 | 116 | 127 | 110 | 151 | 103 | 97 |
| 1979 | 59 | 105 | 163 | 114 | 169 | 99 | 114 | 176 | 153 | 196 | 158 | 124 | 136 |
| 1980 | 171 | 95 | 111 | 140 | 104 | 123 | 148 | 144 | 173 | 125 | 141 | 165 | 137 |
| 1981 | 107 | 88 | 91 | 80 | 99 | 186 | 175 | 158 | 141 | 140 | 165 | 143 | 131 |
| 1982 | 78 | 116 | 99 | 74 | 115 | 111 | 96 | 94 | 117 | 105 | 86 | 117 | 101 |
| 1983 | 77 | 58 | 52 | 90 | 108 | 111 | 113 | 106 | 144 | 205 | 165 | 116 | 112 |
| 1984 | 85 | 111 | 135 | 72 | 92 | 95 | 151 | 128 | 109 | 102 | 98 | 145 | 110 |
| 1985 | 99 | 68 | 73 | 81 | 63 | 152 | 118 | 116 | 130 | 92 | 114 | 144 | 104 |
| 1986 | 238 | 120 | 74 | 66 | 125 | 112 | 167 | 169 | 147 | 144 | 99 | 80 | 129 |
| 1987 | 112 | 60 | 99 | 123 | 108 | 111 | 89 | 104 | 120 | 138 | 115 | 148 | 111 |
| 1988 | 63 | 85 | 94 | 69 | 116 | 152 | 160 | 204 | 192 | 220 | 174 | 181 | 143 |
| 1989 | 223 | 139 | 88 | 79 | 109 | 190 | 152 | 101 | 130 | 236 | 128 | 95 | 139 |
| 1990 | 107 | 85 | 160 | 108 | 147 | 99 | 132 | 250 | 126 | 142 | 149 | 77 | 132 |
| 1991 | 97 | 146 | 72 | 99 | 79 | 76 | 135 | 248 | 180 | 141 | 110 | 87 | 122 |
| 1992 | 121 | 106 | 87 | 82 | 61 | 107 | 175 | 231 | 154 | 145 | 129 | 148 | 129 |
| 1993 | 86 | 70 | 68 | 74 | 122 | 178 | 92 | 78 | 83 | 85 | 124 | 90 | 96 |
| 1994 | 80 | 75 | 46 | 75 | 101 | 150 | 181 | 210 | 180 | 180 | 231 | 110 | 135 |
| 1995 | 93 | 111 | 120 | 187 | 132 | 156 | 238 | 167 | 216 | 187 | 164 | 176 | 163 |
| 1996 | 137 | 133 | 116 | 181 | 143 | 134 | 203 | 184 | 248 | 152 | 152 | 164 | 162 |
| 1997 | 104 | 102 | 73 | 80 | 96 | 118 | 99 | 107 | 137 | 133 | 121 | 106 | 106 |
| 1998 | 89 | 108 | 82 | 78 | 111 | 140 | 354 | 172 | 155 | 263 | 169 | 124 | 154 |
| 1999 | 112 | 60 | 94 | 92 | 155 | 161 | 146 | 143 | 142 | 95 | 215 | 114 | 128 |
| 2000 | 112 | 76 | 48 | 100 | 101 | 141 | 128 | 131 | 178 | 197 | 107 | 129 | 121 |
| 2001 | 87 | 118 | 74 | 74 | 149 | 109 | 97 | 123 | 87 | 114 | 157 | 258 | 121 |
| 2002 | 111 | 80 | 67 | 86 | 91 | 170 | 191 | 121 | 146 | 118 | 107 | 140 | 119 |
| 2003 | 79 | 54 | 64 | 55 | 119 | 145 | 105 | 86 | 171 | 203 | 131 | 158 | 115 |
| 2004 | 96 | 247 | 135 | 81 | 122 | 218 | 177 | 176 | 135 | 192 | 131 | 135 | 153 |
| 2005 | 139 | 90 | 79 | 53 | 103 | 107 | 130 | 108 | 123 | 193 | 77 | 146 | 113 |
| 2006 | 121 | 121 | 70 | 143 | 134 | 130 | 169 | 203 | 107 | 111 | 172 | 119 | 133 |
| 2007 | 123 | 72 | 81 | 71 | 78 | 117 | 165 | 189 | 116 | 148 | 99 | 113 | 115 |
| 2008 | 60 | 51 | 51 | 104 | 108 | 108 | | | | | | | 80 |
| Min. | 50 | 33 | 32 | 46 | 52 | 76 | 67 | 78 | 83 | 82 | 77 | 66 | 96 |
| Mean | 107 | 102 | 89 | 91 | 113 | 139 | 153 | 152 | 147 | 148 | 135 | 125 | 125 |
| Max. | 238 | 256 | 210 | 187 | 190 | 279 | 354 | 250 | 258 | 263 | 238 | 294 | 169 |

Table A.4 Monthly means 1931 to 2008 – M-co Natural Lake Taupo Inflow (m³/s)

| Year | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Mean |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| 1931 | | | | | | | 169 | 153 | 161 | 132 | 127 | 117 | 143 |
| 1932 | 86 | 88 | 68 | 91 | 85 | 146 | 110 | 93 | 105 | 143 | 92 | 79 | 99 |
| 1933 | 93 | 118 | 124 | 105 | 156 | 97 | 130 | 145 | 114 | 83 | 99 | 76 | 112 |
| 1934 | 67 | 150 | 70 | 92 | 97 | 126 | 154 | 136 | 104 | 142 | 131 | 109 | 114 |
| 1935 | 77 | 132 | 102 | 93 | 142 | 216 | 168 | 206 | 139 | 152 | 209 | 126 | 147 |
| 1936 | 199 | 201 | 128 | 126 | 121 | 106 | 157 | 154 | 164 | 136 | 134 | 106 | 144 |
| 1937 | 158 | 92 | 97 | 109 | 185 | 109 | 104 | 86 | 99 | 93 | 87 | 96 | 110 |
| 1938 | 88 | 127 | 60 | 163 | 98 | 125 | 122 | 146 | 130 | 97 | 137 | 122 | 118 |
| 1939 | 118 | 68 | 62 | 67 | 54 | 131 | 109 | 198 | 143 | 105 | 86 | 127 | 106 |
| 1940 | 147 | 195 | 125 | 82 | 96 | 105 | 84 | 90 | 106 | 133 | 144 | 96 | 117 |
| 1941 | 115 | 93 | 146 | 79 | 64 | 131 | 137 | 139 | 137 | 202 | 147 | 125 | 127 |
| 1942 | 122 | 111 | 121 | 126 | 141 | 87 | 205 | 174 | 253 | 182 | 129 | 140 | 150 |
| 1943 | 85 | 125 | 79 | 95 | 101 | 205 | 201 | 153 | 226 | 180 | 130 | 100 | 140 |
| 1944 | 75 | 131 | 111 | 90 | 99 | 107 | 129 | 141 | 131 | 140 | 103 | 130 | 115 |
| 1945 | 172 | 120 | 121 | 103 | 142 | 137 | 158 | 180 | 180 | 168 | 142 | 86 | 143 |
| 1946 | 79 | 64 | 92 | 135 | 108 | 95 | 124 | 240 | 189 | 177 | 155 | 103 | 131 |
| 1947 | 112 | 69 | 63 | 79 | 64 | 209 | 175 | 136 | 146 | 202 | 108 | 118 | 124 |
| 1948 | 106 | 60 | 63 | 93 | 189 | 144 | 183 | 147 | 122 | 179 | 148 | 100 | 128 |
| 1949 | 95 | 94 | 82 | 86 | 168 | 197 | 197 | 159 | 119 | 122 | 117 | 86 | 127 |
| 1950 | 57 | 113 | 47 | 70 | 82 | 102 | 105 | 134 | 119 | 108 | 144 | 91 | 97 |
| 1951 | 98 | 87 | 76 | 83 | 77 | 102 | 183 | 112 | 87 | 151 | 189 | 158 | 117 |
| 1952 | 108 | 113 | 62 | 80 | 108 | 258 | 178 | 133 | 103 | 147 | 237 | 188 | 143 |
| 1953 | 123 | 109 | 73 | 94 | 165 | 199 | 224 | 177 | 149 | 176 | 163 | 111 | 147 |
| 1954 | 92 | 76 | 102 | 78 | 97 | 108 | 115 | 150 | 130 | 81 | 87 | 113 | 103 |
| 1955 | 74 | 94 | 57 | 99 | 180 | 161 | 142 | 162 | 146 | 153 | 121 | 132 | 127 |
| 1956 | 131 | 97 | 59 | 160 | 150 | 279 | 227 | 182 | 143 | 171 | 164 | 157 | 160 |
| 1957 | 111 | 74 | 112 | 73 | 144 | 124 | 130 | 103 | 93 | 148 | 146 | 159 | 118 |
| 1958 | 90 | 244 | 137 | 70 | 129 | 127 | 162 | 165 | 112 | 116 | 121 | 294 | 147 |
| 1959 | 161 | 120 | 121 | 143 | 123 | 126 | 105 | 120 | 91 | 149 | 117 | 85 | 122 |
| 1960 | 71 | 140 | 79 | 53 | 92 | 153 | 160 | 144 | 157 | 116 | 100 | 70 | 111 |
| 1961 | 93 | 73 | 65 | 88 | 65 | 100 | 162 | 113 | 140 | 115 | 79 | 89 | 99 |
| 1962 | 99 | 72 | 187 | 119 | 164 | 203 | 160 | 182 | 186 | 245 | 202 | 200 | 169 |
| 1963 | 121 | 108 | 68 | 74 | 90 | 155 | 172 | 125 | 196 | 86 | 91 | 77 | 114 |
| 1964 | 108 | 81 | 155 | 56 | 76 | 86 | 236 | 189 | 229 | 195 | 130 | 179 | 144 |
| 1965 | 136 | 168 | 118 | 94 | 94 | 143 | 123 | 180 | 103 | 92 | 176 | 140 | 130 |
| 1966 | 141 | 124 | 99 | 116 | 135 | 135 | 214 | 145 | 153 | 107 | 136 | 138 | 137 |
| 1967 | 133 | 136 | 105 | 66 | 88 | 98 | 94 | 193 | 129 | 88 | 164 | 155 | 121 |
| 1968 | 90 | 67 | 57 | 62 | 121 | 168 | 132 | 132 | 121 | 140 | 121 | 132 | 112 |
| 1969 | 114 | 150 | 69 | 76 | 106 | 77 | 84 | 106 | 168 | 80 | 88 | 132 | 104 |

| Year | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Mean |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| 1970 | 97 | 87 | 76 | 82 | 143 | 198 | 151 | 186 | 255 | 198 | 147 | 112 | 145 |
| 1971 | 123 | 127 | 69 | 62 | 102 | 193 | 105 | 159 | 214 | 236 | 168 | 156 | 143 |
| 1972 | 77 | 70 | 203 | 74 | 141 | 98 | 179 | 148 | 130 | 131 | 109 | 81 | 121 |
| 1973 | 95 | 49 | 69 | 59 | 97 | 118 | 70 | 129 | 182 | 98 | 125 | 101 | 100 |
| 1974 | 51 | 62 | 41 | 88 | 95 | 136 | 226 | 172 | 133 | 164 | 112 | 130 | 118 |
| 1975 | 106 | 58 | 76 | 75 | 134 | 176 | 147 | 191 | 168 | 180 | 122 | 94 | 128 |
| 1976 | 176 | 134 | 87 | 93 | 119 | 131 | 198 | 187 | 174 | 149 | 110 | 118 | 140 |
| 1977 | 93 | 77 | 66 | 62 | 123 | 203 | 198 | 153 | 154 | 131 | 108 | 97 | 122 |
| 1978 | 68 | 53 | 44 | 88 | 76 | 78 | 170 | 116 | 126 | 110 | 152 | 117 | 100 |
| 1979 | 59 | 104 | 162 | 118 | 167 | 97 | 118 | 174 | 146 | 201 | 154 | 124 | 136 |
| 1980 | 172 | 93 | 110 | 140 | 105 | 123 | 148 | 143 | 170 | 126 | 142 | 166 | 137 |
| 1981 | 107 | 85 | 94 | 79 | 98 | 187 | 174 | 155 | 143 | 141 | 158 | 147 | 131 |
| 1982 | 78 | 110 | 101 | 76 | 114 | 112 | 96 | 92 | 116 | 105 | 88 | 115 | 100 |
| 1983 | 76 | 60 | 50 | 91 | 102 | 112 | 113 | 105 | 140 | 209 | 162 | 117 | 112 |
| 1984 | 86 | 110 | 135 | 71 | 88 | 94 | 148 | 131 | 106 | 102 | 95 | 146 | 109 |
| 1985 | 99 | 68 | 71 | 81 | 63 | 155 | 115 | 113 | 131 | 94 | 116 | 140 | 104 |
| 1986 | 240 | 116 | 78 | 67 | 123 | 111 | 164 | 168 | 144 | 146 | 98 | 81 | 128 |
| 1987 | 113 | 56 | 98 | 124 | 106 | 108 | 90 | 104 | 120 | 138 | 114 | 144 | 110 |
| 1988 | 62 | 85 | 94 | 66 | 115 | 152 | 157 | 206 | 191 | 218 | 185 | 176 | 143 |
| 1989 | 221 | 134 | 90 | 76 | 109 | 190 | 151 | 101 | 130 | 235 | 128 | 95 | 138 |
| 1990 | 106 | 89 | 155 | 106 | 147 | 98 | 133 | 250 | 126 | 142 | 148 | 78 | 132 |
| 1991 | 96 | 148 | 72 | 96 | 81 | 77 | 136 | 246 | 179 | 140 | 112 | 86 | 122 |
| 1992 | 124 | 106 | 86 | 83 | 62 | 106 | 177 | 226 | 155 | 146 | 126 | 149 | 129 |
| 1993 | 87 | 70 | 66 | 75 | 130 | 179 | 90 | 80 | 83 | 83 | 122 | 89 | 96 |
| 1994 | 79 | 75 | 46 | 77 | 99 | 148 | 178 | 213 | 179 | 180 | 234 | 108 | 135 |
| 1995 | 95 | 109 | 120 | 189 | 129 | 158 | 237 | 165 | 217 | 189 | 161 | 180 | 163 |
| 1996 | 134 | 135 | 112 | 183 | 141 | 131 | 207 | 181 | 246 | 154 | 153 | 164 | 162 |
| 1997 | 103 | 103 | 76 | 80 | 97 | 113 | 102 | 107 | 138 | 131 | 119 | 107 | 106 |
| 1998 | 82 | 98 | 65 | 74 | 105 | 134 | 374 | 163 | 154 | 258 | 172 | 127 | 151 |
| 1999 | 110 | 59 | 92 | 95 | 152 | 162 | 125 | 137 | 135 | 81 | 196 | 127 | 123 |
| 2000 | 102 | 79 | 31 | 76 | 85 | 141 | 120 | 133 | 174 | 203 | 102 | 130 | 115 |
| 2001 | 86 | 113 | 58 | 56 | 134 | 112 | 86 | 118 | 88 | 100 | 164 | 258 | 115 |
| 2002 | 119 | 80 | 63 | 66 | 82 | 176 | 195 | 128 | 157 | 129 | 111 | 144 | 121 |
| 2003 | 79 | 40 | 51 | 33 | 94 | 154 | 104 | 76 | 169 | 204 | 136 | 161 | 109 |
| 2004 | 104 | 253 | 141 | 86 | 125 | 222 | 178 | 176 | 136 | 192 | 135 | 138 | 157 |
| 2005 | 143 | 92 | 86 | 63 | 106 | 112 | 133 | 111 | 124 | 193 | 87 | 152 | 117 |
| 2006 | 128 | 123 | 73 | 144 | 134 | 129 | 170 | 203 | 110 | 114 | 173 | 122 | 135 |
| 2007 | 134 | 74 | 91 | 75 | 82 | 120 | 166 | 190 | 113 | 150 | 103 | 113 | 118 |
| 2008 | 66 | 53 | 57 | 111 | 117 | 115 | | | | | | | 87 |
| Min. | 51 | 40 | 31 | 33 | 54 | 77 | 70 | 76 | 83 | 80 | 79 | 70 | 96 |
| Mean | 108 | 103 | 90 | 91 | 113 | 139 | 153 | 151 | 147 | 147 | 134 | 126 | 126 |
| Max. | 240 | 253 | 203 | 189 | 189 | 279 | 374 | 250 | 255 | 258 | 237 | 294 | 169 |

Table A.5 Monthly means 1931 to 2008 – SPECTRA Lake Ohau Inflow (m³/s)

| Year | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Mean |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| 1931 | | | | | | | 37 | 30 | 32 | 100 | 83 | 102 | 64 |
| 1932 | 97 | 92 | 51 | 52 | 45 | 36 | 19 | 17 | 31 | 72 | 108 | 90 | 59 |
| 1933 | 94 | 164 | 112 | 146 | 93 | 43 | 80 | 72 | 40 | 78 | 77 | 116 | 92 |
| 1934 | 106 | 79 | 61 | 112 | 103 | 57 | 41 | 58 | 75 | 137 | 84 | 83 | 83 |
| 1935 | 139 | 95 | 84 | 70 | 68 | 54 | 27 | 37 | 23 | 61 | 72 | 103 | 69 |
| 1936 | 69 | 84 | 61 | 93 | 51 | 28 | 38 | 59 | 59 | 153 | 151 | 114 | 80 |
| 1937 | 109 | 94 | 70 | 113 | 68 | 45 | 28 | 26 | 35 | 42 | 65 | 92 | 65 |
| 1938 | 140 | 90 | 99 | 132 | 56 | 55 | 34 | 53 | 69 | 83 | 100 | 120 | 86 |
| 1939 | 70 | 74 | 59 | 44 | 58 | 68 | 39 | 24 | 55 | 62 | 99 | 114 | 64 |
| 1940 | 128 | 155 | 139 | 77 | 90 | 58 | 28 | 23 | 33 | 104 | 99 | 93 | 85 |
| 1941 | 91 | 91 | 72 | 70 | 48 | 70 | 49 | 25 | 25 | 32 | 113 | 107 | 66 |
| 1942 | 107 | 74 | 91 | 168 | 129 | 45 | 64 | 35 | 59 | 186 | 131 | 131 | 102 |
| 1943 | 99 | 115 | 92 | 80 | 50 | 36 | 35 | 25 | 55 | 88 | 105 | 112 | 74 |
| 1944 | 100 | 142 | 115 | 123 | 67 | 42 | 51 | 40 | 41 | 87 | 131 | 126 | 88 |
| 1945 | 216 | 178 | 139 | 108 | 53 | 32 | 29 | 56 | 105 | 78 | 205 | 141 | 111 |
| 1946 | 149 | 151 | 85 | 52 | 43 | 31 | 32 | 63 | 102 | 136 | 73 | 139 | 88 |
| 1947 | 95 | 85 | 55 | 32 | 33 | 37 | 36 | 35 | 51 | 121 | 99 | 124 | 67 |
| 1948 | 93 | 65 | 68 | 51 | 35 | 52 | 49 | 31 | 52 | 140 | 166 | 136 | 78 |
| 1949 | 101 | 177 | 112 | 101 | 79 | 49 | 62 | 52 | 37 | 136 | 91 | 95 | 91 |
| 1950 | 164 | 72 | 56 | 44 | 82 | 53 | 58 | 52 | 72 | 65 | 74 | 138 | 78 |
| 1951 | 90 | 64 | 51 | 91 | 46 | 30 | 80 | 42 | 65 | 99 | 149 | 136 | 79 |
| 1952 | 134 | 166 | 75 | 55 | 77 | 49 | 32 | 20 | 45 | 99 | 85 | 106 | 78 |
| 1953 | 71 | 71 | 68 | 116 | 99 | 59 | 40 | 48 | 65 | 42 | 156 | 149 | 82 |
| 1954 | 110 | 112 | 97 | 57 | 38 | 58 | 42 | 36 | 32 | 63 | 111 | 101 | 71 |
| 1955 | 84 | 178 | 86 | 54 | 118 | 76 | 34 | 47 | 68 | 69 | 72 | 104 | 82 |
| 1956 | 77 | 70 | 41 | 107 | 86 | 89 | 56 | 46 | 43 | 74 | 131 | 127 | 79 |
| 1957 | 99 | 81 | 69 | 103 | 113 | 44 | 47 | 29 | 26 | 101 | 178 | 281 | 98 |
| 1958 | 184 | 240 | 147 | 112 | 143 | 78 | 33 | 35 | 31 | 106 | 115 | 174 | 116 |
| 1959 | 90 | 68 | 61 | 56 | 36 | 58 | 28 | 22 | 68 | 59 | 135 | 127 | 67 |
| 1960 | 112 | 103 | 79 | 44 | 64 | 51 | 46 | 61 | 85 | 72 | 76 | 67 | 72 |
| 1961 | 52 | 74 | 86 | 94 | 42 | 50 | 56 | 53 | 45 | 110 | 118 | 93 | 73 |
| 1962 | 98 | 59 | 51 | 31 | 70 | 52 | 74 | 54 | 57 | 96 | 119 | 80 | 70 |
| 1963 | 69 | 88 | 82 | 48 | 65 | 56 | 29 | 37 | 76 | 65 | 74 | 63 | 62 |
| 1964 | 105 | 61 | 83 | 47 | 98 | 35 | 42 | 39 | 45 | 66 | 84 | 117 | 69 |
| 1965 | 167 | 83 | 88 | 47 | 43 | 46 | 28 | 27 | 44 | 68 | 138 | 157 | 78 |
| 1966 | 153 | 119 | 74 | 89 | 35 | 40 | 29 | 31 | 36 | 53 | 92 | 111 | 71 |
| 1967 | 143 | 114 | 164 | 156 | 89 | 41 | 60 | 104 | 41 | 70 | 146 | 190 | 110 |
| 1968 | 112 | 111 | 125 | 62 | 125 | 52 | 33 | 64 | 75 | 130 | 121 | 119 | 94 |
| 1969 | 112 | 72 | 77 | 81 | 54 | 36 | 29 | 34 | 178 | 60 | 79 | 147 | 80 |

| Year | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Mean |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| 1970 | 110 | 78 | 81 | 71 | 32 | 39 | 45 | 109 | 246 | 104 | 135 | 128 | 98 |
| 1971 | 70 | 52 | 48 | 42 | 52 | 66 | 31 | 28 | 67 | 119 | 98 | 115 | 66 |
| 1972 | 90 | 51 | 93 | 72 | 75 | 35 | 39 | 32 | 107 | 93 | 169 | 106 | 80 |
| 1973 | 82 | 55 | 51 | 92 | 88 | 62 | 29 | 33 | 41 | 118 | 158 | 72 | 73 |
| 1974 | 55 | 98 | 90 | 92 | 40 | 37 | 51 | 33 | 34 | 78 | 118 | 106 | 69 |
| 1975 | 80 | 88 | 122 | 169 | 111 | 60 | 52 | 81 | 67 | 98 | 113 | 102 | 95 |
| 1976 | 97 | 67 | 66 | 39 | 71 | 82 | 33 | 29 | 27 | 41 | 52 | 142 | 62 |
| 1977 | 121 | 100 | 74 | 60 | 56 | 48 | 40 | 23 | 31 | 61 | 83 | 87 | 65 |
| 1978 | 99 | 60 | 77 | 96 | 120 | 62 | 43 | 97 | 92 | 120 | 107 | 94 | 89 |
| 1979 | 97 | 98 | 144 | 115 | 135 | 54 | 39 | 37 | 77 | 111 | 141 | 221 | 106 |
| 1980 | 163 | 97 | 80 | 94 | 77 | 63 | 36 | 60 | 80 | 93 | 103 | 117 | 88 |
| 1981 | 76 | 90 | 142 | 79 | 72 | 69 | 40 | 28 | 36 | 100 | 75 | 116 | 77 |
| 1982 | 135 | 98 | 108 | 41 | 89 | 50 | 26 | 39 | 49 | 41 | 182 | 140 | 83 |
| 1983 | 177 | 65 | 93 | 86 | 113 | 48 | 55 | 54 | 84 | 161 | 154 | 122 | 101 |
| 1984 | 128 | 86 | 91 | 54 | 44 | 36 | 62 | 63 | 44 | 111 | 140 | 257 | 93 |
| 1985 | 164 | 59 | 44 | 56 | 52 | 51 | 48 | 62 | 53 | 48 | 106 | 130 | 73 |
| 1986 | 105 | 93 | 112 | 86 | 56 | 86 | 40 | 43 | 44 | 85 | 77 | 94 | 77 |
| 1987 | 130 | 130 | 132 | 103 | 85 | 103 | 33 | 37 | 53 | 121 | 96 | 90 | 93 |
| 1988 | 76 | 83 | 68 | 48 | 50 | 62 | 67 | 67 | 105 | 179 | 143 | 136 | 90 |
| 1989 | 94 | 80 | 115 | 61 | 42 | 71 | 44 | 35 | 27 | 43 | 86 | 172 | 73 |
| 1990 | 115 | 66 | 86 | 62 | 129 | 59 | 60 | 60 | 28 | 84 | 81 | 174 | 84 |
| 1991 | 115 | 137 | 52 | 89 | 36 | 36 | 23 | 106 | 94 | 79 | 67 | 95 | 77 |
| 1992 | 96 | 86 | 59 | 44 | 33 | 16 | 37 | 66 | 29 | 91 | 115 | 90 | 63 |
| 1993 | 121 | 78 | 61 | 58 | 73 | 123 | 50 | 37 | 40 | 111 | 58 | 87 | 75 |
| 1994 | 268 | 77 | 96 | 63 | 60 | 58 | 50 | 54 | 55 | 48 | 208 | 130 | 97 |
| 1995 | 125 | 81 | 133 | 117 | 64 | 45 | 35 | 53 | 140 | 127 | 113 | 278 | 110 |
| 1996 | 115 | 109 | 80 | 137 | 79 | 53 | 28 | 28 | 54 | 152 | 86 | 96 | 85 |
| 1997 | 78 | 93 | 65 | 105 | 53 | 33 | 32 | 69 | 37 | 71 | 123 | 140 | 75 |
| 1998 | 102 | 129 | 133 | 102 | 59 | 67 | 91 | 64 | 73 | 154 | 85 | 82 | 95 |
| 1999 | 71 | 66 | 84 | 79 | 83 | 55 | 47 | 30 | 44 | 106 | 197 | 64 | 77 |
| 2000 | 89 | 69 | 46 | 72 | 74 | 130 | 76 | 53 | 93 | 118 | 69 | 143 | 86 |
| 2001 | 101 | 63 | 54 | 46 | 43 | 60 | 36 | 42 | 38 | 67 | 94 | 164 | 67 |
| 2002 | 138 | 51 | 62 | 54 | 41 | 85 | 47 | 71 | 109 | 66 | 93 | 139 | 80 |
| 2003 | 98 | 88 | 55 | 43 | 84 | 85 | 52 | 30 | 60 | 68 | 96 | 109 | 72 |
| 2004 | 142 | 123 | 112 | 51 | 88 | 75 | 45 | 50 | 53 | 64 | 108 | 80 | 82 |
| 2005 | 114 | 80 | 80 | 44 | 50 | 41 | 41 | 54 | 84 | 54 | 66 | 78 | 66 |
| 2006 | 89 | 52 | 53 | 82 | 61 | 58 | 41 | 40 | 71 | 100 | 141 | 109 | 75 |
| 2007 | 91 | 63 | 58 | 40 | 59 | 58 | 46 | 45 | 48 | 85 | 68 | 102 | 64 |
| 2008 | 75 | 68 | 57 | 40 | 38 | 42 | | | | | | | 53 |
| Min. | 52 | 51 | 41 | 31 | 32 | 16 | 19 | 17 | 23 | 32 | 52 | 63 | 59 |
| Mean | 111 | 94 | 84 | 78 | 70 | 55 | 43 | 46 | 61 | 91 | 111 | 122 | 81 |
| Max. | 268 | 240 | 164 | 169 | 143 | 130 | 91 | 109 | 246 | 186 | 208 | 281 | 116 |

Table A.6 Monthly means 1931 to 2008 – M-co Lake Ohau Inflow (m³/s)

| Year | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Mean |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| 1931 | | | | | | | 35 | 28 | 32 | 96 | 81 | 100 | 62 |
| 1932 | 96 | 89 | 50 | 51 | 43 | 33 | 18 | 18 | 28 | 70 | 106 | 88 | 57 |
| 1933 | 89 | 164 | 110 | 144 | 91 | 41 | 77 | 70 | 38 | 76 | 76 | 113 | 90 |
| 1934 | 104 | 77 | 59 | 111 | 101 | 54 | 39 | 56 | 71 | 136 | 82 | 81 | 81 |
| 1935 | 135 | 94 | 83 | 68 | 66 | 51 | 25 | 35 | 22 | 58 | 71 | 101 | 67 |
| 1936 | 68 | 80 | 61 | 90 | 50 | 26 | 36 | 57 | 58 | 150 | 148 | 112 | 78 |
| 1937 | 107 | 92 | 70 | 110 | 67 | 43 | 25 | 25 | 33 | 40 | 63 | 91 | 64 |
| 1938 | 138 | 88 | 97 | 130 | 54 | 53 | 32 | 51 | 68 | 81 | 98 | 117 | 84 |
| 1939 | 67 | 72 | 57 | 41 | 56 | 65 | 37 | 22 | 53 | 61 | 99 | 109 | 62 |
| 1940 | 125 | 159 | 132 | 75 | 88 | 56 | 27 | 21 | 31 | 101 | 99 | 91 | 83 |
| 1941 | 87 | 92 | 70 | 67 | 46 | 69 | 47 | 23 | 23 | 31 | 111 | 105 | 64 |
| 1942 | 105 | 72 | 88 | 167 | 126 | 45 | 60 | 33 | 56 | 184 | 132 | 127 | 100 |
| 1943 | 96 | 115 | 90 | 78 | 48 | 34 | 33 | 23 | 53 | 86 | 103 | 110 | 72 |
| 1944 | 98 | 138 | 114 | 122 | 65 | 40 | 49 | 38 | 39 | 84 | 129 | 124 | 86 |
| 1945 | 214 | 179 | 136 | 105 | 51 | 30 | 28 | 54 | 102 | 77 | 203 | 139 | 109 |
| 1946 | 146 | 152 | 82 | 50 | 41 | 29 | 31 | 61 | 100 | 134 | 72 | 136 | 86 |
| 1947 | 93 | 83 | 53 | 30 | 31 | 35 | 34 | 33 | 48 | 120 | 98 | 122 | 65 |
| 1948 | 91 | 62 | 67 | 49 | 32 | 51 | 48 | 29 | 48 | 130 | 173 | 134 | 76 |
| 1949 | 99 | 176 | 110 | 99 | 76 | 48 | 60 | 50 | 38 | 131 | 89 | 93 | 89 |
| 1950 | 162 | 70 | 53 | 42 | 78 | 52 | 56 | 51 | 70 | 63 | 74 | 135 | 76 |
| 1951 | 87 | 61 | 49 | 89 | 45 | 28 | 78 | 41 | 63 | 96 | 149 | 132 | 77 |
| 1952 | 135 | 162 | 74 | 54 | 73 | 48 | 30 | 18 | 43 | 97 | 83 | 105 | 77 |
| 1953 | 69 | 69 | 67 | 111 | 99 | 57 | 38 | 46 | 63 | 40 | 153 | 147 | 80 |
| 1954 | 108 | 112 | 95 | 55 | 36 | 57 | 40 | 33 | 30 | 61 | 110 | 99 | 69 |
| 1955 | 87 | 170 | 84 | 53 | 116 | 73 | 32 | 44 | 66 | 67 | 70 | 102 | 80 |
| 1956 | 73 | 70 | 39 | 105 | 83 | 87 | 54 | 44 | 41 | 72 | 129 | 125 | 77 |
| 1957 | 97 | 80 | 67 | 101 | 110 | 43 | 45 | 27 | 26 | 96 | 178 | 276 | 96 |
| 1958 | 184 | 236 | 145 | 111 | 142 | 76 | 31 | 33 | 29 | 102 | 115 | 171 | 114 |
| 1959 | 90 | 66 | 59 | 54 | 35 | 56 | 26 | 20 | 66 | 59 | 131 | 125 | 65 |
| 1960 | 111 | 99 | 77 | 42 | 62 | 50 | 47 | 57 | 83 | 69 | 75 | 65 | 70 |
| 1961 | 52 | 71 | 84 | 92 | 40 | 48 | 54 | 51 | 43 | 107 | 116 | 92 | 71 |
| 1962 | 96 | 56 | 49 | 28 | 69 | 50 | 71 | 53 | 55 | 92 | 119 | 78 | 68 |
| 1963 | 67 | 87 | 80 | 47 | 63 | 53 | 27 | 35 | 74 | 63 | 72 | 62 | 61 |
| 1964 | 103 | 59 | 81 | 46 | 96 | 33 | 40 | 37 | 43 | 64 | 83 | 115 | 67 |
| 1965 | 163 | 82 | 86 | 46 | 41 | 44 | 27 | 25 | 42 | 66 | 138 | 155 | 76 |
| 1966 | 151 | 116 | 73 | 86 | 35 | 36 | 27 | 29 | 34 | 52 | 90 | 109 | 70 |
| 1967 | 137 | 117 | 163 | 155 | 86 | 38 | 60 | 102 | 39 | 68 | 141 | 189 | 108 |
| 1968 | 112 | 109 | 122 | 61 | 122 | 51 | 31 | 62 | 75 | 125 | 120 | 118 | 92 |
| 1969 | 110 | 72 | 74 | 80 | 51 | 34 | 27 | 32 | 176 | 58 | 78 | 144 | 78 |

| Year | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Mean |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| 1970 | 109 | 77 | 77 | 71 | 31 | 37 | 42 | 105 | 247 | 103 | 134 | 126 | 96 |
| 1971 | 68 | 50 | 46 | 40 | 50 | 65 | 29 | 26 | 65 | 118 | 96 | 113 | 64 |
| 1972 | 88 | 49 | 92 | 69 | 73 | 34 | 37 | 29 | 105 | 94 | 166 | 104 | 78 |
| 1973 | 80 | 53 | 48 | 89 | 87 | 60 | 27 | 31 | 38 | 116 | 156 | 70 | 71 |
| 1974 | 53 | 96 | 89 | 89 | 38 | 35 | 50 | 31 | 33 | 76 | 116 | 104 | 67 |
| 1975 | 78 | 86 | 120 | 167 | 109 | 58 | 51 | 79 | 65 | 95 | 112 | 100 | 93 |
| 1976 | 95 | 65 | 64 | 38 | 71 | 77 | 32 | 27 | 25 | 39 | 50 | 140 | 60 |
| 1977 | 119 | 98 | 73 | 58 | 54 | 46 | 38 | 21 | 29 | 59 | 81 | 85 | 63 |
| 1978 | 97 | 59 | 71 | 99 | 120 | 58 | 41 | 95 | 90 | 119 | 104 | 92 | 87 |
| 1979 | 94 | 97 | 142 | 112 | 133 | 79 | 39 | 41 | 73 | 98 | 147 | 224 | 107 |
| 1980 | 162 | 97 | 87 | 95 | 84 | 69 | 44 | 65 | 89 | 93 | 113 | 121 | 93 |
| 1981 | 86 | 100 | 147 | 88 | 72 | 80 | 46 | 34 | 45 | 114 | 89 | 128 | 86 |
| 1982 | 143 | 111 | 113 | 52 | 96 | 57 | 34 | 46 | 59 | 50 | 192 | 153 | 92 |
| 1983 | 185 | 75 | 104 | 96 | 119 | 56 | 64 | 63 | 91 | 167 | 167 | 137 | 111 |
| 1984 | 146 | 99 | 102 | 65 | 51 | 44 | 68 | 71 | 52 | 117 | 158 | 270 | 104 |
| 1985 | 176 | 70 | 55 | 66 | 59 | 56 | 53 | 62 | 57 | 52 | 112 | 139 | 80 |
| 1986 | 111 | 97 | 116 | 91 | 59 | 89 | 46 | 47 | 48 | 89 | 89 | 106 | 82 |
| 1987 | 138 | 136 | 133 | 114 | 89 | 108 | 39 | 42 | 56 | 122 | 103 | 94 | 97 |
| 1988 | 82 | 89 | 76 | 57 | 54 | 69 | 71 | 70 | 106 | 177 | 147 | 138 | 95 |
| 1989 | 99 | 89 | 116 | 69 | 47 | 75 | 48 | 40 | 33 | 49 | 91 | 179 | 78 |
| 1990 | 119 | 70 | 90 | 68 | 126 | 63 | 63 | 64 | 35 | 85 | 92 | 185 | 89 |
| 1991 | 120 | 135 | 58 | 94 | 41 | 43 | 29 | 104 | 97 | 80 | 76 | 103 | 81 |
| 1992 | 106 | 93 | 68 | 51 | 38 | 30 | 51 | 74 | 28 | 86 | 114 | 86 | 69 |
| 1993 | 108 | 73 | 57 | 54 | 64 | 117 | 46 | 35 | 36 | 104 | 55 | 84 | 69 |
| 1994 | 272 | 71 | 90 | 59 | 56 | 53 | 49 | 50 | 52 | 44 | 196 | 126 | 93 |
| 1995 | 117 | 74 | 117 | 113 | 58 | 38 | 30 | 47 | 128 | 116 | 104 | 274 | 102 |
| 1996 | 118 | 101 | 78 | 127 | 69 | 47 | 27 | 26 | 48 | 146 | 83 | 92 | 80 |
| 1997 | 74 | 92 | 61 | 104 | 56 | 29 | 30 | 61 | 35 | 69 | 114 | 134 | 71 |
| 1998 | 101 | 134 | 139 | 101 | 59 | 66 | 88 | 64 | 71 | 150 | 87 | 81 | 95 |
| 1999 | 69 | 63 | 73 | 87 | 88 | 59 | 49 | 29 | 45 | 107 | 214 | 69 | 79 |
| 2000 | 91 | 76 | 47 | 78 | 76 | 136 | 81 | 55 | 96 | 124 | 74 | 149 | 90 |
| 2001 | 113 | 67 | 57 | 50 | 44 | 65 | 38 | 43 | 38 | 72 | 102 | 175 | 72 |
| 2002 | 147 | 54 | 68 | 58 | 43 | 92 | 50 | 76 | 115 | 70 | 98 | 159 | 86 |
| 2003 | 107 | 96 | 59 | 45 | 92 | 90 | 55 | 30 | 63 | 73 | 102 | 120 | 78 |
| 2004 | 152 | 134 | 121 | 53 | 97 | 80 | 48 | 53 | 54 | 67 | 120 | 84 | 89 |
| 2005 | 127 | 86 | 86 | 46 | 53 | 41 | 42 | 56 | 92 | 55 | 70 | 84 | 70 |
| 2006 | 100 | 56 | 57 | 89 | 65 | 63 | 42 | 41 | 74 | 111 | 154 | 122 | 81 |
| 2007 | 99 | 69 | 63 | 42 | 61 | 62 | 48 | 47 | 51 | 94 | 73 | 115 | 69 |
| 2008 | 82 | 73 | 63 | 44 | 43 | 46 | | | | | | | 59 |
| Min. | 52 | 49 | 39 | 28 | 31 | 26 | 18 | 18 | 22 | 31 | 50 | 62 | 57 |
| Mean | 111 | 94 | 84 | 78 | 69 | 56 | 43 | 46 | 61 | 90 | 112 | 123 | 81 |
| Max. | 272 | 236 | 163 | 167 | 142 | 136 | 88 | 105 | 247 | 184 | 214 | 276 | 114 |

Table A.7 Monthly means 1931 to 2008 – SPECTRA Lake Pukaki Inflow (m³/s)

| Year | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Mean |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| 1931 | | | | | | | 49 | 39 | 37 | 117 | 84 | 165 | 82 |
| 1932 | 204 | 205 | 126 | 95 | 63 | 48 | 25 | 21 | 37 | 83 | 158 | 169 | 103 |
| 1933 | 211 | 402 | 212 | 231 | 107 | 51 | 85 | 73 | 45 | 85 | 105 | 225 | 151 |
| 1934 | 225 | 214 | 141 | 226 | 150 | 73 | 56 | 73 | 79 | 157 | 116 | 177 | 140 |
| 1935 | 348 | 277 | 215 | 137 | 100 | 80 | 48 | 64 | 50 | 70 | 94 | 213 | 141 |
| 1936 | 179 | 204 | 136 | 164 | 76 | 45 | 61 | 68 | 71 | 197 | 203 | 178 | 132 |
| 1937 | 195 | 189 | 132 | 194 | 79 | 50 | 39 | 36 | 41 | 50 | 88 | 161 | 104 |
| 1938 | 341 | 270 | 249 | 301 | 70 | 58 | 39 | 55 | 64 | 78 | 128 | 170 | 151 |
| 1939 | 120 | 166 | 145 | 88 | 77 | 86 | 40 | 30 | 56 | 60 | 117 | 185 | 97 |
| 1940 | 246 | 270 | 272 | 125 | 107 | 59 | 32 | 30 | 39 | 110 | 112 | 174 | 131 |
| 1941 | 246 | 267 | 172 | 95 | 55 | 84 | 54 | 35 | 36 | 45 | 121 | 166 | 114 |
| 1942 | 210 | 138 | 172 | 346 | 161 | 49 | 74 | 37 | 62 | 231 | 174 | 197 | 155 |
| 1943 | 201 | 238 | 151 | 120 | 50 | 43 | 39 | 28 | 62 | 101 | 135 | 206 | 114 |
| 1944 | 198 | 289 | 187 | 193 | 74 | 45 | 54 | 45 | 47 | 88 | 147 | 155 | 126 |
| 1945 | 386 | 316 | 195 | 165 | 54 | 34 | 33 | 58 | 102 | 76 | 246 | 173 | 152 |
| 1946 | 272 | 331 | 187 | 82 | 50 | 35 | 38 | 70 | 111 | 134 | 87 | 220 | 134 |
| 1947 | 166 | 187 | 150 | 82 | 61 | 57 | 48 | 45 | 56 | 145 | 150 | 288 | 120 |
| 1948 | 232 | 210 | 154 | 84 | 61 | 62 | 62 | 38 | 57 | 142 | 222 | 214 | 128 |
| 1949 | 204 | 382 | 206 | 137 | 114 | 74 | 80 | 76 | 48 | 165 | 132 | 154 | 146 |
| 1950 | 284 | 135 | 123 | 87 | 175 | 82 | 80 | 77 | 81 | 82 | 120 | 240 | 131 |
| 1951 | 198 | 169 | 126 | 128 | 61 | 43 | 90 | 46 | 62 | 114 | 167 | 165 | 114 |
| 1952 | 179 | 210 | 214 | 136 | 97 | 82 | 54 | 47 | 74 | 123 | 120 | 148 | 123 |
| 1953 | 166 | 163 | 162 | 133 | 137 | 52 | 42 | 63 | 91 | 55 | 188 | 250 | 125 |
| 1954 | 225 | 297 | 210 | 78 | 51 | 74 | 57 | 48 | 24 | 71 | 157 | 170 | 121 |
| 1955 | 212 | 406 | 193 | 97 | 180 | 69 | 31 | 66 | 82 | 97 | 115 | 181 | 142 |
| 1956 | 235 | 157 | 111 | 199 | 119 | 110 | 64 | 59 | 51 | 75 | 141 | 190 | 126 |
| 1957 | 184 | 200 | 166 | 152 | 136 | 60 | 41 | 55 | 37 | 102 | 169 | 350 | 138 |
| 1958 | 307 | 472 | 274 | 137 | 140 | 84 | 47 | 52 | 41 | 117 | 135 | 246 | 169 |
| 1959 | 191 | 170 | 138 | 91 | 55 | 60 | 41 | 35 | 81 | 63 | 156 | 187 | 105 |
| 1960 | 248 | 215 | 185 | 78 | 81 | 76 | 58 | 67 | 104 | 100 | 115 | 122 | 121 |
| 1961 | 140 | 186 | 185 | 172 | 59 | 67 | 68 | 64 | 58 | 126 | 163 | 163 | 121 |
| 1962 | 270 | 147 | 136 | 61 | 132 | 63 | 89 | 70 | 77 | 122 | 130 | 135 | 120 |
| 1963 | 165 | 232 | 147 | 75 | 100 | 79 | 31 | 48 | 83 | 73 | 90 | 108 | 102 |
| 1964 | 160 | 134 | 162 | 85 | 142 | 64 | 46 | 47 | 63 | 72 | 99 | 177 | 104 |
| 1965 | 250 | 162 | 184 | 76 | 61 | 56 | 40 | 43 | 57 | 79 | 151 | 240 | 117 |
| 1966 | 294 | 300 | 167 | 147 | 53 | 49 | 48 | 51 | 52 | 69 | 121 | 187 | 127 |
| 1967 | 271 | 205 | 370 | 247 | 104 | 56 | 83 | 115 | 60 | 102 | 172 | 250 | 170 |
| 1968 | 195 | 236 | 279 | 127 | 159 | 55 | 50 | 76 | 77 | 138 | 142 | 147 | 140 |
| 1969 | 179 | 160 | 166 | 127 | 71 | 52 | 44 | 45 | 186 | 73 | 109 | 256 | 122 |

| Year | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Mean |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| 1970 | 266 | 200 | 204 | 167 | 54 | 57 | 55 | 107 | 237 | 114 | 177 | 211 | 154 |
| 1971 | 175 | 165 | 127 | 69 | 81 | 98 | 46 | 29 | 81 | 128 | 110 | 163 | 106 |
| 1972 | 191 | 138 | 230 | 123 | 89 | 43 | 54 | 52 | 113 | 120 | 218 | 149 | 127 |
| 1973 | 176 | 193 | 151 | 156 | 127 | 88 | 45 | 48 | 57 | 143 | 224 | 155 | 130 |
| 1974 | 150 | 282 | 186 | 227 | 59 | 59 | 53 | 40 | 47 | 90 | 148 | 196 | 127 |
| 1975 | 198 | 213 | 256 | 239 | 116 | 49 | 26 | 75 | 64 | 101 | 126 | 147 | 134 |
| 1976 | 167 | 111 | 145 | 65 | 69 | 81 | 26 | 14 | 15 | 30 | 44 | 205 | 81 |
| 1977 | 173 | 192 | 151 | 102 | 45 | 39 | 55 | 115 | 71 | 64 | 105 | 121 | 102 |
| 1978 | 254 | 218 | 235 | 235 | 261 | 154 | 159 | 180 | 179 | 154 | 178 | 196 | 200 |
| 1979 | 271 | 278 | 377 | 209 | 182 | 174 | 142 | 166 | 154 | 171 | 218 | 472 | 235 |
| 1980 | 352 | 234 | 211 | 188 | 160 | 139 | 133 | 179 | 179 | 175 | 193 | 224 | 197 |
| 1981 | 234 | 296 | 347 | 200 | 166 | 163 | 152 | 128 | 120 | 182 | 186 | 285 | 205 |
| 1982 | 333 | 322 | 331 | 128 | 166 | 159 | 134 | 105 | 110 | 166 | 276 | 252 | 206 |
| 1983 | 361 | 193 | 265 | 240 | 242 | 172 | 172 | 161 | 182 | 258 | 205 | 258 | 226 |
| 1984 | 289 | 278 | 269 | 172 | 135 | 94 | 174 | 126 | 109 | 186 | 297 | 457 | 216 |
| 1985 | 350 | 225 | 196 | 191 | 141 | 159 | 150 | 152 | 135 | 104 | 176 | 299 | 190 |
| 1986 | 266 | 264 | 238 | 211 | 148 | 208 | 155 | 159 | 111 | 118 | 124 | 224 | 185 |
| 1987 | 302 | 341 | 277 | 241 | 200 | 179 | 144 | 148 | 132 | 184 | 214 | 248 | 217 |
| 1988 | 296 | 270 | 181 | 169 | 141 | 155 | 179 | 187 | 141 | 218 | 241 | 300 | 206 |
| 1989 | 297 | 312 | 315 | 222 | 190 | 201 | 158 | 130 | 108 | 114 | 198 | 356 | 216 |
| 1990 | 356 | 297 | 272 | 203 | 194 | 179 | 181 | 145 | 105 | 169 | 211 | 361 | 223 |
| 1991 | 394 | 395 | 200 | 256 | 74 | 137 | 136 | 197 | 185 | 178 | 131 | 219 | 207 |
| 1992 | 288 | 292 | 202 | 147 | 99 | 60 | 67 | 113 | 74 | 132 | 204 | 249 | 160 |
| 1993 | 358 | 264 | 230 | 198 | 147 | 167 | 148 | 143 | 99 | 190 | 164 | 137 | 187 |
| 1994 | 615 | 273 | 258 | 197 | 140 | 105 | 133 | 153 | 131 | 54 | 289 | 252 | 217 |
| 1995 | 308 | 257 | 301 | 266 | 173 | 101 | 92 | 139 | 245 | 256 | 233 | 541 | 243 |
| 1996 | 302 | 283 | 199 | 241 | 145 | 141 | 114 | 128 | 122 | 262 | 213 | 219 | 197 |
| 1997 | 239 | 306 | 209 | 223 | 140 | 78 | 111 | 149 | 118 | 100 | 191 | 310 | 181 |
| 1998 | 347 | 483 | 400 | 253 | 198 | 173 | 200 | 139 | 137 | 266 | 142 | 234 | 246 |
| 1999 | 293 | 279 | 278 | 218 | 206 | 169 | 118 | 109 | 115 | 203 | 352 | 232 | 214 |
| 2000 | 292 | 263 | 198 | 230 | 171 | 218 | 207 | 145 | 152 | 190 | 152 | 301 | 210 |
| 2001 | 260 | 211 | 224 | 116 | 147 | 115 | 110 | 92 | 119 | 134 | 234 | 353 | 176 |
| 2002 | 399 | 224 | 184 | 166 | 119 | 146 | 102 | 166 | 215 | 151 | 221 | 280 | 198 |
| 2003 | 264 | 213 | 170 | 129 | 201 | 180 | 162 | 131 | 133 | 139 | 153 | 246 | 177 |
| 2004 | 383 | 275 | 280 | 120 | 187 | 168 | 133 | 157 | 147 | 99 | 211 | 158 | 193 |
| 2005 | 296 | 289 | 252 | 130 | 114 | 118 | 129 | 123 | 167 | 140 | 158 | 218 | 177 |
| 2006 | 244 | 212 | 151 | 197 | 153 | 172 | 131 | 118 | 113 | 179 | 294 | 260 | 185 |
| 2007 | 289 | 243 | 228 | 137 | 115 | 144 | 139 | 96 | 84 | 168 | 187 | 286 | 176 |
| 2008 | 283 | 270 | 196 | 157 | 131 | 104 | | | | | | | 190 |
| Min. | 120 | 111 | 111 | 61 | 45 | 34 | 25 | 14 | 15 | 30 | 44 | 108 | 81 |
| Mean | 258 | 246 | 208 | 162 | 120 | 98 | 87 | 89 | 95 | 127 | 166 | 224 | 157 |
| Max. | 615 | 483 | 400 | 346 | 261 | 218 | 207 | 197 | 245 | 266 | 352 | 541 | 246 |

Table A.8 Monthly means 1931 to 2008 – M-co Lake Pukaki Inflow (m³/s)

| Year | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Mean |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| 1931 | | | | | | | 48 | 42 | 42 | 107 | 84 | 147 | 79 |
| 1932 | 185 | 189 | 128 | 87 | 60 | 47 | 29 | 26 | 38 | 78 | 145 | 161 | 98 |
| 1933 | 206 | 386 | 215 | 238 | 108 | 53 | 82 | 74 | 43 | 80 | 99 | 227 | 149 |
| 1934 | 226 | 219 | 140 | 224 | 131 | 71 | 56 | 73 | 74 | 161 | 114 | 175 | 138 |
| 1935 | 337 | 298 | 213 | 143 | 95 | 85 | 46 | 62 | 50 | 67 | 91 | 204 | 140 |
| 1936 | 174 | 209 | 146 | 165 | 79 | 43 | 58 | 64 | 67 | 178 | 193 | 163 | 128 |
| 1937 | 188 | 184 | 131 | 197 | 78 | 48 | 36 | 37 | 39 | 50 | 85 | 151 | 102 |
| 1938 | 330 | 250 | 259 | 306 | 72 | 55 | 41 | 52 | 63 | 76 | 111 | 178 | 149 |
| 1939 | 119 | 155 | 138 | 86 | 72 | 82 | 44 | 30 | 52 | 58 | 108 | 178 | 93 |
| 1940 | 245 | 288 | 255 | 117 | 103 | 60 | 33 | 28 | 42 | 102 | 114 | 171 | 130 |
| 1941 | 223 | 295 | 167 | 96 | 51 | 78 | 51 | 34 | 33 | 44 | 111 | 166 | 111 |
| 1942 | 191 | 141 | 168 | 361 | 161 | 46 | 74 | 37 | 55 | 211 | 182 | 197 | 152 |
| 1943 | 195 | 261 | 151 | 116 | 52 | 43 | 39 | 28 | 55 | 93 | 120 | 197 | 112 |
| 1944 | 200 | 285 | 184 | 182 | 70 | 45 | 55 | 45 | 45 | 78 | 132 | 147 | 122 |
| 1945 | 378 | 316 | 197 | 173 | 51 | 34 | 40 | 58 | 104 | 80 | 252 | 159 | 152 |
| 1946 | 247 | 354 | 204 | 92 | 51 | 37 | 37 | 71 | 106 | 132 | 97 | 222 | 136 |
| 1947 | 164 | 187 | 150 | 84 | 61 | 56 | 49 | 46 | 58 | 140 | 151 | 283 | 119 |
| 1948 | 237 | 210 | 150 | 85 | 61 | 63 | 63 | 41 | 58 | 143 | 219 | 212 | 128 |
| 1949 | 203 | 378 | 205 | 138 | 112 | 76 | 80 | 80 | 51 | 158 | 136 | 154 | 146 |
| 1950 | 279 | 135 | 124 | 88 | 167 | 88 | 81 | 81 | 82 | 84 | 120 | 233 | 131 |
| 1951 | 197 | 169 | 127 | 128 | 67 | 46 | 85 | 51 | 60 | 110 | 165 | 166 | 114 |
| 1952 | 180 | 207 | 215 | 138 | 95 | 89 | 79 | 48 | 75 | 121 | 119 | 149 | 126 |
| 1953 | 180 | 197 | 189 | 150 | 143 | 63 | 61 | 72 | 91 | 68 | 185 | 251 | 137 |
| 1954 | 252 | 305 | 236 | 115 | 68 | 85 | 60 | 55 | 26 | 70 | 160 | 182 | 133 |
| 1955 | 234 | 408 | 225 | 132 | 178 | 90 | 59 | 68 | 84 | 106 | 115 | 195 | 156 |
| 1956 | 257 | 200 | 144 | 209 | 125 | 110 | 79 | 58 | 51 | 76 | 142 | 206 | 138 |
| 1957 | 209 | 227 | 192 | 175 | 151 | 61 | 65 | 61 | 37 | 103 | 187 | 377 | 154 |
| 1958 | 332 | 475 | 293 | 152 | 154 | 90 | 49 | 53 | 42 | 118 | 153 | 268 | 180 |
| 1959 | 233 | 196 | 149 | 96 | 60 | 70 | 48 | 37 | 82 | 63 | 164 | 216 | 117 |
| 1960 | 274 | 248 | 207 | 92 | 91 | 76 | 62 | 72 | 104 | 101 | 116 | 132 | 131 |
| 1961 | 161 | 207 | 211 | 198 | 69 | 69 | 69 | 63 | 59 | 123 | 170 | 182 | 131 |
| 1962 | 300 | 173 | 156 | 87 | 132 | 65 | 88 | 71 | 78 | 125 | 144 | 153 | 131 |
| 1963 | 191 | 258 | 176 | 102 | 106 | 82 | 52 | 83 | 85 | 73 | 89 | 108 | 116 |
| 1964 | 159 | 155 | 177 | 106 | 140 | 76 | 73 | 60 | 65 | 71 | 99 | 177 | 113 |
| 1965 | 248 | 161 | 184 | 77 | 61 | 57 | 41 | 44 | 56 | 79 | 150 | 240 | 116 |
| 1966 | 293 | 301 | 169 | 142 | 55 | 49 | 50 | 50 | 53 | 70 | 122 | 185 | 127 |
| 1967 | 266 | 206 | 371 | 250 | 103 | 56 | 86 | 114 | 61 | 101 | 166 | 255 | 170 |
| 1968 | 195 | 238 | 273 | 131 | 158 | 58 | 50 | 77 | 77 | 137 | 142 | 147 | 140 |
| 1969 | 178 | 162 | 164 | 128 | 73 | 52 | 45 | 46 | 184 | 73 | 111 | 253 | 122 |

| Year | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Mean |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| 1970 | 264 | 200 | 203 | 168 | 57 | 56 | 55 | 104 | 239 | 115 | 177 | 210 | 154 |
| 1971 | 175 | 166 | 126 | 70 | 80 | 98 | 48 | 32 | 82 | 128 | 110 | 161 | 106 |
| 1972 | 190 | 139 | 231 | 121 | 89 | 35 | 52 | 30 | 113 | 104 | 211 | 121 | 120 |
| 1973 | 148 | 169 | 128 | 140 | 112 | 67 | 43 | 49 | 54 | 143 | 223 | 155 | 119 |
| 1974 | 147 | 281 | 189 | 222 | 57 | 59 | 53 | 39 | 47 | 89 | 147 | 194 | 126 |
| 1975 | 195 | 211 | 258 | 221 | 116 | 48 | 32 | 73 | 58 | 99 | 126 | 129 | 130 |
| 1976 | 166 | 111 | 140 | 74 | 72 | 83 | 22 | 21 | 16 | 33 | 46 | 202 | 82 |
| 1977 | 171 | 195 | 159 | 96 | 47 | 38 | 31 | 14 | 20 | 61 | 113 | 124 | 88 |
| 1978 | 172 | 149 | 159 | 185 | 151 | 46 | 28 | 66 | 66 | 76 | 94 | 119 | 109 |
| 1979 | 163 | 178 | 225 | 107 | 131 | 62 | 92 | 101 | 133 | 109 | 165 | 321 | 149 |
| 1980 | 211 | 125 | 137 | 131 | 102 | 89 | 62 | 72 | 98 | 106 | 121 | 154 | 117 |
| 1981 | 173 | 253 | 279 | 125 | 99 | 114 | 72 | 71 | 100 | 144 | 127 | 200 | 146 |
| 1982 | 257 | 229 | 242 | 90 | 109 | 74 | 55 | 72 | 86 | 92 | 204 | 180 | 141 |
| 1983 | 241 | 138 | 189 | 151 | 151 | 82 | 88 | 82 | 102 | 185 | 203 | 196 | 151 |
| 1984 | 199 | 180 | 186 | 111 | 68 | 60 | 90 | 110 | 102 | 127 | 187 | 320 | 145 |
| 1985 | 276 | 153 | 127 | 114 | 64 | 50 | 51 | 82 | 83 | 77 | 116 | 195 | 116 |
| 1986 | 184 | 136 | 140 | 112 | 58 | 73 | 23 | 23 | 42 | 101 | 109 | 149 | 95 |
| 1987 | 225 | 190 | 161 | 162 | 85 | 94 | 19 | 19 | 47 | 125 | 121 | 140 | 115 |
| 1988 | 148 | 146 | 121 | 60 | 60 | 42 | 39 | 46 | 106 | 181 | 148 | 213 | 109 |
| 1989 | 168 | 186 | 189 | 93 | 56 | 60 | 21 | 19 | 20 | 62 | 135 | 282 | 107 |
| 1990 | 209 | 166 | 170 | 171 | 213 | 56 | 46 | 64 | 40 | 101 | 95 | 227 | 130 |
| 1991 | 206 | 242 | 85 | 112 | 54 | 40 | 9 | 89 | 77 | 100 | 136 | 94 | 103 |
| 1992 | 148 | 142 | 74 | 45 | 45 | 31 | 36 | 64 | 36 | 75 | 100 | 110 | 75 |
| 1993 | 206 | 144 | 117 | 71 | 65 | 122 | 24 | 21 | 44 | 102 | 51 | 113 | 90 |
| 1994 | 424 | 137 | 149 | 98 | 70 | 72 | 62 | 62 | 73 | 63 | 219 | 166 | 133 |
| 1995 | 224 | 183 | 198 | 176 | 85 | 53 | 45 | 54 | 126 | 130 | 112 | 425 | 151 |
| 1996 | 218 | 222 | 148 | 178 | 94 | 58 | 35 | 35 | 60 | 152 | 105 | 109 | 118 |
| 1997 | 132 | 179 | 116 | 129 | 82 | 47 | 40 | 71 | 46 | 88 | 124 | 223 | 106 |
| 1998 | 222 | 329 | 281 | 160 | 105 | 85 | 103 | 78 | 90 | 199 | 130 | 151 | 160 |
| 1999 | 199 | 181 | 190 | 146 | 124 | 80 | 71 | 57 | 74 | 130 | 246 | 116 | 134 |
| 2000 | 199 | 187 | 127 | 166 | 100 | 136 | 95 | 78 | 101 | 134 | 95 | 194 | 134 |
| 2001 | 204 | 169 | 160 | 101 | 82 | 76 | 54 | 60 | 61 | 118 | 151 | 248 | 123 |
| 2002 | 284 | 160 | 140 | 101 | 79 | 106 | 64 | 79 | 114 | 99 | 117 | 174 | 126 |
| 2003 | 173 | 185 | 136 | 108 | 146 | 84 | 67 | 44 | 89 | 95 | 128 | 175 | 119 |
| 2004 | 264 | 224 | 207 | 87 | 109 | 85 | 68 | 75 | 75 | 89 | 139 | 123 | 129 |
| 2005 | 196 | 207 | 168 | 92 | 74 | 61 | 57 | 73 | 114 | 82 | 124 | 173 | 118 |
| 2006 | 189 | 145 | 99 | 137 | 86 | 93 | 62 | 71 | 89 | 111 | 182 | 154 | 118 |
| 2007 | 195 | 160 | 148 | 100 | 91 | 76 | 68 | 65 | 88 | 105 | 89 | 198 | 115 |
| 2008 | 202 | 198 | 160 | 101 | 82 | 76 | | | | | | | 136 |
| Min. | 119 | 111 | 74 | 45 | 45 | 31 | 9 | 14 | 16 | 33 | 46 | 94 | 75 |
| Mean | 216 | 212 | 177 | 135 | 94 | 68 | 55 | 58 | 72 | 104 | 138 | 188 | 126 |
| Max. | 424 | 475 | 371 | 361 | 213 | 136 | 103 | 114 | 239 | 211 | 252 | 425 | 180 |

Table A.9 Monthly means 1931 to 2008 – SPECTRA Lake Tekapo Inflow (m³/s)

| Year | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Mean |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| 1931 | | | | | | | 34 | 33 | 34 | 84 | 83 | 113 | 64 |
| 1932 | 92 | 96 | 69 | 77 | 44 | 32 | 19 | 23 | 27 | 61 | 92 | 97 | 61 |
| 1933 | 112 | 198 | 103 | 126 | 77 | 45 | 72 | 57 | 35 | 51 | 71 | 134 | 89 |
| 1934 | 114 | 96 | 69 | 131 | 81 | 55 | 45 | 56 | 57 | 112 | 93 | 101 | 84 |
| 1935 | 150 | 122 | 116 | 78 | 75 | 66 | 36 | 45 | 31 | 51 | 71 | 121 | 80 |
| 1936 | 89 | 106 | 96 | 108 | 58 | 29 | 42 | 46 | 57 | 141 | 151 | 116 | 86 |
| 1937 | 122 | 106 | 69 | 121 | 66 | 46 | 31 | 27 | 28 | 32 | 55 | 92 | 66 |
| 1938 | 172 | 125 | 113 | 171 | 56 | 46 | 39 | 49 | 58 | 71 | 99 | 116 | 93 |
| 1939 | 70 | 73 | 67 | 49 | 47 | 58 | 36 | 26 | 46 | 55 | 98 | 128 | 63 |
| 1940 | 146 | 142 | 130 | 60 | 91 | 54 | 32 | 28 | 29 | 67 | 85 | 107 | 81 |
| 1941 | 118 | 131 | 89 | 54 | 40 | 67 | 43 | 32 | 38 | 33 | 82 | 110 | 69 |
| 1942 | 109 | 71 | 85 | 161 | 107 | 38 | 56 | 30 | 38 | 143 | 90 | 106 | 86 |
| 1943 | 81 | 121 | 84 | 82 | 42 | 33 | 28 | 29 | 47 | 98 | 106 | 121 | 72 |
| 1944 | 103 | 175 | 113 | 138 | 65 | 36 | 45 | 38 | 37 | 73 | 125 | 112 | 88 |
| 1945 | 222 | 181 | 115 | 102 | 48 | 38 | 38 | 55 | 87 | 68 | 182 | 137 | 106 |
| 1946 | 130 | 149 | 96 | 50 | 36 | 25 | 25 | 49 | 90 | 110 | 62 | 138 | 80 |
| 1947 | 89 | 89 | 59 | 38 | 25 | 29 | 29 | 28 | 35 | 94 | 101 | 134 | 62 |
| 1948 | 100 | 88 | 73 | 56 | 36 | 49 | 39 | 28 | 33 | 90 | 173 | 124 | 74 |
| 1949 | 111 | 168 | 106 | 81 | 103 | 64 | 62 | 49 | 31 | 134 | 100 | 97 | 92 |
| 1950 | 183 | 70 | 52 | 45 | 93 | 59 | 45 | 53 | 54 | 52 | 69 | 136 | 76 |
| 1951 | 105 | 93 | 73 | 107 | 41 | 26 | 61 | 37 | 39 | 90 | 132 | 119 | 77 |
| 1952 | 106 | 168 | 97 | 59 | 67 | 38 | 26 | 22 | 30 | 73 | 79 | 94 | 71 |
| 1953 | 81 | 82 | 76 | 83 | 104 | 56 | 30 | 37 | 48 | 42 | 118 | 154 | 76 |
| 1954 | 118 | 144 | 108 | 53 | 44 | 52 | 34 | 34 | 31 | 47 | 97 | 104 | 72 |
| 1955 | 95 | 201 | 89 | 64 | 129 | 67 | 34 | 42 | 52 | 67 | 74 | 106 | 84 |
| 1956 | 114 | 94 | 57 | 110 | 85 | 86 | 53 | 35 | 32 | 58 | 137 | 114 | 81 |
| 1957 | 105 | 92 | 79 | 87 | 95 | 45 | 54 | 39 | 28 | 79 | 152 | 283 | 95 |
| 1958 | 218 | 252 | 143 | 83 | 95 | 54 | 28 | 33 | 35 | 80 | 93 | 149 | 104 |
| 1959 | 98 | 85 | 67 | 60 | 39 | 40 | 28 | 21 | 44 | 46 | 121 | 134 | 65 |
| 1960 | 118 | 112 | 102 | 49 | 56 | 56 | 38 | 63 | 67 | 71 | 75 | 69 | 73 |
| 1961 | 72 | 92 | 112 | 109 | 41 | 40 | 42 | 42 | 38 | 105 | 116 | 109 | 77 |
| 1962 | 139 | 71 | 71 | 40 | 97 | 47 | 64 | 62 | 71 | 124 | 94 | 88 | 81 |
| 1963 | 88 | 128 | 82 | 60 | 79 | 65 | 35 | 43 | 64 | 55 | 68 | 66 | 69 |
| 1964 | 95 | 80 | 99 | 54 | 86 | 38 | 49 | 44 | 45 | 52 | 77 | 120 | 70 |
| 1965 | 158 | 94 | 80 | 49 | 44 | 38 | 30 | 35 | 33 | 51 | 110 | 156 | 73 |
| 1966 | 151 | 127 | 79 | 84 | 45 | 34 | 30 | 30 | 40 | 71 | 95 | 107 | 74 |
| 1967 | 132 | 98 | 159 | 136 | 72 | 60 | 99 | 84 | 38 | 65 | 144 | 162 | 104 |
| 1968 | 99 | 123 | 155 | 93 | 135 | 54 | 37 | 63 | 58 | 108 | 112 | 108 | 95 |
| 1969 | 109 | 79 | 81 | 65 | 53 | 32 | 24 | 23 | 141 | 40 | 59 | 157 | 72 |

| Year | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Mean |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| 1970 | 138 | 88 | 107 | 92 | 38 | 42 | 36 | 90 | 214 | 89 | 113 | 114 | 97 |
| 1971 | 78 | 67 | 54 | 37 | 55 | 81 | 29 | 27 | 56 | 98 | 91 | 107 | 65 |
| 1972 | 95 | 59 | 109 | 72 | 60 | 43 | 44 | 33 | 73 | 108 | 162 | 97 | 80 |
| 1973 | 90 | 65 | 57 | 73 | 65 | 54 | 27 | 33 | 45 | 98 | 142 | 80 | 69 |
| 1974 | 73 | 127 | 95 | 115 | 43 | 34 | 35 | 27 | 30 | 73 | 109 | 99 | 71 |
| 1975 | 84 | 111 | 135 | 155 | 90 | 55 | 43 | 68 | 59 | 90 | 101 | 99 | 91 |
| 1976 | 104 | 68 | 72 | 42 | 54 | 65 | 26 | 27 | 28 | 37 | 49 | 148 | 60 |
| 1977 | 118 | 105 | 79 | 59 | 48 | 44 | 39 | 27 | 28 | 49 | 77 | 83 | 63 |
| 1978 | 106 | 69 | 81 | 101 | 126 | 55 | 46 | 81 | 82 | 80 | 93 | 100 | 85 |
| 1979 | 93 | 102 | 132 | 98 | 130 | 51 | 39 | 44 | 60 | 101 | 140 | 239 | 103 |
| 1980 | 177 | 101 | 81 | 76 | 61 | 60 | 43 | 63 | 84 | 92 | 104 | 118 | 88 |
| 1981 | 93 | 95 | 152 | 75 | 72 | 79 | 48 | 39 | 40 | 101 | 98 | 140 | 86 |
| 1982 | 117 | 113 | 121 | 42 | 65 | 51 | 33 | 33 | 43 | 54 | 180 | 122 | 81 |
| 1983 | 143 | 63 | 84 | 92 | 111 | 60 | 75 | 67 | 83 | 180 | 171 | 147 | 107 |
| 1984 | 120 | 101 | 99 | 57 | 42 | 32 | 73 | 64 | 44 | 83 | 147 | 259 | 94 |
| 1985 | 171 | 73 | 62 | 66 | 49 | 49 | 40 | 57 | 67 | 49 | 95 | 137 | 76 |
| 1986 | 108 | 89 | 105 | 84 | 57 | 84 | 53 | 53 | 42 | 81 | 89 | 106 | 79 |
| 1987 | 137 | 138 | 128 | 104 | 85 | 89 | 40 | 39 | 47 | 107 | 103 | 99 | 93 |
| 1988 | 92 | 88 | 68 | 49 | 47 | 52 | 65 | 65 | 83 | 142 | 132 | 140 | 85 |
| 1989 | 112 | 101 | 117 | 78 | 66 | 86 | 48 | 36 | 30 | 30 | 104 | 168 | 81 |
| 1990 | 134 | 81 | 79 | 59 | 90 | 59 | 64 | 68 | 35 | 106 | 95 | 162 | 86 |
| 1991 | 146 | 140 | 55 | 90 | 36 | 30 | 30 | 96 | 95 | 83 | 69 | 96 | 80 |
| 1992 | 117 | 92 | 54 | 42 | 34 | 29 | 30 | 65 | 40 | 79 | 127 | 102 | 68 |
| 1993 | 124 | 79 | 85 | 66 | 64 | 114 | 41 | 34 | 35 | 93 | 58 | 79 | 73 |
| 1994 | 282 | 81 | 109 | 66 | 53 | 56 | 51 | 52 | 59 | 52 | 208 | 128 | 100 |
| 1995 | 128 | 88 | 118 | 138 | 80 | 42 | 34 | 41 | 124 | 129 | 102 | 276 | 109 |
| 1996 | 119 | 121 | 84 | 139 | 72 | 50 | 33 | 33 | 52 | 157 | 94 | 89 | 87 |
| 1997 | 89 | 104 | 73 | 104 | 58 | 38 | 38 | 61 | 41 | 56 | 90 | 150 | 75 |
| 1998 | 123 | 167 | 156 | 95 | 72 | 69 | 100 | 69 | 85 | 167 | 92 | 95 | 107 |
| 1999 | 95 | 81 | 100 | 81 | 85 | 62 | 47 | 37 | 48 | 123 | 192 | 74 | 85 |
| 2000 | 130 | 96 | 56 | 120 | 72 | 120 | 80 | 58 | 88 | 106 | 70 | 137 | 94 |
| 2001 | 99 | 69 | 65 | 44 | 44 | 44 | 34 | 35 | 36 | 71 | 111 | 174 | 69 |
| 2002 | 180 | 73 | 67 | 58 | 43 | 76 | 44 | 67 | 97 | 70 | 93 | 128 | 83 |
| 2003 | 95 | 94 | 61 | 53 | 108 | 80 | 58 | 35 | 54 | 69 | 83 | 110 | 75 |
| 2004 | 142 | 118 | 104 | 47 | 83 | 71 | 50 | 50 | 52 | 64 | 102 | 78 | 80 |
| 2005 | 129 | 103 | 89 | 48 | 46 | 40 | 39 | 43 | 90 | 48 | 62 | 81 | 68 |
| 2006 | 90 | 65 | 45 | 98 | 72 | 79 | 43 | 41 | 55 | 93 | 164 | 117 | 80 |
| 2007 | 110 | 74 | 69 | 43 | 48 | 53 | 47 | 35 | 41 | 91 | 69 | 121 | 67 |
| 2008 | 92 | 91 | 71 | 50 | 45 | 45 | | | | | | | 65 |
| Min. | 70 | 59 | 45 | 37 | 25 | 25 | 19 | 21 | 27 | 30 | 49 | 66 | 60 |
| Mean | 119 | 106 | 91 | 80 | 67 | 54 | 43 | 45 | 54 | 82 | 106 | 124 | 81 |
| Max. | 282 | 252 | 159 | 171 | 135 | 120 | 100 | 96 | 214 | 180 | 208 | 283 | 109 |

Table A.10 Monthly means 1931 to 2008 – M-co Lake Tekapo Inflow (m³/s)

| Year | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Mean |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| 1931 | | | | | | | 35 | 33 | 34 | 83 | 83 | 111 | 63 |
| 1932 | 94 | 96 | 70 | 76 | 45 | 33 | 20 | 23 | 26 | 59 | 89 | 96 | 60 |
| 1933 | 111 | 195 | 104 | 126 | 77 | 47 | 71 | 58 | 36 | 49 | 70 | 131 | 89 |
| 1934 | 114 | 98 | 69 | 131 | 82 | 57 | 46 | 56 | 55 | 112 | 92 | 101 | 84 |
| 1935 | 147 | 122 | 114 | 81 | 73 | 68 | 38 | 46 | 31 | 49 | 70 | 118 | 79 |
| 1936 | 91 | 105 | 98 | 105 | 61 | 31 | 41 | 44 | 56 | 137 | 152 | 116 | 86 |
| 1937 | 124 | 106 | 70 | 120 | 67 | 47 | 31 | 28 | 27 | 31 | 54 | 92 | 66 |
| 1938 | 169 | 122 | 113 | 169 | 59 | 47 | 40 | 49 | 58 | 69 | 95 | 119 | 92 |
| 1939 | 71 | 72 | 68 | 50 | 47 | 58 | 37 | 26 | 44 | 54 | 98 | 125 | 63 |
| 1940 | 144 | 147 | 125 | 64 | 90 | 55 | 33 | 28 | 29 | 65 | 86 | 105 | 81 |
| 1941 | 116 | 133 | 88 | 56 | 39 | 66 | 45 | 32 | 36 | 35 | 79 | 110 | 69 |
| 1942 | 108 | 73 | 87 | 159 | 106 | 41 | 57 | 30 | 37 | 139 | 95 | 104 | 87 |
| 1943 | 81 | 120 | 86 | 79 | 46 | 33 | 30 | 26 | 47 | 95 | 104 | 121 | 72 |
| 1944 | 105 | 170 | 115 | 136 | 67 | 37 | 45 | 38 | 37 | 68 | 126 | 116 | 88 |
| 1945 | 213 | 184 | 116 | 101 | 49 | 39 | 38 | 55 | 84 | 70 | 178 | 138 | 105 |
| 1946 | 127 | 151 | 97 | 51 | 36 | 26 | 25 | 48 | 89 | 109 | 64 | 136 | 80 |
| 1947 | 90 | 89 | 61 | 39 | 25 | 28 | 29 | 28 | 34 | 91 | 100 | 131 | 62 |
| 1948 | 104 | 88 | 74 | 56 | 37 | 47 | 40 | 28 | 33 | 87 | 174 | 123 | 74 |
| 1949 | 112 | 164 | 109 | 82 | 96 | 71 | 62 | 54 | 30 | 136 | 112 | 106 | 94 |
| 1950 | 188 | 82 | 57 | 49 | 80 | 71 | 41 | 58 | 56 | 55 | 74 | 143 | 80 |
| 1951 | 118 | 101 | 81 | 116 | 47 | 30 | 60 | 43 | 40 | 87 | 131 | 117 | 81 |
| 1952 | 106 | 165 | 100 | 63 | 65 | 41 | 29 | 23 | 31 | 70 | 81 | 90 | 72 |
| 1953 | 80 | 81 | 76 | 82 | 98 | 58 | 35 | 39 | 48 | 44 | 110 | 147 | 75 |
| 1954 | 118 | 132 | 109 | 58 | 49 | 57 | 40 | 38 | 33 | 48 | 93 | 100 | 73 |
| 1955 | 97 | 181 | 86 | 68 | 126 | 70 | 42 | 46 | 55 | 69 | 75 | 104 | 84 |
| 1956 | 110 | 97 | 61 | 102 | 84 | 82 | 56 | 36 | 32 | 53 | 129 | 114 | 79 |
| 1957 | 100 | 96 | 81 | 86 | 96 | 46 | 55 | 40 | 33 | 76 | 154 | 277 | 95 |
| 1958 | 221 | 251 | 146 | 84 | 93 | 55 | 28 | 33 | 41 | 79 | 97 | 140 | 105 |
| 1959 | 100 | 83 | 66 | 59 | 43 | 40 | 30 | 24 | 43 | 43 | 118 | 134 | 65 |
| 1960 | 117 | 112 | 102 | 51 | 56 | 56 | 39 | 62 | 67 | 72 | 74 | 68 | 73 |
| 1961 | 72 | 91 | 114 | 109 | 44 | 43 | 42 | 45 | 40 | 99 | 120 | 97 | 76 |
| 1962 | 137 | 71 | 73 | 45 | 99 | 54 | 69 | 64 | 69 | 121 | 88 | 79 | 81 |
| 1963 | 84 | 126 | 84 | 64 | 80 | 65 | 42 | 51 | 64 | 53 | 63 | 62 | 69 |
| 1964 | 87 | 81 | 96 | 58 | 85 | 43 | 55 | 50 | 47 | 49 | 70 | 130 | 71 |
| 1965 | 145 | 91 | 90 | 47 | 44 | 42 | 35 | 40 | 37 | 51 | 102 | 147 | 73 |
| 1966 | 152 | 123 | 82 | 81 | 49 | 38 | 35 | 35 | 44 | 71 | 91 | 99 | 75 |
| 1967 | 120 | 98 | 160 | 137 | 71 | 65 | 105 | 84 | 45 | 64 | 131 | 162 | 104 |
| 1968 | 98 | 122 | 151 | 96 | 132 | 58 | 52 | 62 | 61 | 97 | 113 | 107 | 96 |
| 1969 | 110 | 78 | 81 | 67 | 56 | 39 | 31 | 29 | 132 | 46 | 60 | 143 | 72 |

| Year | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Mean |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| 1970 | 130 | 89 | 107 | 93 | 45 | 46 | 39 | 85 | 204 | 95 | 114 | 112 | 96 |
| 1971 | 76 | 66 | 56 | 41 | 56 | 82 | 38 | 32 | 55 | 90 | 85 | 100 | 65 |
| 1972 | 92 | 61 | 108 | 71 | 60 | 48 | 50 | 41 | 71 | 100 | 152 | 99 | 79 |
| 1973 | 89 | 66 | 60 | 74 | 61 | 58 | 37 | 44 | 45 | 91 | 126 | 77 | 69 |
| 1974 | 76 | 122 | 98 | 110 | 47 | 41 | 37 | 34 | 35 | 68 | 99 | 95 | 72 |
| 1975 | 79 | 110 | 133 | 155 | 90 | 58 | 51 | 71 | 60 | 81 | 97 | 100 | 90 |
| 1976 | 104 | 72 | 74 | 48 | 57 | 66 | 34 | 30 | 27 | 38 | 48 | 134 | 61 |
| 1977 | 107 | 104 | 83 | 65 | 45 | 41 | 43 | 43 | 30 | 45 | 69 | 75 | 62 |
| 1978 | 107 | 69 | 92 | 120 | 148 | 78 | 79 | 107 | 108 | 95 | 107 | 104 | 102 |
| 1979 | 96 | 103 | 148 | 126 | 140 | 86 | 50 | 51 | 60 | 89 | 136 | 232 | 110 |
| 1980 | 172 | 103 | 83 | 77 | 64 | 61 | 48 | 67 | 85 | 91 | 104 | 116 | 89 |
| 1981 | 92 | 94 | 150 | 78 | 73 | 82 | 53 | 43 | 41 | 97 | 100 | 137 | 87 |
| 1982 | 113 | 110 | 123 | 44 | 67 | 57 | 40 | 36 | 43 | 60 | 167 | 116 | 81 |
| 1983 | 143 | 66 | 86 | 95 | 112 | 66 | 78 | 70 | 82 | 172 | 169 | 146 | 108 |
| 1984 | 121 | 105 | 100 | 62 | 46 | 34 | 74 | 62 | 43 | 81 | 143 | 246 | 93 |
| 1985 | 170 | 79 | 66 | 68 | 53 | 56 | 47 | 58 | 65 | 45 | 88 | 132 | 77 |
| 1986 | 115 | 112 | 121 | 100 | 77 | 108 | 79 | 82 | 60 | 78 | 88 | 117 | 94 |
| 1987 | 146 | 164 | 140 | 123 | 106 | 103 | 71 | 73 | 68 | 109 | 121 | 118 | 111 |
| 1988 | 124 | 115 | 77 | 76 | 68 | 81 | 98 | 98 | 85 | 134 | 148 | 157 | 105 |
| 1989 | 137 | 126 | 138 | 105 | 98 | 117 | 83 | 78 | 59 | 81 | 111 | 164 | 108 |
| 1990 | 159 | 122 | 131 | 141 | 172 | 91 | 96 | 85 | 54 | 115 | 123 | 178 | 123 |
| 1991 | 175 | 172 | 79 | 115 | 43 | 63 | 70 | 117 | 115 | 80 | 41 | 123 | 99 |
| 1992 | 146 | 124 | 90 | 72 | 49 | 48 | 33 | 68 | 51 | 86 | 140 | 131 | 86 |
| 1993 | 149 | 104 | 110 | 96 | 86 | 110 | 76 | 72 | 53 | 108 | 92 | 73 | 94 |
| 1994 | 297 | 109 | 116 | 82 | 60 | 56 | 58 | 64 | 64 | 48 | 202 | 129 | 107 |
| 1995 | 129 | 94 | 113 | 136 | 84 | 50 | 42 | 52 | 127 | 137 | 107 | 273 | 112 |
| 1996 | 133 | 126 | 92 | 138 | 78 | 61 | 48 | 50 | 75 | 151 | 100 | 94 | 96 |
| 1997 | 97 | 115 | 82 | 107 | 74 | 42 | 48 | 71 | 54 | 63 | 82 | 138 | 81 |
| 1998 | 128 | 180 | 160 | 103 | 86 | 83 | 102 | 70 | 79 | 166 | 98 | 92 | 112 |
| 1999 | 94 | 83 | 97 | 81 | 87 | 67 | 50 | 42 | 51 | 102 | 189 | 76 | 85 |
| 2000 | 117 | 94 | 59 | 113 | 71 | 113 | 81 | 59 | 82 | 91 | 51 | 130 | 89 |
| 2001 | 89 | 65 | 67 | 42 | 49 | 44 | 41 | 31 | 41 | 66 | 108 | 165 | 67 |
| 2002 | 170 | 76 | 68 | 59 | 46 | 70 | 45 | 71 | 98 | 71 | 94 | 125 | 83 |
| 2003 | 95 | 86 | 60 | 52 | 101 | 82 | 65 | 45 | 53 | 68 | 75 | 104 | 74 |
| 2004 | 136 | 117 | 106 | 47 | 83 | 73 | 57 | 59 | 57 | 58 | 98 | 72 | 80 |
| 2005 | 124 | 102 | 90 | 51 | 47 | 44 | 46 | 46 | 86 | 51 | 59 | 75 | 68 |
| 2006 | 83 | 68 | 47 | 91 | 74 | 83 | 49 | 45 | 48 | 88 | 156 | 116 | 79 |
| 2007 | 110 | 79 | 76 | 48 | 46 | 55 | 53 | 38 | 42 | 87 | 73 | 116 | 69 |
| 2008 | 91 | 91 | 70 | 55 | 48 | 44 | | | | | | | 67 |
| Min. | 71 | 61 | 47 | 39 | 25 | 26 | 20 | 23 | 26 | 31 | 41 | 62 | 60 |
| Mean | 121 | 110 | 95 | 85 | 71 | 59 | 50 | 51 | 57 | 81 | 105 | 123 | 84 |
| Max. | 297 | 251 | 160 | 169 | 172 | 117 | 105 | 117 | 204 | 172 | 202 | 277 | 123 |

Table A.11 Monthly means 1931 to 2008 – SPECTRA Lake Wanaka Inflow (m³/s)

| Year | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Mean |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| 1931 | | | | | | | 114 | 90 | 97 | 306 | 242 | 239 | 182 |
| 1932 | 247 | 208 | 157 | 188 | 125 | 94 | 39 | 98 | 103 | 265 | 251 | 230 | 167 |
| 1933 | 220 | 362 | 285 | 340 | 249 | 106 | 136 | 138 | 131 | 232 | 147 | 204 | 212 |
| 1934 | 181 | 123 | 138 | 362 | 266 | 137 | 126 | 139 | 184 | 303 | 190 | 196 | 196 |
| 1935 | 372 | 181 | 262 | 179 | 163 | 131 | 86 | 77 | 52 | 183 | 151 | 203 | 170 |
| 1936 | 111 | 229 | 115 | 240 | 131 | 70 | 80 | 211 | 220 | 368 | 407 | 244 | 202 |
| 1937 | 236 | 183 | 158 | 329 | 214 | 89 | 78 | 89 | 110 | 110 | 165 | 181 | 162 |
| 1938 | 265 | 192 | 219 | 216 | 127 | 145 | 74 | 151 | 187 | 231 | 216 | 254 | 190 |
| 1939 | 149 | 173 | 133 | 179 | 159 | 197 | 112 | 72 | 241 | 149 | 290 | 332 | 182 |
| 1940 | 220 | 353 | 254 | 174 | 217 | 141 | 80 | 83 | 146 | 341 | 254 | 260 | 210 |
| 1941 | 199 | 213 | 194 | 137 | 154 | 169 | 137 | 63 | 94 | 105 | 325 | 248 | 169 |
| 1942 | 260 | 159 | 200 | 260 | 248 | 154 | 156 | 142 | 221 | 416 | 257 | 219 | 225 |
| 1943 | 264 | 288 | 250 | 237 | 141 | 155 | 85 | 70 | 127 | 192 | 248 | 182 | 186 |
| 1944 | 208 | 270 | 262 | 291 | 147 | 125 | 153 | 102 | 105 | 253 | 271 | 275 | 205 |
| 1945 | 344 | 448 | 367 | 254 | 101 | 72 | 78 | 159 | 234 | 201 | 471 | 239 | 246 |
| 1946 | 269 | 336 | 192 | 105 | 146 | 91 | 113 | 176 | 277 | 410 | 147 | 333 | 216 |
| 1947 | 169 | 142 | 107 | 77 | 94 | 128 | 123 | 97 | 191 | 309 | 250 | 288 | 165 |
| 1948 | 181 | 140 | 204 | 96 | 153 | 139 | 123 | 85 | 167 | 361 | 384 | 305 | 195 |
| 1949 | 224 | 456 | 330 | 273 | 193 | 88 | 186 | 153 | 124 | 343 | 201 | 283 | 237 |
| 1950 | 332 | 111 | 126 | 99 | 250 | 107 | 134 | 118 | 167 | 154 | 144 | 253 | 167 |
| 1951 | 115 | 115 | 89 | 171 | 83 | 69 | 256 | 85 | 169 | 236 | 312 | 232 | 161 |
| 1952 | 236 | 337 | 193 | 129 | 200 | 118 | 76 | 48 | 147 | 248 | 149 | 151 | 169 |
| 1953 | 86 | 74 | 127 | 218 | 260 | 99 | 83 | 124 | 171 | 100 | 345 | 321 | 168 |
| 1954 | 206 | 225 | 290 | 122 | 63 | 152 | 122 | 86 | 91 | 196 | 269 | 159 | 165 |
| 1955 | 193 | 299 | 196 | 145 | 347 | 152 | 68 | 150 | 177 | 158 | 192 | 224 | 191 |
| 1956 | 134 | 75 | 84 | 281 | 213 | 202 | 122 | 105 | 115 | 195 | 363 | 297 | 182 |
| 1957 | 254 | 180 | 172 | 264 | 225 | 134 | 120 | 105 | 80 | 243 | 500 | 511 | 233 |
| 1958 | 320 | 629 | 323 | 230 | 343 | 178 | 51 | 97 | 98 | 327 | 238 | 269 | 256 |
| 1959 | 129 | 131 | 129 | 100 | 65 | 141 | 63 | 49 | 265 | 142 | 300 | 253 | 147 |
| 1960 | 219 | 221 | 139 | 79 | 177 | 152 | 152 | 205 | 195 | 184 | 159 | 141 | 169 |
| 1961 | 90 | 121 | 197 | 209 | 71 | 134 | 144 | 134 | 118 | 327 | 236 | 189 | 164 |
| 1962 | 224 | 135 | 107 | 81 | 200 | 134 | 226 | 127 | 167 | 297 | 230 | 153 | 174 |
| 1963 | 140 | 220 | 175 | 101 | 158 | 143 | 62 | 123 | 203 | 171 | 180 | 129 | 150 |
| 1964 | 249 | 111 | 206 | 109 | 253 | 69 | 132 | 123 | 155 | 195 | 236 | 299 | 179 |
| 1965 | 392 | 133 | 255 | 122 | 154 | 154 | 76 | 71 | 148 | 183 | 373 | 308 | 198 |
| 1966 | 242 | 281 | 151 | 254 | 99 | 91 | 65 | 71 | 132 | 129 | 225 | 279 | 167 |
| 1967 | 272 | 229 | 372 | 392 | 193 | 81 | 140 | 288 | 137 | 189 | 324 | 394 | 251 |
| 1968 | 189 | 218 | 387 | 108 | 350 | 79 | 69 | 131 | 190 | 359 | 300 | 267 | 221 |
| 1969 | 207 | 125 | 204 | 149 | 114 | 52 | 88 | 115 | 545 | 154 | 179 | 405 | 195 |

| Year | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Mean |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| 1970 | 249 | 179 | 188 | 186 | 63 | 108 | 181 | 302 | 559 | 257 | 306 | 275 | 238 |
| 1971 | 124 | 106 | 119 | 93 | 144 | 161 | 58 | 96 | 260 | 329 | 227 | 269 | 166 |
| 1972 | 180 | 81 | 320 | 198 | 162 | 76 | 109 | 74 | 366 | 239 | 342 | 168 | 193 |
| 1973 | 152 | 131 | 138 | 233 | 198 | 146 | 68 | 106 | 140 | 327 | 368 | 150 | 180 |
| 1974 | 98 | 221 | 178 | 191 | 77 | 87 | 123 | 62 | 104 | 211 | 216 | 186 | 145 |
| 1975 | 124 | 266 | 337 | 386 | 320 | 134 | 131 | 227 | 172 | 254 | 211 | 187 | 229 |
| 1976 | 154 | 88 | 145 | 83 | 170 | 184 | 70 | 67 | 48 | 94 | 106 | 285 | 125 |
| 1977 | 236 | 171 | 140 | 169 | 140 | 115 | 86 | 54 | 88 | 171 | 214 | 193 | 148 |
| 1978 | 181 | 104 | 215 | 211 | 261 | 122 | 96 | 252 | 214 | 383 | 258 | 170 | 206 |
| 1979 | 269 | 226 | 267 | 187 | 234 | 116 | 102 | 87 | 219 | 254 | 280 | 418 | 222 |
| 1980 | 308 | 196 | 191 | 198 | 174 | 165 | 119 | 239 | 271 | 265 | 246 | 259 | 219 |
| 1981 | 141 | 181 | 350 | 185 | 170 | 145 | 113 | 72 | 126 | 309 | 192 | 309 | 192 |
| 1982 | 303 | 252 | 285 | 92 | 319 | 128 | 60 | 133 | 152 | 133 | 426 | 302 | 215 |
| 1983 | 474 | 134 | 232 | 247 | 293 | 120 | 182 | 197 | 289 | 379 | 374 | 264 | 266 |
| 1984 | 321 | 230 | 298 | 158 | 145 | 106 | 183 | 205 | 163 | 372 | 345 | 580 | 260 |
| 1985 | 446 | 137 | 136 | 190 | 168 | 174 | 150 | 215 | 198 | 136 | 293 | 273 | 210 |
| 1986 | 275 | 184 | 204 | 240 | 145 | 301 | 110 | 107 | 123 | 214 | 171 | 257 | 194 |
| 1987 | 302 | 249 | 315 | 222 | 225 | 272 | 93 | 125 | 178 | 360 | 220 | 200 | 230 |
| 1988 | 169 | 158 | 143 | 117 | 95 | 170 | 180 | 190 | 326 | 536 | 319 | 333 | 228 |
| 1989 | 196 | 161 | 250 | 132 | 105 | 206 | 121 | 146 | 84 | 165 | 291 | 340 | 183 |
| 1990 | 226 | 140 | 234 | 179 | 327 | 184 | 161 | 155 | 73 | 216 | 174 | 434 | 210 |
| 1991 | 308 | 328 | 110 | 210 | 81 | 77 | 51 | 347 | 279 | 250 | 147 | 191 | 197 |
| 1992 | 211 | 178 | 123 | 97 | 68 | 48 | 140 | 156 | 68 | 316 | 313 | 196 | 160 |
| 1993 | 286 | 169 | 135 | 140 | 240 | 351 | 183 | 107 | 127 | 280 | 137 | 196 | 196 |
| 1994 | 658 | 166 | 176 | 172 | 172 | 153 | 141 | 188 | 171 | 135 | 523 | 290 | 246 |
| 1995 | 292 | 156 | 316 | 269 | 190 | 97 | 79 | 170 | 442 | 327 | 284 | 688 | 277 |
| 1996 | 267 | 233 | 155 | 309 | 153 | 128 | 57 | 68 | 216 | 513 | 187 | 214 | 208 |
| 1997 | 114 | 136 | 108 | 263 | 138 | 104 | 79 | 226 | 101 | 197 | 325 | 389 | 182 |
| 1998 | 262 | 394 | 377 | 270 | 194 | 216 | 248 | 173 | 215 | 395 | 174 | 182 | 258 |
| 1999 | 147 | 124 | 256 | 237 | 283 | 157 | 125 | 82 | 153 | 295 | 685 | 126 | 222 |
| 2000 | 157 | 152 | 116 | 155 | 261 | 395 | 227 | 126 | 229 | 316 | 159 | 340 | 220 |
| 2001 | 189 | 114 | 131 | 100 | 105 | 211 | 95 | 134 | 115 | 203 | 284 | 419 | 175 |
| 2002 | 267 | 96 | 155 | 115 | 114 | 233 | 122 | 199 | 377 | 186 | 226 | 320 | 201 |
| 2003 | 171 | 186 | 111 | 66 | 176 | 254 | 141 | 101 | 208 | 211 | 286 | 273 | 182 |
| 2004 | 300 | 270 | 229 | 102 | 232 | 273 | 113 | 138 | 173 | 168 | 303 | 180 | 206 |
| 2005 | 281 | 152 | 240 | 98 | 143 | 107 | 109 | 171 | 229 | 130 | 152 | 165 | 165 |
| 2006 | 187 | 92 | 113 | 213 | 166 | 128 | 98 | 99 | 228 | 254 | 332 | 271 | 182 |
| 2007 | 191 | 132 | 147 | 79 | 211 | 187 | 125 | 152 | 155 | 258 | 175 | 281 | 175 |
| 2008 | 195 | 161 | 157 | 95 | 104 | 140 | | | | | | | 142 |
| Min. | 86 | 74 | 84 | 66 | 63 | 48 | 39 | 48 | 48 | 94 | 106 | 126 | 125 |
| Mean | 231 | 198 | 202 | 184 | 179 | 145 | 116 | 134 | 183 | 251 | 265 | 267 | 197 |
| Max. | 658 | 629 | 387 | 392 | 350 | 395 | 256 | 347 | 559 | 536 | 685 | 688 | 277 |

Table A.12 Monthly means 1931 to 2008 – M-co Lake Wanaka Inflow (m³/s)

| Year | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Mean |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| 1931 | | | | | | | 113 | 90 | 103 | 300 | 241 | 239 | 181 |
| 1932 | 245 | 212 | 157 | 187 | 126 | 94 | 44 | 97 | 105 | 270 | 249 | 232 | 168 |
| 1933 | 228 | 367 | 288 | 346 | 251 | 113 | 135 | 142 | 136 | 226 | 149 | 204 | 214 |
| 1934 | 181 | 128 | 134 | 368 | 267 | 140 | 127 | 140 | 185 | 301 | 192 | 194 | 197 |
| 1935 | 365 | 190 | 262 | 187 | 163 | 130 | 89 | 77 | 54 | 188 | 226 | 245 | 182 |
| 1936 | 120 | 225 | 124 | 237 | 134 | 69 | 85 | 209 | 221 | 370 | 404 | 250 | 203 |
| 1937 | 235 | 186 | 163 | 326 | 215 | 96 | 78 | 89 | 110 | 110 | 164 | 182 | 162 |
| 1938 | 264 | 192 | 219 | 219 | 124 | 148 | 79 | 149 | 190 | 230 | 221 | 252 | 190 |
| 1939 | 151 | 172 | 135 | 181 | 162 | 203 | 110 | 74 | 221 | 170 | 294 | 325 | 183 |
| 1940 | 223 | 361 | 247 | 181 | 217 | 143 | 84 | 82 | 143 | 326 | 268 | 259 | 211 |
| 1941 | 202 | 215 | 192 | 139 | 151 | 176 | 136 | 66 | 93 | 108 | 318 | 251 | 170 |
| 1942 | 261 | 162 | 243 | 262 | 249 | 161 | 157 | 140 | 214 | 424 | 266 | 221 | 231 |
| 1943 | 262 | 293 | 252 | 236 | 144 | 154 | 91 | 71 | 130 | 189 | 245 | 188 | 187 |
| 1944 | 205 | 274 | 265 | 289 | 151 | 123 | 150 | 106 | 106 | 247 | 273 | 264 | 204 |
| 1945 | 356 | 459 | 360 | 258 | 102 | 74 | 82 | 154 | 231 | 205 | 462 | 249 | 248 |
| 1946 | 266 | 347 | 191 | 108 | 144 | 92 | 116 | 173 | 276 | 417 | 165 | 325 | 218 |
| 1947 | 174 | 146 | 109 | 81 | 91 | 125 | 124 | 100 | 184 | 306 | 256 | 287 | 165 |
| 1948 | 188 | 142 | 200 | 101 | 142 | 148 | 125 | 85 | 157 | 349 | 407 | 308 | 196 |
| 1949 | 224 | 456 | 335 | 278 | 193 | 106 | 182 | 155 | 132 | 334 | 206 | 280 | 239 |
| 1950 | 341 | 121 | 124 | 103 | 243 | 118 | 133 | 120 | 166 | 151 | 149 | 252 | 169 |
| 1951 | 117 | 114 | 89 | 165 | 82 | 80 | 246 | 89 | 166 | 245 | 322 | 239 | 163 |
| 1952 | 262 | 323 | 203 | 148 | 196 | 122 | 85 | 53 | 150 | 242 | 151 | 151 | 173 |
| 1953 | 89 | 75 | 124 | 232 | 249 | 105 | 86 | 125 | 169 | 100 | 342 | 331 | 169 |
| 1954 | 206 | 224 | 287 | 127 | 65 | 156 | 118 | 86 | 92 | 189 | 273 | 160 | 165 |
| 1955 | 205 | 297 | 200 | 163 | 331 | 154 | 71 | 142 | 176 | 166 | 187 | 228 | 193 |
| 1956 | 135 | 88 | 85 | 267 | 218 | 206 | 126 | 104 | 116 | 197 | 359 | 293 | 183 |
| 1957 | 249 | 195 | 174 | 256 | 235 | 124 | 134 | 106 | 82 | 240 | 500 | 509 | 234 |
| 1958 | 329 | 615 | 332 | 241 | 343 | 182 | 74 | 95 | 96 | 309 | 259 | 264 | 259 |
| 1959 | 137 | 132 | 129 | 99 | 68 | 140 | 66 | 52 | 260 | 148 | 296 | 252 | 148 |
| 1960 | 219 | 221 | 144 | 80 | 176 | 154 | 163 | 196 | 198 | 181 | 162 | 142 | 170 |
| 1961 | 94 | 122 | 194 | 210 | 74 | 135 | 142 | 139 | 119 | 317 | 253 | 187 | 166 |
| 1962 | 224 | 133 | 114 | 77 | 201 | 137 | 220 | 137 | 167 | 283 | 243 | 157 | 175 |
| 1963 | 140 | 218 | 179 | 105 | 158 | 141 | 64 | 123 | 201 | 172 | 183 | 131 | 151 |
| 1964 | 246 | 116 | 204 | 117 | 253 | 75 | 130 | 123 | 156 | 196 | 236 | 304 | 180 |
| 1965 | 391 | 137 | 256 | 124 | 153 | 156 | 80 | 72 | 146 | 179 | 372 | 315 | 199 |
| 1966 | 244 | 280 | 168 | 240 | 104 | 90 | 66 | 72 | 130 | 130 | 227 | 276 | 168 |
| 1967 | 266 | 243 | 380 | 397 | 196 | 79 | 150 | 285 | 136 | 192 | 314 | 402 | 254 |
| 1968 | 196 | 240 | 364 | 123 | 340 | 87 | 69 | 132 | 198 | 342 | 306 | 270 | 223 |
| 1969 | 210 | 132 | 200 | 152 | 116 | 58 | 89 | 119 | 536 | 157 | 182 | 400 | 196 |

| Year | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Mean |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| 1970 | 260 | 175 | 188 | 185 | 66 | 112 | 171 | 295 | 576 | 260 | 312 | 273 | 239 |
| 1971 | 126 | 108 | 119 | 94 | 141 | 164 | 62 | 94 | 251 | 338 | 226 | 269 | 166 |
| 1972 | 183 | 88 | 312 | 196 | 166 | 78 | 110 | 85 | 358 | 244 | 340 | 167 | 194 |
| 1973 | 158 | 130 | 143 | 224 | 202 | 157 | 77 | 109 | 135 | 339 | 357 | 148 | 182 |
| 1974 | 101 | 216 | 195 | 183 | 80 | 84 | 129 | 69 | 104 | 208 | 215 | 186 | 147 |
| 1975 | 122 | 259 | 332 | 407 | 326 | 138 | 140 | 219 | 173 | 248 | 221 | 188 | 231 |
| 1976 | 155 | 90 | 142 | 83 | 173 | 181 | 67 | 70 | 49 | 95 | 105 | 285 | 125 |
| 1977 | 225 | 180 | 146 | 169 | 139 | 120 | 86 | 57 | 88 | 157 | 224 | 193 | 149 |
| 1978 | 182 | 107 | 199 | 229 | 272 | 120 | 96 | 252 | 213 | 389 | 256 | 177 | 209 |
| 1979 | 260 | 235 | 270 | 190 | 231 | 120 | 103 | 89 | 208 | 247 | 293 | 423 | 223 |
| 1980 | 311 | 200 | 191 | 199 | 178 | 164 | 125 | 233 | 275 | 265 | 247 | 259 | 221 |
| 1981 | 143 | 184 | 351 | 186 | 167 | 155 | 115 | 73 | 124 | 308 | 192 | 309 | 193 |
| 1982 | 297 | 253 | 290 | 96 | 316 | 131 | 61 | 127 | 158 | 132 | 422 | 302 | 215 |
| 1983 | 478 | 136 | 231 | 247 | 291 | 122 | 179 | 199 | 286 | 380 | 374 | 264 | 267 |
| 1984 | 320 | 232 | 298 | 159 | 147 | 104 | 175 | 213 | 163 | 370 | 343 | 582 | 260 |
| 1985 | 447 | 139 | 136 | 190 | 168 | 174 | 150 | 211 | 201 | 137 | 291 | 273 | 210 |
| 1986 | 277 | 181 | 207 | 238 | 148 | 300 | 111 | 107 | 122 | 213 | 171 | 255 | 194 |
| 1987 | 302 | 251 | 300 | 237 | 222 | 276 | 94 | 126 | 175 | 360 | 222 | 201 | 230 |
| 1988 | 170 | 156 | 144 | 119 | 97 | 169 | 178 | 191 | 324 | 535 | 320 | 335 | 229 |
| 1989 | 197 | 161 | 249 | 133 | 106 | 205 | 122 | 147 | 78 | 168 | 293 | 338 | 183 |
| 1990 | 228 | 142 | 233 | 177 | 328 | 182 | 165 | 156 | 74 | 215 | 174 | 432 | 210 |
| 1991 | 308 | 327 | 108 | 215 | 81 | 80 | 50 | 344 | 280 | 248 | 149 | 189 | 197 |
| 1992 | 212 | 180 | 127 | 97 | 70 | 49 | 139 | 156 | 68 | 311 | 316 | 194 | 160 |
| 1993 | 289 | 166 | 139 | 141 | 235 | 355 | 181 | 111 | 120 | 285 | 138 | 194 | 196 |
| 1994 | 658 | 168 | 178 | 171 | 171 | 153 | 142 | 187 | 172 | 134 | 519 | 293 | 246 |
| 1995 | 292 | 159 | 315 | 270 | 189 | 100 | 80 | 165 | 442 | 324 | 288 | 689 | 277 |
| 1996 | 274 | 238 | 158 | 312 | 158 | 133 | 60 | 71 | 199 | 531 | 194 | 217 | 212 |
| 1997 | 119 | 138 | 113 | 264 | 142 | 109 | 83 | 226 | 105 | 199 | 326 | 396 | 185 |
| 1998 | 267 | 400 | 381 | 276 | 198 | 219 | 252 | 180 | 215 | 390 | 180 | 181 | 261 |
| 1999 | 152 | 123 | 244 | 248 | 279 | 163 | 126 | 82 | 152 | 291 | 680 | 129 | 222 |
| 2000 | 155 | 144 | 106 | 144 | 242 | 390 | 220 | 117 | 215 | 307 | 160 | 338 | 212 |
| 2001 | 192 | 116 | 131 | 103 | 106 | 210 | 100 | 131 | 115 | 201 | 271 | 408 | 174 |
| 2002 | 271 | 94 | 150 | 110 | 110 | 222 | 116 | 191 | 367 | 177 | 215 | 312 | 195 |
| 2003 | 165 | 180 | 105 | 57 | 168 | 247 | 134 | 101 | 202 | 207 | 280 | 271 | 176 |
| 2004 | 302 | 278 | 239 | 111 | 237 | 275 | 123 | 145 | 177 | 174 | 306 | 186 | 212 |
| 2005 | 287 | 161 | 248 | 111 | 153 | 113 | 117 | 176 | 235 | 139 | 155 | 165 | 172 |
| 2006 | 191 | 99 | 118 | 215 | 167 | 132 | 102 | 101 | 228 | 255 | 333 | 271 | 184 |
| 2007 | 194 | 139 | 154 | 85 | 215 | 188 | 125 | 153 | 155 | 256 | 179 | 280 | 178 |
| 2008 | 205 | 168 | 164 | 97 | 111 | 145 | | | | | | | 148 |
| Min. | 89 | 75 | 85 | 57 | 65 | 49 | 44 | 52 | 49 | 95 | 105 | 129 | 125 |
| Mean | 233 | 201 | 204 | 187 | 179 | 147 | 118 | 134 | 182 | 250 | 268 | 267 | 198 |
| Max. | 658 | 615 | 381 | 407 | 343 | 390 | 252 | 344 | 576 | 535 | 680 | 689 | 277 |

Table A.13 Monthly means 1931 to 2008 – SPECTRA Lake Wakatipu Inflow (m³/s)

| Year | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Mean |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| 1931 | | | | | | | 109 | 84 | 85 | 249 | 226 | 200 | 159 |
| 1932 | 233 | 172 | 97 | 126 | 71 | 52 | 38 | 46 | 92 | 149 | 214 | 175 | 122 |
| 1933 | 196 | 299 | 208 | 292 | 269 | 66 | 107 | 126 | 105 | 201 | 148 | 189 | 183 |
| 1934 | 169 | 124 | 147 | 247 | 231 | 89 | 93 | 131 | 185 | 219 | 159 | 171 | 164 |
| 1935 | 335 | 155 | 196 | 217 | 154 | 111 | 60 | 72 | 52 | 156 | 121 | 186 | 152 |
| 1936 | 123 | 134 | 119 | 205 | 162 | 62 | 78 | 160 | 184 | 310 | 271 | 196 | 167 |
| 1937 | 219 | 163 | 180 | 231 | 147 | 76 | 68 | 75 | 84 | 93 | 146 | 160 | 137 |
| 1938 | 201 | 138 | 161 | 144 | 84 | 107 | 65 | 109 | 130 | 206 | 193 | 211 | 146 |
| 1939 | 140 | 177 | 100 | 121 | 113 | 140 | 99 | 57 | 147 | 139 | 239 | 243 | 142 |
| 1940 | 156 | 308 | 201 | 145 | 179 | 120 | 62 | 62 | 120 | 269 | 197 | 190 | 167 |
| 1941 | 204 | 165 | 141 | 149 | 127 | 106 | 85 | 56 | 83 | 89 | 273 | 177 | 137 |
| 1942 | 214 | 136 | 176 | 236 | 235 | 116 | 145 | 106 | 183 | 300 | 251 | 201 | 192 |
| 1943 | 207 | 224 | 220 | 170 | 131 | 82 | 80 | 64 | 114 | 134 | 212 | 206 | 153 |
| 1944 | 171 | 240 | 163 | 214 | 107 | 122 | 121 | 80 | 102 | 224 | 218 | 208 | 164 |
| 1945 | 262 | 272 | 293 | 205 | 123 | 70 | 71 | 112 | 171 | 170 | 373 | 219 | 194 |
| 1946 | 272 | 300 | 162 | 104 | 84 | 62 | 98 | 155 | 207 | 350 | 148 | 288 | 186 |
| 1947 | 169 | 152 | 100 | 66 | 77 | 123 | 91 | 83 | 144 | 208 | 193 | 198 | 133 |
| 1948 | 156 | 110 | 151 | 89 | 121 | 100 | 100 | 84 | 161 | 291 | 326 | 303 | 166 |
| 1949 | 183 | 327 | 324 | 226 | 113 | 67 | 140 | 129 | 105 | 256 | 162 | 187 | 184 |
| 1950 | 262 | 121 | 99 | 83 | 179 | 99 | 105 | 93 | 139 | 123 | 118 | 206 | 136 |
| 1951 | 114 | 95 | 80 | 104 | 73 | 56 | 170 | 79 | 158 | 174 | 229 | 165 | 125 |
| 1952 | 213 | 271 | 163 | 111 | 142 | 113 | 78 | 36 | 128 | 215 | 115 | 119 | 142 |
| 1953 | 90 | 77 | 128 | 186 | 147 | 88 | 86 | 121 | 145 | 92 | 231 | 240 | 136 |
| 1954 | 166 | 167 | 216 | 114 | 53 | 137 | 129 | 93 | 97 | 192 | 232 | 155 | 146 |
| 1955 | 177 | 206 | 168 | 124 | 236 | 137 | 56 | 88 | 162 | 127 | 135 | 180 | 149 |
| 1956 | 127 | 78 | 85 | 196 | 138 | 153 | 123 | 83 | 111 | 138 | 196 | 231 | 138 |
| 1957 | 208 | 157 | 155 | 183 | 178 | 124 | 114 | 80 | 64 | 184 | 473 | 400 | 194 |
| 1958 | 268 | 559 | 257 | 235 | 345 | 164 | 45 | 58 | 71 | 227 | 192 | 186 | 215 |
| 1959 | 127 | 128 | 95 | 81 | 64 | 122 | 52 | 43 | 186 | 127 | 261 | 202 | 123 |
| 1960 | 174 | 181 | 117 | 76 | 109 | 104 | 97 | 168 | 127 | 118 | 117 | 128 | 126 |
| 1961 | 96 | 107 | 144 | 182 | 68 | 106 | 110 | 98 | 97 | 249 | 212 | 176 | 137 |
| 1962 | 193 | 117 | 95 | 80 | 150 | 133 | 170 | 128 | 134 | 212 | 172 | 118 | 142 |
| 1963 | 128 | 174 | 160 | 100 | 166 | 114 | 58 | 115 | 156 | 185 | 192 | 132 | 140 |
| 1964 | 222 | 128 | 209 | 118 | 224 | 74 | 130 | 125 | 161 | 174 | 228 | 311 | 176 |
| 1965 | 292 | 141 | 218 | 122 | 163 | 153 | 93 | 68 | 142 | 211 | 322 | 275 | 184 |
| 1966 | 263 | 240 | 146 | 223 | 80 | 98 | 69 | 62 | 90 | 99 | 174 | 265 | 150 |
| 1967 | 247 | 242 | 313 | 324 | 209 | 85 | 108 | 192 | 118 | 183 | 311 | 386 | 227 |
| 1968 | 186 | 216 | 409 | 127 | 237 | 83 | 67 | 112 | 160 | 316 | 291 | 283 | 208 |
| 1969 | 209 | 139 | 208 | 189 | 114 | 82 | 97 | 130 | 428 | 164 | 197 | 342 | 192 |

| Year | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Mean |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| 1970 | 238 | 170 | 173 | 154 | 68 | 76 | 171 | 238 | 421 | 242 | 284 | 277 | 209 |
| 1971 | 151 | 132 | 127 | 108 | 113 | 113 | 65 | 109 | 265 | 295 | 226 | 256 | 163 |
| 1972 | 196 | 108 | 317 | 226 | 180 | 93 | 126 | 72 | 349 | 218 | 307 | 142 | 195 |
| 1973 | 135 | 162 | 133 | 244 | 246 | 175 | 79 | 81 | 135 | 266 | 274 | 152 | 173 |
| 1974 | 116 | 205 | 178 | 139 | 69 | 87 | 128 | 70 | 93 | 183 | 179 | 186 | 136 |
| 1975 | 140 | 224 | 260 | 345 | 288 | 158 | 127 | 200 | 154 | 228 | 201 | 199 | 210 |
| 1976 | 168 | 102 | 141 | 91 | 182 | 195 | 96 | 83 | 69 | 102 | 142 | 276 | 138 |
| 1977 | 206 | 200 | 141 | 202 | 164 | 138 | 79 | 57 | 93 | 231 | 251 | 193 | 163 |
| 1978 | 196 | 133 | 199 | 218 | 248 | 176 | 91 | 230 | 144 | 330 | 264 | 191 | 202 |
| 1979 | 332 | 267 | 184 | 141 | 232 | 135 | 110 | 100 | 208 | 254 | 264 | 379 | 217 |
| 1980 | 326 | 245 | 189 | 153 | 185 | 192 | 145 | 274 | 302 | 300 | 262 | 286 | 238 |
| 1981 | 174 | 190 | 259 | 188 | 171 | 135 | 112 | 77 | 142 | 300 | 188 | 308 | 187 |
| 1982 | 339 | 302 | 297 | 115 | 316 | 144 | 81 | 145 | 147 | 147 | 457 | 314 | 233 |
| 1983 | 510 | 164 | 283 | 207 | 259 | 142 | 150 | 170 | 256 | 286 | 298 | 234 | 248 |
| 1984 | 331 | 250 | 248 | 163 | 166 | 119 | 135 | 165 | 147 | 313 | 267 | 384 | 225 |
| 1985 | 323 | 152 | 124 | 174 | 141 | 138 | 120 | 134 | 143 | 120 | 189 | 207 | 164 |
| 1986 | 250 | 150 | 154 | 196 | 132 | 262 | 111 | 106 | 116 | 214 | 173 | 223 | 174 |
| 1987 | 257 | 245 | 302 | 206 | 191 | 249 | 102 | 116 | 162 | 309 | 197 | 181 | 209 |
| 1988 | 209 | 194 | 151 | 128 | 91 | 172 | 160 | 172 | 316 | 493 | 327 | 360 | 231 |
| 1989 | 184 | 150 | 198 | 128 | 103 | 176 | 120 | 121 | 71 | 127 | 204 | 250 | 153 |
| 1990 | 197 | 130 | 176 | 157 | 298 | 157 | 159 | 122 | 68 | 156 | 136 | 342 | 176 |
| 1991 | 281 | 304 | 109 | 181 | 88 | 91 | 65 | 320 | 210 | 266 | 156 | 193 | 188 |
| 1992 | 201 | 192 | 149 | 132 | 81 | 58 | 156 | 142 | 72 | 267 | 271 | 180 | 158 |
| 1993 | 299 | 194 | 127 | 112 | 172 | 303 | 188 | 120 | 124 | 246 | 131 | 201 | 185 |
| 1994 | 544 | 227 | 171 | 167 | 186 | 150 | 166 | 178 | 153 | 129 | 454 | 307 | 236 |
| 1995 | 278 | 169 | 312 | 222 | 196 | 116 | 83 | 174 | 378 | 286 | 259 | 554 | 253 |
| 1996 | 284 | 174 | 116 | 273 | 161 | 183 | 67 | 71 | 183 | 437 | 169 | 191 | 192 |
| 1997 | 134 | 168 | 120 | 238 | 156 | 94 | 92 | 211 | 103 | 194 | 353 | 358 | 185 |
| 1998 | 243 | 338 | 337 | 284 | 159 | 196 | 185 | 177 | 197 | 363 | 179 | 169 | 235 |
| 1999 | 161 | 132 | 193 | 193 | 233 | 151 | 128 | 92 | 134 | 239 | 599 | 153 | 201 |
| 2000 | 156 | 159 | 111 | 125 | 206 | 324 | 181 | 124 | 200 | 330 | 162 | 293 | 198 |
| 2001 | 193 | 124 | 135 | 108 | 98 | 176 | 93 | 132 | 120 | 172 | 228 | 295 | 156 |
| 2002 | 224 | 104 | 145 | 109 | 111 | 228 | 114 | 170 | 332 | 189 | 242 | 311 | 190 |
| 2003 | 175 | 180 | 111 | 64 | 158 | 232 | 141 | 98 | 194 | 195 | 277 | 258 | 173 |
| 2004 | 245 | 226 | 197 | 110 | 200 | 259 | 118 | 140 | 165 | 163 | 272 | 183 | 190 |
| 2005 | 258 | 178 | 236 | 105 | 137 | 95 | 113 | 143 | 148 | 123 | 153 | 185 | 156 |
| 2006 | 226 | 108 | 135 | 186 | 134 | 107 | 93 | 102 | 217 | 229 | 286 | 244 | 172 |
| 2007 | 191 | 138 | 176 | 85 | 180 | 142 | 110 | 160 | 146 | 256 | 188 | 212 | 166 |
| 2008 | 172 | 131 | 126 | 63 | 73 | 102 | | | | | | | 111 |
| Min. | 90 | 77 | 80 | 63 | 53 | 52 | 38 | 36 | 52 | 89 | 115 | 118 | 122 |
| Mean | 216 | 185 | 180 | 164 | 158 | 132 | 107 | 119 | 158 | 217 | 233 | 234 | 176 |
| Max. | 544 | 559 | 409 | 345 | 345 | 324 | 188 | 320 | 428 | 493 | 599 | 554 | 253 |

Table A.14 Monthly means 1931 to 2008 – M-co Lake Wakatipu Inflow (m³/s)

| Year | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Mean |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| 1931 | | | | | | | 109 | 83 | 88 | 227 | 225 | 201 | 155 |
| 1932 | 230 | 178 | 105 | 121 | 75 | 54 | 45 | 50 | 91 | 143 | 200 | 182 | 123 |
| 1933 | 193 | 281 | 216 | 282 | 271 | 91 | 106 | 123 | 105 | 190 | 150 | 184 | 182 |
| 1934 | 171 | 129 | 141 | 236 | 233 | 103 | 92 | 125 | 175 | 218 | 159 | 169 | 163 |
| 1935 | 316 | 176 | 185 | 223 | 159 | 115 | 70 | 73 | 55 | 145 | 121 | 177 | 151 |
| 1936 | 130 | 132 | 124 | 192 | 165 | 68 | 76 | 149 | 180 | 298 | 269 | 205 | 166 |
| 1937 | 218 | 167 | 179 | 227 | 155 | 82 | 68 | 73 | 82 | 91 | 137 | 158 | 136 |
| 1938 | 199 | 141 | 159 | 146 | 87 | 103 | 68 | 98 | 134 | 198 | 193 | 211 | 145 |
| 1939 | 146 | 167 | 112 | 115 | 112 | 136 | 103 | 60 | 136 | 137 | 231 | 238 | 141 |
| 1940 | 163 | 291 | 212 | 149 | 176 | 125 | 66 | 63 | 112 | 239 | 213 | 193 | 166 |
| 1941 | 200 | 171 | 147 | 142 | 120 | 113 | 86 | 57 | 79 | 88 | 246 | 192 | 136 |
| 1942 | 203 | 146 | 168 | 237 | 229 | 126 | 145 | 105 | 172 | 293 | 252 | 205 | 190 |
| 1943 | 205 | 224 | 219 | 166 | 140 | 84 | 78 | 64 | 107 | 130 | 203 | 205 | 152 |
| 1944 | 172 | 230 | 174 | 207 | 115 | 119 | 119 | 84 | 98 | 208 | 216 | 213 | 163 |
| 1945 | 252 | 271 | 287 | 220 | 127 | 73 | 69 | 108 | 163 | 169 | 343 | 242 | 193 |
| 1946 | 258 | 309 | 170 | 107 | 85 | 63 | 93 | 149 | 199 | 328 | 170 | 275 | 183 |
| 1947 | 178 | 155 | 105 | 68 | 74 | 113 | 93 | 82 | 133 | 201 | 198 | 194 | 133 |
| 1948 | 161 | 113 | 143 | 96 | 111 | 103 | 99 | 84 | 147 | 260 | 345 | 296 | 163 |
| 1949 | 195 | 304 | 316 | 244 | 121 | 71 | 133 | 122 | 113 | 235 | 169 | 180 | 183 |
| 1950 | 261 | 129 | 102 | 85 | 158 | 107 | 102 | 103 | 119 | 125 | 119 | 194 | 134 |
| 1951 | 122 | 94 | 80 | 100 | 72 | 59 | 154 | 90 | 147 | 171 | 227 | 169 | 124 |
| 1952 | 215 | 260 | 156 | 123 | 140 | 112 | 80 | 41 | 115 | 206 | 122 | 120 | 140 |
| 1953 | 90 | 77 | 119 | 168 | 157 | 92 | 85 | 113 | 144 | 92 | 213 | 241 | 133 |
| 1954 | 175 | 168 | 207 | 136 | 60 | 139 | 126 | 93 | 99 | 176 | 229 | 163 | 147 |
| 1955 | 176 | 198 | 171 | 129 | 221 | 145 | 62 | 85 | 150 | 131 | 131 | 179 | 148 |
| 1956 | 128 | 82 | 83 | 178 | 146 | 162 | 142 | 102 | 114 | 136 | 191 | 223 | 141 |
| 1957 | 210 | 159 | 158 | 174 | 186 | 118 | 130 | 92 | 65 | 172 | 425 | 411 | 192 |
| 1958 | 287 | 516 | 289 | 245 | 324 | 195 | 43 | 52 | 70 | 208 | 196 | 189 | 216 |
| 1959 | 131 | 128 | 98 | 79 | 66 | 117 | 52 | 50 | 169 | 136 | 243 | 205 | 122 |
| 1960 | 174 | 179 | 123 | 79 | 107 | 100 | 119 | 148 | 128 | 116 | 119 | 123 | 126 |
| 1961 | 99 | 102 | 140 | 172 | 77 | 105 | 112 | 96 | 94 | 228 | 215 | 185 | 135 |
| 1962 | 188 | 123 | 95 | 78 | 142 | 132 | 165 | 132 | 136 | 196 | 181 | 121 | 141 |
| 1963 | 122 | 150 | 134 | 81 | 136 | 88 | 42 | 94 | 154 | 155 | 172 | 107 | 119 |
| 1964 | 197 | 105 | 182 | 96 | 198 | 51 | 100 | 99 | 139 | 147 | 206 | 251 | 148 |
| 1965 | 325 | 116 | 192 | 99 | 141 | 134 | 70 | 51 | 123 | 182 | 295 | 248 | 165 |
| 1966 | 235 | 212 | 121 | 197 | 63 | 87 | 52 | 47 | 76 | 82 | 157 | 230 | 129 |
| 1967 | 213 | 224 | 286 | 301 | 185 | 62 | 92 | 170 | 92 | 159 | 283 | 361 | 202 |
| 1968 | 159 | 194 | 383 | 105 | 208 | 62 | 51 | 93 | 144 | 281 | 264 | 255 | 184 |
| 1969 | 183 | 110 | 188 | 163 | 91 | 63 | 78 | 114 | 401 | 138 | 172 | 315 | 168 |

| Year | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Mean |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| 1970 | 206 | 137 | 145 | 131 | 50 | 59 | 149 | 214 | 406 | 213 | 258 | 246 | 185 |
| 1971 | 126 | 107 | 106 | 87 | 95 | 103 | 45 | 89 | 240 | 272 | 190 | 238 | 142 |
| 1972 | 171 | 83 | 294 | 193 | 154 | 71 | 105 | 60 | 330 | 195 | 295 | 119 | 173 |
| 1973 | 119 | 142 | 117 | 224 | 219 | 130 | 62 | 70 | 116 | 251 | 256 | 128 | 153 |
| 1974 | 104 | 188 | 165 | 116 | 55 | 77 | 112 | 56 | 80 | 166 | 160 | 165 | 120 |
| 1975 | 124 | 206 | 249 | 336 | 278 | 136 | 115 | 183 | 137 | 212 | 190 | 179 | 195 |
| 1976 | 146 | 81 | 123 | 79 | 171 | 169 | 80 | 69 | 57 | 90 | 127 | 258 | 121 |
| 1977 | 190 | 180 | 123 | 182 | 149 | 118 | 64 | 47 | 87 | 213 | 234 | 175 | 146 |
| 1978 | 177 | 116 | 173 | 211 | 239 | 148 | 77 | 214 | 126 | 319 | 245 | 168 | 185 |
| 1979 | 218 | 246 | 165 | 124 | 212 | 117 | 94 | 84 | 189 | 236 | 258 | 398 | 195 |
| 1980 | 316 | 234 | 176 | 141 | 174 | 180 | 137 | 264 | 299 | 297 | 252 | 272 | 228 |
| 1981 | 160 | 179 | 249 | 174 | 157 | 124 | 101 | 70 | 132 | 291 | 174 | 298 | 176 |
| 1982 | 320 | 293 | 289 | 106 | 310 | 132 | 72 | 127 | 141 | 135 | 478 | 308 | 226 |
| 1983 | 554 | 150 | 271 | 196 | 246 | 129 | 143 | 164 | 251 | 289 | 294 | 221 | 243 |
| 1984 | 326 | 235 | 235 | 149 | 155 | 106 | 118 | 159 | 133 | 325 | 257 | 446 | 221 |
| 1985 | 369 | 138 | 112 | 162 | 126 | 124 | 106 | 136 | 128 | 106 | 181 | 191 | 157 |
| 1986 | 244 | 133 | 139 | 176 | 118 | 256 | 96 | 93 | 104 | 203 | 156 | 206 | 160 |
| 1987 | 241 | 233 | 296 | 217 | 173 | 242 | 87 | 102 | 144 | 315 | 186 | 162 | 200 |
| 1988 | 193 | 176 | 135 | 113 | 82 | 156 | 142 | 156 | 310 | 546 | 361 | 357 | 228 |
| 1989 | 167 | 132 | 180 | 113 | 91 | 160 | 105 | 107 | 59 | 115 | 191 | 237 | 138 |
| 1990 | 181 | 114 | 160 | 141 | 284 | 141 | 144 | 107 | 60 | 142 | 120 | 352 | 163 |
| 1991 | 268 | 286 | 95 | 167 | 74 | 80 | 56 | 320 | 198 | 253 | 139 | 175 | 175 |
| 1992 | 184 | 176 | 134 | 115 | 70 | 51 | 142 | 125 | 61 | 265 | 268 | 161 | 146 |
| 1993 | 279 | 170 | 111 | 98 | 156 | 325 | 173 | 108 | 104 | 263 | 115 | 189 | 174 |
| 1994 | 666 | 233 | 159 | 150 | 172 | 134 | 156 | 174 | 141 | 114 | 537 | 354 | 249 |
| 1995 | 269 | 153 | 315 | 224 | 176 | 104 | 74 | 162 | 415 | 297 | 253 | 680 | 261 |
| 1996 | 303 | 157 | 100 | 258 | 146 | 168 | 55 | 62 | 156 | 518 | 159 | 173 | 188 |
| 1997 | 119 | 150 | 106 | 220 | 141 | 79 | 82 | 204 | 88 | 178 | 361 | 388 | 176 |
| 1998 | 209 | 308 | 294 | 213 | 153 | 169 | 194 | 138 | 165 | 300 | 138 | 139 | 201 |
| 1999 | 117 | 95 | 188 | 191 | 214 | 125 | 97 | 63 | 117 | 224 | 524 | 99 | 171 |
| 2000 | 120 | 111 | 82 | 111 | 187 | 300 | 169 | 90 | 165 | 237 | 123 | 260 | 163 |
| 2001 | 148 | 89 | 101 | 79 | 81 | 161 | 77 | 101 | 88 | 155 | 209 | 314 | 134 |
| 2002 | 208 | 73 | 116 | 84 | 85 | 171 | 89 | 147 | 283 | 136 | 166 | 240 | 150 |
| 2003 | 127 | 139 | 81 | 44 | 130 | 190 | 103 | 77 | 155 | 159 | 216 | 208 | 136 |
| 2004 | 233 | 214 | 184 | 86 | 182 | 211 | 94 | 111 | 137 | 134 | 236 | 143 | 164 |
| 2005 | 221 | 124 | 191 | 86 | 117 | 87 | 90 | 135 | 181 | 107 | 119 | 127 | 132 |
| 2006 | 147 | 76 | 91 | 166 | 128 | 101 | 78 | 77 | 175 | 197 | 256 | 209 | 142 |
| 2007 | 150 | 107 | 119 | 66 | 165 | 145 | 96 | 117 | 119 | 197 | 138 | 216 | 137 |
| 2008 | 158 | 130 | 126 | 75 | 85 | 112 | | | | | | | 114 |
| Min. | 90 | 73 | 80 | 44 | 50 | 51 | 42 | 41 | 55 | 82 | 115 | 99 | 119 |
| Mean | 206 | 172 | 168 | 153 | 148 | 123 | 98 | 109 | 147 | 204 | 221 | 226 | 165 |
| Max. | 666 | 516 | 383 | 336 | 324 | 325 | 194 | 320 | 415 | 546 | 537 | 680 | 261 |

Table A.15 Monthly means 1931 to 2008 – SPECTRA Lake Hawea Inflow (m³/s)

| Year | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Mean |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| 1931 | | | | | | | 42 | 36 | 36 | 107 | 71 | 73 | 61 |
| 1932 | 52 | 51 | 41 | 55 | 30 | 10 | 19 | 20 | 32 | 72 | 85 | 69 | 45 |
| 1933 | 51 | 112 | 82 | 122 | 81 | 32 | 72 | 42 | 50 | 82 | 55 | 75 | 71 |
| 1934 | 55 | 39 | 37 | 99 | 98 | 49 | 35 | 68 | 64 | 134 | 62 | 55 | 66 |
| 1935 | 88 | 63 | 69 | 62 | 61 | 53 | 26 | 37 | 25 | 62 | 62 | 67 | 56 |
| 1936 | 39 | 63 | 43 | 78 | 47 | 29 | 41 | 90 | 84 | 154 | 146 | 91 | 75 |
| 1937 | 78 | 60 | 53 | 102 | 85 | 58 | 26 | 36 | 42 | 41 | 54 | 60 | 58 |
| 1938 | 81 | 54 | 59 | 86 | 42 | 52 | 31 | 61 | 61 | 83 | 84 | 89 | 65 |
| 1939 | 45 | 46 | 37 | 41 | 53 | 68 | 30 | 24 | 92 | 55 | 91 | 88 | 56 |
| 1940 | 79 | 100 | 84 | 49 | 94 | 60 | 30 | 29 | 44 | 125 | 86 | 76 | 71 |
| 1941 | 55 | 45 | 52 | 47 | 44 | 64 | 58 | 24 | 27 | 33 | 105 | 79 | 53 |
| 1942 | 82 | 40 | 56 | 105 | 118 | 43 | 68 | 36 | 85 | 168 | 95 | 88 | 82 |
| 1943 | 68 | 69 | 82 | 82 | 58 | 47 | 41 | 28 | 58 | 40 | 33 | 38 | 54 |
| 1944 | 72 | 90 | 72 | 88 | 60 | 39 | 52 | 42 | 21 | 96 | 95 | 87 | 68 |
| 1945 | 126 | 130 | 109 | 80 | 39 | 25 | 23 | 60 | 113 | 68 | 164 | 100 | 86 |
| 1946 | 87 | 92 | 51 | 28 | 36 | 27 | 32 | 74 | 106 | 139 | 57 | 101 | 69 |
| 1947 | 61 | 46 | 28 | 22 | 23 | 38 | 36 | 35 | 56 | 102 | 77 | 74 | 50 |
| 1948 | 52 | 47 | 41 | 32 | 42 | 40 | 38 | 24 | 55 | 130 | 149 | 95 | 62 |
| 1949 | 67 | 132 | 95 | 84 | 70 | 40 | 76 | 65 | 39 | 122 | 63 | 80 | 77 |
| 1950 | 125 | 42 | 33 | 28 | 64 | 35 | 56 | 61 | 56 | 53 | 48 | 84 | 57 |
| 1951 | 36 | 35 | 31 | 58 | 35 | 23 | 97 | 32 | 58 | 81 | 116 | 83 | 57 |
| 1952 | 84 | 113 | 48 | 37 | 60 | 44 | 33 | 19 | 48 | 88 | 54 | 54 | 57 |
| 1953 | 29 | 25 | 42 | 115 | 72 | 50 | 36 | 51 | 61 | 38 | 112 | 104 | 61 |
| 1954 | 63 | 66 | 78 | 45 | 28 | 56 | 45 | 43 | 32 | 66 | 86 | 53 | 55 |
| 1955 | 45 | 106 | 59 | 38 | 101 | 77 | 27 | 45 | 54 | 51 | 56 | 60 | 60 |
| 1956 | 47 | 24 | 20 | 76 | 71 | 73 | 44 | 37 | 37 | 64 | 108 | 95 | 58 |
| 1957 | 70 | 49 | 51 | 78 | 82 | 50 | 46 | 31 | 29 | 86 | 160 | 208 | 79 |
| 1958 | 110 | 176 | 101 | 64 | 122 | 58 | 29 | 29 | 28 | 99 | 87 | 102 | 83 |
| 1959 | 46 | 36 | 37 | 35 | 24 | 44 | 20 | 17 | 84 | 51 | 98 | 82 | 48 |
| 1960 | 60 | 56 | 41 | 23 | 57 | 50 | 43 | 62 | 75 | 59 | 57 | 38 | 52 |
| 1961 | 25 | 41 | 55 | 63 | 23 | 48 | 55 | 52 | 44 | 109 | 88 | 61 | 55 |
| 1962 | 60 | 33 | 30 | 23 | 54 | 42 | 87 | 49 | 59 | 122 | 93 | 55 | 59 |
| 1963 | 41 | 68 | 51 | 37 | 57 | 55 | 30 | 52 | 77 | 59 | 59 | 39 | 52 |
| 1964 | 76 | 32 | 54 | 32 | 91 | 25 | 48 | 55 | 61 | 70 | 76 | 102 | 60 |
| 1965 | 147 | 42 | 65 | 36 | 40 | 47 | 26 | 30 | 45 | 64 | 114 | 101 | 63 |
| 1966 | 90 | 81 | 45 | 73 | 26 | 35 | 26 | 31 | 48 | 40 | 72 | 70 | 53 |
| 1967 | 83 | 67 | 114 | 144 | 70 | 40 | 59 | 108 | 60 | 59 | 113 | 130 | 87 |
| 1968 | 55 | 66 | 103 | 42 | 117 | 43 | 34 | 58 | 75 | 126 | 116 | 98 | 78 |
| 1969 | 64 | 37 | 51 | 44 | 45 | 29 | 35 | 48 | 194 | 59 | 68 | 110 | 65 |

| Year | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Mean |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| 1970 | 80 | 35 | 44 | 37 | 21 | 44 | 61 | 108 | 232 | 97 | 103 | 77 | 80 |
| 1971 | 33 | 28 | 25 | 22 | 36 | 46 | 24 | 29 | 75 | 118 | 85 | 90 | 33 |
| 1972 | 51 | 30 | 69 | 55 | 63 | 43 | 54 | 42 | 133 | 95 | 121 | 63 | 51 |
| 1973 | 47 | 27 | 33 | 73 | 62 | 69 | 50 | 64 | 53 | 96 | 130 | 44 | 47 |
| 1974 | 30 | 66 | 55 | 50 | 38 | 47 | 56 | 29 | 31 | 74 | 75 | 53 | 30 |
| 1975 | 33 | 63 | 90 | 115 | 104 | 62 | 70 | 89 | 75 | 95 | 80 | 61 | 33 |
| 1976 | 50 | 37 | 46 | 41 | 69 | 70 | 48 | 46 | 39 | 49 | 44 | 100 | 50 |
| 1977 | 82 | 45 | 37 | 40 | 46 | 37 | 43 | 26 | 45 | 50 | 65 | 59 | 82 |
| 1978 | 54 | 24 | 41 | 46 | 72 | 40 | 30 | 90 | 80 | 115 | 84 | 56 | 54 |
| 1979 | 60 | 69 | 97 | 83 | 90 | 45 | 51 | 58 | 101 | 101 | 107 | 152 | 60 |
| 1980 | 107 | 70 | 60 | 72 | 66 | 60 | 52 | 100 | 106 | 104 | 98 | 79 | 107 |
| 1981 | 42 | 46 | 110 | 64 | 66 | 61 | 54 | 50 | 57 | 104 | 65 | 94 | 42 |
| 1982 | 76 | 66 | 72 | 28 | 112 | 59 | 47 | 75 | 60 | 59 | 152 | 105 | 76 |
| 1983 | 137 | 42 | 56 | 75 | 115 | 58 | 82 | 84 | 109 | 163 | 140 | 96 | 137 |
| 1984 | 104 | 67 | 92 | 45 | 49 | 57 | 91 | 69 | 60 | 145 | 113 | 232 | 104 |
| 1985 | 164 | 45 | 32 | 54 | 52 | 71 | 49 | 91 | 97 | 45 | 101 | 95 | 164 |
| 1986 | 85 | 54 | 67 | 66 | 42 | 107 | 52 | 71 | 50 | 72 | 63 | 69 | 85 |
| 1987 | 88 | 79 | 116 | 87 | 77 | 107 | 47 | 70 | 64 | 119 | 70 | 59 | 88 |
| 1988 | 48 | 50 | 48 | 39 | 40 | 62 | 66 | 92 | 109 | 197 | 124 | 97 | 48 |
| 1989 | 59 | 45 | 85 | 45 | 30 | 67 | 53 | 68 | 56 | 51 | 60 | 113 | 59 |
| 1990 | 68 | 34 | 59 | 46 | 107 | 59 | 54 | 53 | 20 | 70 | 52 | 123 | 68 |
| 1991 | 78 | 89 | 29 | 63 | 23 | 21 | 18 | 127 | 102 | 73 | 46 | 63 | 78 |
| 1992 | 58 | 50 | 33 | 28 | 21 | 18 | 45 | 60 | 21 | 105 | 97 | 55 | 58 |
| 1993 | 74 | 41 | 33 | 38 | 67 | 120 | 55 | 33 | 39 | 98 | 44 | 63 | 74 |
| 1994 | 217 | 48 | 53 | 43 | 51 | 53 | 49 | 59 | 58 | 49 | 186 | 92 | 217 |
| 1995 | 76 | 48 | 94 | 82 | 49 | 30 | 23 | 61 | 161 | 119 | 98 | 241 | 76 |
| 1996 | 78 | 65 | 55 | 108 | 60 | 38 | 16 | 19 | 62 | 157 | 71 | 71 | 78 |
| 1997 | 41 | 37 | 30 | 78 | 40 | 28 | 28 | 87 | 37 | 69 | 106 | 107 | 41 |
| 1998 | 66 | 91 | 103 | 73 | 40 | 62 | 91 | 62 | 70 | 136 | 61 | 51 | 66 |
| 1999 | 30 | 25 | 57 | 72 | 71 | 44 | 43 | 23 | 53 | 92 | 217 | 43 | 30 |
| 2000 | 55 | 37 | 24 | 39 | 66 | 152 | 80 | 44 | 89 | 106 | 47 | 104 | 55 |
| 2001 | 63 | 31 | 27 | 20 | 26 | 61 | 29 | 38 | 34 | 53 | 74 | 138 | 63 |
| 2002 | 86 | 20 | 31 | 29 | 20 | 72 | 38 | 73 | 133 | 63 | 71 | 102 | 86 |
| 2003 | 59 | 54 | 27 | 13 | 50 | 77 | 48 | 27 | 70 | 73 | 87 | 77 | 59 |
| 2004 | 102 | 88 | 74 | 29 | 75 | 86 | 40 | 60 | 58 | 60 | 95 | 60 | 102 |
| 2005 | 88 | 42 | 58 | 25 | 35 | 31 | 29 | 56 | 84 | 45 | 46 | 48 | 88 |
| 2006 | 53 | 20 | 26 | 54 | 51 | 45 | 32 | 32 | 72 | 89 | 116 | 95 | 53 |
| 2007 | 56 | 31 | 31 | 19 | 49 | 57 | 43 | 43 | 47 | 91 | 54 | 72 | 56 |
| 2008 | 52 | 37 | 34 | 21 | 28 | 43 | | | | | | | 52 |
| Min. | 25 | 20 | 20 | 13 | 20 | 10 | 16 | 17 | 20 | 33 | 33 | 38 | 25 |
| Mean | 70 | 56 | 57 | 57 | 58 | 52 | 45 | 53 | 67 | 88 | 89 | 86 | 70 |
| Max. | 217 | 176 | 116 | 144 | 122 | 152 | 97 | 127 | 232 | 197 | 217 | 241 | 217 |

Table A.16 Monthly means 1931 to 2008 – M-co Lake Hawea Inflow (m³/s)

| Year | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Mean |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| 1931 | | | | | | | 42 | 36 | 39 | 105 | 73 | 68 | 60 |
| 1932 | 59 | 43 | 37 | 54 | 30 | 20 | 20 | 20 | 32 | 72 | 84 | 69 | 45 |
| 1933 | 53 | 110 | 81 | 123 | 81 | 32 | 70 | 43 | 70 | 64 | 54 | 74 | 71 |
| 1934 | 56 | 39 | 37 | 103 | 95 | 47 | 37 | 70 | 66 | 129 | 63 | 56 | 67 |
| 1935 | 86 | 64 | 71 | 61 | 60 | 53 | 26 | 36 | 25 | 62 | 63 | 66 | 56 |
| 1936 | 39 | 60 | 46 | 77 | 47 | 28 | 42 | 89 | 87 | 153 | 146 | 90 | 75 |
| 1937 | 78 | 60 | 53 | 102 | 84 | 59 | 25 | 37 | 43 | 41 | 54 | 60 | 58 |
| 1938 | 80 | 52 | 61 | 85 | 42 | 49 | 34 | 61 | 61 | 83 | 83 | 90 | 65 |
| 1939 | 45 | 45 | 37 | 42 | 52 | 68 | 30 | 24 | 92 | 57 | 92 | 85 | 56 |
| 1940 | 80 | 101 | 82 | 50 | 94 | 60 | 30 | 29 | 44 | 124 | 88 | 75 | 71 |
| 1941 | 55 | 46 | 52 | 47 | 43 | 65 | 58 | 24 | 26 | 34 | 104 | 79 | 53 |
| 1942 | 81 | 40 | 56 | 105 | 118 | 45 | 66 | 36 | 84 | 168 | 97 | 87 | 82 |
| 1943 | 68 | 68 | 83 | 82 | 59 | 46 | 41 | 28 | 58 | 41 | 33 | 39 | 54 |
| 1944 | 73 | 91 | 72 | 88 | 60 | 47 | 54 | 44 | 27 | 93 | 97 | 88 | 69 |
| 1945 | 125 | 133 | 106 | 80 | 40 | 25 | 24 | 60 | 112 | 67 | 164 | 101 | 86 |
| 1946 | 86 | 93 | 51 | 28 | 36 | 27 | 43 | 71 | 106 | 139 | 56 | 102 | 70 |
| 1947 | 61 | 46 | 29 | 22 | 24 | 38 | 36 | 35 | 55 | 104 | 76 | 74 | 50 |
| 1948 | 53 | 46 | 40 | 33 | 42 | 40 | 38 | 24 | 49 | 128 | 156 | 97 | 62 |
| 1949 | 75 | 124 | 94 | 83 | 69 | 40 | 76 | 64 | 39 | 122 | 63 | 80 | 77 |
| 1950 | 124 | 42 | 33 | 28 | 64 | 35 | 56 | 61 | 56 | 52 | 56 | 82 | 58 |
| 1951 | 43 | 21 | 31 | 58 | 35 | 24 | 96 | 32 | 58 | 82 | 116 | 83 | 57 |
| 1952 | 89 | 107 | 49 | 41 | 57 | 44 | 32 | 19 | 48 | 87 | 54 | 55 | 57 |
| 1953 | 28 | 26 | 43 | 115 | 74 | 47 | 36 | 51 | 60 | 38 | 112 | 105 | 61 |
| 1954 | 63 | 65 | 77 | 45 | 28 | 67 | 43 | 42 | 33 | 65 | 86 | 54 | 56 |
| 1955 | 50 | 100 | 59 | 40 | 100 | 76 | 28 | 45 | 53 | 50 | 57 | 61 | 60 |
| 1956 | 45 | 26 | 20 | 77 | 69 | 73 | 44 | 37 | 38 | 64 | 108 | 97 | 58 |
| 1957 | 75 | 48 | 52 | 76 | 83 | 49 | 46 | 32 | 29 | 86 | 162 | 204 | 79 |
| 1958 | 113 | 174 | 100 | 62 | 125 | 58 | 28 | 29 | 29 | 99 | 85 | 103 | 83 |
| 1959 | 47 | 36 | 36 | 35 | 24 | 44 | 20 | 18 | 83 | 51 | 97 | 81 | 48 |
| 1960 | 62 | 55 | 41 | 23 | 57 | 49 | 48 | 59 | 74 | 58 | 59 | 36 | 52 |
| 1961 | 26 | 40 | 55 | 63 | 23 | 48 | 56 | 50 | 45 | 108 | 88 | 63 | 56 |
| 1962 | 59 | 32 | 30 | 26 | 56 | 42 | 86 | 51 | 58 | 119 | 96 | 55 | 59 |
| 1963 | 41 | 68 | 50 | 39 | 56 | 54 | 29 | 50 | 79 | 57 | 60 | 40 | 52 |
| 1964 | 76 | 32 | 56 | 32 | 89 | 29 | 51 | 56 | 61 | 69 | 78 | 103 | 61 |
| 1965 | 144 | 42 | 65 | 35 | 41 | 46 | 27 | 30 | 45 | 64 | 114 | 102 | 63 |
| 1966 | 90 | 80 | 43 | 73 | 28 | 34 | 27 | 31 | 47 | 41 | 80 | 69 | 53 |
| 1967 | 82 | 68 | 114 | 143 | 70 | 40 | 60 | 107 | 57 | 60 | 112 | 130 | 87 |
| 1968 | 56 | 70 | 106 | 43 | 115 | 51 | 51 | 60 | 79 | 125 | 120 | 97 | 81 |
| 1969 | 67 | 43 | 55 | 46 | 43 | 25 | 35 | 52 | 196 | 61 | 70 | 113 | 67 |

| Year | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Mean |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| 1970 | 83 | 38 | 47 | 41 | 24 | 40 | 66 | 108 | 238 | 96 | 103 | 81 | 81 |
| 1971 | 37 | 30 | 29 | 25 | 39 | 52 | 33 | 35 | 78 | 121 | 81 | 92 | 54 |
| 1972 | 52 | 30 | 69 | 53 | 64 | 43 | 54 | 43 | 133 | 95 | 121 | 63 | 68 |
| 1973 | 47 | 27 | 33 | 73 | 61 | 70 | 50 | 68 | 52 | 97 | 130 | 43 | 63 |
| 1974 | 30 | 66 | 56 | 49 | 39 | 47 | 56 | 29 | 31 | 75 | 75 | 52 | 50 |
| 1975 | 33 | 62 | 89 | 116 | 105 | 61 | 72 | 88 | 75 | 95 | 82 | 60 | 78 |
| 1976 | 49 | 38 | 46 | 43 | 70 | 67 | 48 | 46 | 39 | 49 | 44 | 100 | 53 |
| 1977 | 82 | 45 | 37 | 40 | 46 | 37 | 43 | 26 | 45 | 51 | 65 | 58 | 48 |
| 1978 | 54 | 25 | 39 | 49 | 74 | 37 | 31 | 90 | 80 | 116 | 84 | 56 | 61 |
| 1979 | 60 | 68 | 98 | 83 | 89 | 45 | 51 | 58 | 100 | 100 | 105 | 144 | 83 |
| 1980 | 111 | 72 | 60 | 72 | 68 | 58 | 44 | 72 | 104 | 105 | 98 | 91 | 80 |
| 1981 | 52 | 44 | 106 | 65 | 63 | 66 | 54 | 56 | 61 | 100 | 62 | 90 | 68 |
| 1982 | 72 | 64 | 73 | 30 | 114 | 62 | 55 | 80 | 62 | 60 | 143 | 100 | 76 |
| 1983 | 130 | 39 | 53 | 75 | 116 | 58 | 81 | 87 | 107 | 161 | 141 | 96 | 96 |
| 1984 | 103 | 68 | 90 | 46 | 50 | 63 | 93 | 68 | 61 | 143 | 106 | 227 | 94 |
| 1985 | 167 | 48 | 31 | 54 | 51 | 74 | 47 | 93 | 83 | 43 | 97 | 95 | 74 |
| 1986 | 87 | 51 | 67 | 64 | 44 | 107 | 54 | 79 | 52 | 68 | 64 | 58 | 66 |
| 1987 | 91 | 77 | 110 | 93 | 75 | 100 | 34 | 49 | 56 | 113 | 66 | 55 | 77 |
| 1988 | 45 | 45 | 43 | 34 | 36 | 52 | 60 | 74 | 101 | 174 | 109 | 86 | 72 |
| 1989 | 55 | 40 | 66 | 40 | 26 | 61 | 40 | 46 | 34 | 44 | 59 | 104 | 51 |
| 1990 | 66 | 34 | 55 | 44 | 102 | 57 | 55 | 60 | 22 | 69 | 50 | 115 | 61 |
| 1991 | 78 | 89 | 29 | 64 | 23 | 26 | 25 | 123 | 100 | 70 | 47 | 60 | 61 |
| 1992 | 58 | 52 | 33 | 25 | 25 | 24 | 46 | 59 | 25 | 100 | 92 | 52 | 49 |
| 1993 | 72 | 42 | 34 | 38 | 63 | 121 | 64 | 44 | 46 | 97 | 42 | 60 | 60 |
| 1994 | 209 | 53 | 52 | 46 | 52 | 54 | 53 | 61 | 61 | 53 | 177 | 89 | 80 |
| 1995 | 75 | 54 | 91 | 79 | 50 | 35 | 27 | 61 | 155 | 115 | 99 | 237 | 90 |
| 1996 | 83 | 65 | 55 | 108 | 64 | 41 | 24 | 21 | 58 | 153 | 74 | 69 | 68 |
| 1997 | 43 | 38 | 30 | 75 | 44 | 35 | 36 | 83 | 36 | 66 | 100 | 103 | 57 |
| 1998 | 82 | 124 | 118 | 86 | 61 | 68 | 78 | 56 | 67 | 121 | 56 | 56 | 81 |
| 1999 | 47 | 38 | 76 | 77 | 86 | 50 | 39 | 25 | 47 | 90 | 211 | 40 | 69 |
| 2000 | 48 | 45 | 33 | 45 | 75 | 121 | 68 | 36 | 67 | 95 | 50 | 105 | 66 |
| 2001 | 60 | 36 | 41 | 32 | 33 | 65 | 31 | 41 | 36 | 62 | 84 | 126 | 54 |
| 2002 | 84 | 29 | 46 | 34 | 34 | 69 | 36 | 59 | 114 | 55 | 67 | 97 | 60 |
| 2003 | 51 | 56 | 33 | 18 | 52 | 77 | 42 | 31 | 63 | 64 | 87 | 84 | 55 |
| 2004 | 94 | 86 | 74 | 35 | 73 | 85 | 38 | 45 | 55 | 54 | 95 | 58 | 66 |
| 2005 | 89 | 50 | 77 | 34 | 47 | 35 | 36 | 54 | 73 | 43 | 48 | 51 | 53 |
| 2006 | 59 | 31 | 37 | 67 | 52 | 41 | 32 | 31 | 71 | 79 | 103 | 84 | 57 |
| 2007 | 60 | 43 | 48 | 26 | 67 | 58 | 39 | 47 | 48 | 79 | 55 | 87 | 55 |
| 2008 | 64 | 52 | 51 | 30 | 34 | 45 | | | | | | | 46 |
| Min. | 26 | 21 | 20 | 18 | 23 | 20 | 20 | 18 | 22 | 34 | 33 | 36 | 45 |
| Mean | 71 | 58 | 58 | 58 | 60 | 52 | 46 | 52 | 66 | 86 | 89 | 85 | 65 |
| Max. | 209 | 174 | 118 | 143 | 125 | 121 | 96 | 123 | 238 | 174 | 211 | 237 | 96 |

Table A.17 Monthly means 1931 to 2008 – SPECTRA Lake Te Anau Inflow (m³/s)

| Year | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Mean |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| 1931 | | | | | | | 264 | 191 | 175 | 451 | 393 | 302 | 296 |
| 1932 | 445 | 260 | 145 | 238 | 197 | 145 | 109 | 176 | 253 | 271 | 447 | 232 | 243 |
| 1933 | 245 | 484 | 401 | 573 | 552 | 113 | 195 | 266 | 317 | 467 | 256 | 287 | 346 |
| 1934 | 244 | 111 | 308 | 392 | 432 | 171 | 241 | 321 | 416 | 425 | 213 | 202 | 291 |
| 1935 | 594 | 141 | 303 | 262 | 252 | 212 | 141 | 230 | 127 | 384 | 171 | 220 | 255 |
| 1936 | 206 | 234 | 199 | 361 | 288 | 143 | 195 | 424 | 439 | 659 | 546 | 308 | 334 |
| 1937 | 391 | 247 | 250 | 429 | 257 | 139 | 219 | 166 | 188 | 171 | 246 | 206 | 242 |
| 1938 | 309 | 191 | 214 | 161 | 196 | 240 | 118 | 257 | 315 | 490 | 274 | 356 | 261 |
| 1939 | 339 | 367 | 117 | 316 | 256 | 336 | 188 | 143 | 304 | 222 | 377 | 428 | 282 |
| 1940 | 192 | 723 | 361 | 246 | 370 | 278 | 108 | 202 | 257 | 547 | 266 | 295 | 319 |
| 1941 | 277 | 273 | 237 | 284 | 332 | 235 | 203 | 112 | 261 | 208 | 555 | 220 | 266 |
| 1942 | 327 | 199 | 315 | 397 | 450 | 247 | 316 | 290 | 426 | 433 | 418 | 273 | 342 |
| 1943 | 255 | 369 | 354 | 374 | 266 | 217 | 168 | 134 | 224 | 243 | 302 | 213 | 259 |
| 1944 | 186 | 336 | 238 | 322 | 183 | 328 | 255 | 171 | 248 | 433 | 399 | 316 | 284 |
| 1945 | 325 | 275 | 642 | 367 | 200 | 123 | 140 | 287 | 333 | 276 | 660 | 294 | 327 |
| 1946 | 307 | 599 | 180 | 168 | 137 | 131 | 233 | 364 | 448 | 567 | 205 | 503 | 319 |
| 1947 | 192 | 175 | 99 | 117 | 198 | 321 | 207 | 221 | 390 | 330 | 274 | 178 | 225 |
| 1948 | 273 | 157 | 353 | 148 | 242 | 186 | 284 | 181 | 377 | 526 | 450 | 474 | 305 |
| 1949 | 215 | 499 | 432 | 428 | 160 | 105 | 358 | 293 | 208 | 427 | 203 | 339 | 305 |
| 1950 | 459 | 221 | 207 | 200 | 274 | 219 | 252 | 203 | 263 | 187 | 184 | 349 | 252 |
| 1951 | 129 | 122 | 126 | 180 | 172 | 111 | 440 | 145 | 350 | 321 | 393 | 236 | 228 |
| 1952 | 384 | 402 | 314 | 245 | 347 | 297 | 154 | 94 | 281 | 462 | 143 | 142 | 272 |
| 1953 | 74 | 70 | 240 | 430 | 245 | 150 | 232 | 269 | 369 | 169 | 399 | 391 | 254 |
| 1954 | 237 | 251 | 407 | 220 | 89 | 419 | 310 | 223 | 245 | 404 | 326 | 210 | 278 |
| 1955 | 300 | 314 | 279 | 188 | 392 | 304 | 125 | 250 | 375 | 178 | 334 | 225 | 271 |
| 1956 | 160 | 100 | 153 | 372 | 208 | 315 | 216 | 251 | 266 | 240 | 316 | 420 | 252 |
| 1957 | 372 | 218 | 195 | 345 | 402 | 337 | 219 | 195 | 156 | 413 | 703 | 613 | 348 |
| 1958 | 433 | 665 | 446 | 476 | 694 | 432 | 117 | 192 | 229 | 375 | 262 | 240 | 378 |
| 1959 | 152 | 220 | 180 | 202 | 177 | 369 | 208 | 141 | 430 | 233 | 453 | 243 | 250 |
| 1960 | 232 | 316 | 149 | 160 | 185 | 257 | 217 | 363 | 250 | 169 | 185 | 228 | 226 |
| 1961 | 118 | 152 | 230 | 361 | 201 | 285 | 269 | 215 | 211 | 429 | 428 | 250 | 263 |
| 1962 | 294 | 182 | 142 | 146 | 308 | 322 | 365 | 234 | 367 | 308 | 228 | 170 | 256 |
| 1963 | 242 | 273 | 276 | 196 | 314 | 177 | 105 | 249 | 280 | 294 | 365 | 194 | 247 |
| 1964 | 517 | 125 | 370 | 218 | 436 | 116 | 211 | 273 | 308 | 287 | 435 | 393 | 309 |
| 1965 | 269 | 178 | 255 | 183 | 360 | 332 | 136 | 94 | 342 | 339 | 449 | 294 | 269 |
| 1966 | 301 | 323 | 184 | 386 | 117 | 243 | 106 | 131 | 168 | 180 | 237 | 336 | 225 |
| 1967 | 336 | 340 | 357 | 580 | 339 | 91 | 170 | 319 | 225 | 262 | 529 | 492 | 336 |
| 1968 | 236 | 338 | 465 | 179 | 337 | 99 | 138 | 257 | 347 | 590 | 460 | 293 | 312 |
| 1969 | 202 | 111 | 349 | 290 | 153 | 150 | 230 | 288 | 615 | 323 | 171 | 392 | 274 |

| Year | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Mean |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| 1970 | 236 | 221 | 203 | 302 | 65 | 140 | 447 | 427 | 622 | 347 | 335 | 358 | 309 |
| 1971 | 117 | 75 | 148 | 147 | 163 | 197 | 81 | 236 | 529 | 448 | 351 | 286 | 232 |
| 1972 | 280 | 98 | 553 | 312 | 288 | 159 | 244 | 106 | 679 | 391 | 399 | 186 | 308 |
| 1973 | 169 | 224 | 178 | 441 | 423 | 265 | 100 | 134 | 232 | 383 | 417 | 182 | 262 |
| 1974 | 101 | 257 | 208 | 159 | 112 | 224 | 285 | 79 | 152 | 239 | 155 | 179 | 179 |
| 1975 | 167 | 286 | 356 | 599 | 516 | 194 | 318 | 313 | 309 | 343 | 267 | 322 | 333 |
| 1976 | 167 | 124 | 182 | 131 | 350 | 339 | 186 | 124 | 76 | 138 | 181 | 278 | 190 |
| 1977 | 334 | 260 | 198 | 427 | 258 | 258 | 101 | 79 | 181 | 407 | 323 | 202 | 252 |
| 1978 | 227 | 135 | 310 | 271 | 414 | 285 | 132 | 386 | 177 | 401 | 390 | 191 | 278 |
| 1979 | 505 | 385 | 176 | 268 | 303 | 260 | 238 | 137 | 430 | 304 | 283 | 481 | 314 |
| 1980 | 414 | 301 | 278 | 144 | 296 | 230 | 160 | 539 | 525 | 358 | 352 | 288 | 324 |
| 1981 | 174 | 222 | 231 | 319 | 218 | 167 | 185 | 101 | 305 | 435 | 160 | 366 | 240 |
| 1982 | 498 | 386 | 386 | 140 | 531 | 169 | 123 | 323 | 213 | 245 | 756 | 356 | 344 |
| 1983 | 756 | 134 | 443 | 262 | 384 | 257 | 238 | 292 | 458 | 280 | 342 | 299 | 347 |
| 1984 | 558 | 240 | 212 | 324 | 277 | 253 | 217 | 309 | 268 | 527 | 293 | 447 | 328 |
| 1985 | 634 | 134 | 165 | 231 | 225 | 271 | 220 | 230 | 220 | 150 | 165 | 203 | 238 |
| 1986 | 337 | 230 | 221 | 382 | 200 | 438 | 238 | 181 | 226 | 323 | 189 | 312 | 273 |
| 1987 | 342 | 381 | 373 | 284 | 310 | 388 | 211 | 251 | 293 | 485 | 213 | 236 | 314 |
| 1988 | 285 | 250 | 208 | 197 | 184 | 327 | 340 | 321 | 582 | 975 | 440 | 429 | 379 |
| 1989 | 196 | 166 | 289 | 182 | 188 | 307 | 206 | 192 | 95 | 217 | 399 | 353 | 233 |
| 1990 | 290 | 124 | 267 | 290 | 535 | 337 | 264 | 166 | 122 | 283 | 145 | 585 | 286 |
| 1991 | 406 | 421 | 111 | 295 | 181 | 160 | 93 | 573 | 292 | 429 | 204 | 169 | 277 |
| 1992 | 264 | 292 | 269 | 195 | 122 | 120 | 347 | 235 | 91 | 373 | 238 | 156 | 225 |
| 1993 | 452 | 198 | 119 | 153 | 248 | 508 | 298 | 200 | 234 | 417 | 183 | 263 | 273 |
| 1994 | 586 | 185 | 175 | 304 | 394 | 250 | 288 | 374 | 268 | 167 | 687 | 305 | 333 |
| 1995 | 326 | 142 | 478 | 255 | 355 | 175 | 145 | 331 | 618 | 405 | 281 | 600 | 344 |
| 1996 | 272 | 190 | 138 | 410 | 293 | 333 | 92 | 121 | 347 | 581 | 262 | 290 | 277 |
| 1997 | 85 | 189 | 220 | 449 | 237 | 133 | 182 | 437 | 134 | 347 | 601 | 572 | 299 |
| 1998 | 251 | 548 | 526 | 508 | 241 | 332 | 299 | 305 | 357 | 603 | 163 | 163 | 357 |
| 1999 | 164 | 110 | 301 | 289 | 435 | 244 | 238 | 180 | 190 | 353 | 613 | 151 | 273 |
| 2000 | 129 | 216 | 156 | 212 | 421 | 503 | 232 | 219 | 347 | 493 | 173 | 468 | 298 |
| 2001 | 219 | 127 | 195 | 215 | 159 | 362 | 123 | 223 | 192 | 236 | 333 | 335 | 227 |
| 2002 | 179 | 159 | 295 | 166 | 226 | 477 | 232 | 320 | 575 | 310 | 335 | 462 | 312 |
| 2003 | 174 | 255 | 118 | 92 | 327 | 472 | 250 | 231 | 448 | 311 | 477 | 333 | 290 |
| 2004 | 320 | 368 | 287 | 209 | 330 | 515 | 170 | 253 | 335 | 216 | 344 | 210 | 296 |
| 2005 | 285 | 284 | 436 | 185 | 306 | 187 | 252 | 276 | 213 | 159 | 214 | 204 | 250 |
| 2006 | 434 | 126 | 228 | 255 | 195 | 189 | 225 | 230 | 436 | 329 | 420 | 315 | 283 |
| 2007 | 204 | 165 | 265 | 135 | 425 | 215 | 267 | 386 | 294 | 490 | 237 | 214 | 276 |
| 2008 | 203 | 195 | 223 | 105 | 156 | 232 | | | | | | | 186 |
| Min. | 74 | 70 | 99 | 92 | 65 | 91 | 81 | 79 | 76 | 138 | 143 | 142 | 179 |
| Mean | 292 | 251 | 267 | 278 | 286 | 254 | 213 | 242 | 310 | 358 | 337 | 305 | 284 |
| Max. | 756 | 723 | 642 | 599 | 694 | 515 | 447 | 573 | 679 | 975 | 756 | 613 | 379 |

Table A.18 Monthly means 1931 to 2008 – M-co Lake Te Anau Inflow (m³/s)

| Year | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Mean |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| 1931 | | | | | | | 263 | 187 | 175 | 444 | 390 | 307 | 295 |
| 1932 | 444 | 260 | 144 | 232 | 189 | 140 | 103 | 167 | 252 | 279 | 427 | 238 | 239 |
| 1933 | 249 | 486 | 394 | 580 | 546 | 111 | 186 | 268 | 325 | 456 | 259 | 280 | 344 |
| 1934 | 247 | 106 | 300 | 400 | 430 | 174 | 234 | 242 | 366 | 429 | 207 | 198 | 279 |
| 1935 | 590 | 148 | 299 | 266 | 246 | 206 | 137 | 225 | 123 | 385 | 166 | 214 | 252 |
| 1936 | 216 | 218 | 217 | 329 | 297 | 137 | 195 | 419 | 447 | 642 | 545 | 314 | 332 |
| 1937 | 390 | 247 | 259 | 414 | 266 | 128 | 213 | 162 | 185 | 164 | 242 | 202 | 239 |
| 1938 | 310 | 188 | 208 | 159 | 188 | 236 | 115 | 250 | 315 | 493 | 282 | 346 | 258 |
| 1939 | 340 | 365 | 116 | 315 | 254 | 321 | 199 | 132 | 308 | 225 | 378 | 421 | 280 |
| 1940 | 183 | 719 | 358 | 256 | 371 | 277 | 103 | 198 | 254 | 545 | 268 | 295 | 317 |
| 1941 | 284 | 269 | 244 | 268 | 330 | 235 | 201 | 111 | 249 | 211 | 551 | 219 | 264 |
| 1942 | 325 | 190 | 306 | 409 | 453 | 248 | 315 | 283 | 424 | 439 | 420 | 274 | 341 |
| 1943 | 261 | 355 | 357 | 379 | 265 | 208 | 163 | 123 | 229 | 238 | 301 | 211 | 257 |
| 1944 | 189 | 324 | 219 | 337 | 183 | 325 | 258 | 167 | 244 | 431 | 400 | 304 | 281 |
| 1945 | 338 | 301 | 611 | 383 | 191 | 119 | 138 | 282 | 331 | 279 | 659 | 292 | 327 |
| 1946 | 310 | 602 | 172 | 163 | 131 | 128 | 230 | 362 | 447 | 562 | 213 | 495 | 316 |
| 1947 | 195 | 168 | 103 | 108 | 192 | 318 | 205 | 216 | 381 | 343 | 273 | 179 | 223 |
| 1948 | 265 | 146 | 344 | 157 | 232 | 192 | 229 | 128 | 258 | 491 | 471 | 478 | 283 |
| 1949 | 208 | 502 | 433 | 427 | 158 | 105 | 355 | 286 | 208 | 423 | 207 | 331 | 303 |
| 1950 | 463 | 226 | 202 | 196 | 267 | 223 | 249 | 199 | 260 | 187 | 181 | 340 | 250 |
| 1951 | 126 | 118 | 124 | 174 | 158 | 119 | 416 | 162 | 347 | 315 | 398 | 238 | 225 |
| 1952 | 402 | 382 | 314 | 261 | 333 | 291 | 154 | 88 | 306 | 435 | 140 | 133 | 270 |
| 1953 | 74 | 77 | 239 | 410 | 257 | 150 | 222 | 273 | 369 | 165 | 396 | 399 | 253 |
| 1954 | 222 | 260 | 405 | 220 | 87 | 445 | 282 | 210 | 249 | 389 | 340 | 200 | 275 |
| 1955 | 308 | 314 | 279 | 196 | 389 | 297 | 118 | 247 | 371 | 181 | 332 | 227 | 271 |
| 1956 | 150 | 97 | 149 | 365 | 208 | 316 | 214 | 248 | 264 | 236 | 320 | 402 | 248 |
| 1957 | 381 | 222 | 199 | 320 | 421 | 320 | 234 | 191 | 161 | 401 | 699 | 608 | 347 |
| 1958 | 432 | 647 | 451 | 480 | 693 | 423 | 115 | 188 | 171 | 426 | 260 | 241 | 375 |
| 1959 | 136 | 229 | 177 | 200 | 178 | 367 | 207 | 136 | 431 | 232 | 451 | 248 | 248 |
| 1960 | 227 | 315 | 143 | 157 | 179 | 252 | 251 | 330 | 243 | 168 | 185 | 220 | 222 |
| 1961 | 114 | 140 | 229 | 355 | 199 | 289 | 277 | 203 | 207 | 426 | 427 | 258 | 261 |
| 1962 | 290 | 172 | 142 | 152 | 309 | 322 | 361 | 235 | 367 | 306 | 259 | 169 | 257 |
| 1963 | 231 | 268 | 279 | 208 | 302 | 173 | 98 | 234 | 290 | 284 | 374 | 195 | 244 |
| 1964 | 516 | 122 | 368 | 220 | 434 | 115 | 206 | 265 | 315 | 284 | 432 | 396 | 307 |
| 1965 | 269 | 181 | 258 | 189 | 361 | 329 | 139 | 100 | 340 | 340 | 453 | 300 | 272 |
| 1966 | 307 | 315 | 181 | 393 | 128 | 235 | 117 | 131 | 173 | 189 | 248 | 323 | 227 |
| 1967 | 324 | 359 | 360 | 568 | 349 | 92 | 175 | 324 | 215 | 270 | 528 | 497 | 338 |
| 1968 | 237 | 352 | 637 | 185 | 335 | 102 | 142 | 261 | 357 | 573 | 468 | 294 | 329 |
| 1969 | 205 | 118 | 348 | 289 | 157 | 154 | 231 | 308 | 597 | 321 | 179 | 389 | 276 |

| Year | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Mean |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| 1970 | 238 | 222 | 203 | 305 | 75 | 141 | 441 | 434 | 624 | 347 | 332 | 366 | 311 |
| 1971 | 118 | 81 | 153 | 149 | 161 | 207 | 87 | 232 | 530 | 457 | 335 | 306 | 235 |
| 1972 | 278 | 103 | 558 | 308 | 293 | 159 | 248 | 111 | 674 | 377 | 418 | 189 | 310 |
| 1973 | 174 | 224 | 183 | 443 | 418 | 271 | 108 | 144 | 228 | 388 | 410 | 174 | 263 |
| 1974 | 113 | 256 | 210 | 154 | 111 | 220 | 276 | 80 | 153 | 240 | 157 | 173 | 178 |
| 1975 | 168 | 280 | 358 | 593 | 520 | 191 | 319 | 318 | 350 | 339 | 277 | 313 | 336 |
| 1976 | 168 | 123 | 185 | 135 | 361 | 318 | 180 | 122 | 76 | 139 | 179 | 278 | 189 |
| 1977 | 330 | 255 | 192 | 423 | 262 | 250 | 95 | 78 | 186 | 403 | 318 | 196 | 248 |
| 1978 | 222 | 135 | 297 | 280 | 397 | 296 | 142 | 385 | 183 | 405 | 392 | 191 | 278 |
| 1979 | 513 | 388 | 181 | 269 | 305 | 264 | 247 | 142 | 428 | 310 | 293 | 482 | 318 |
| 1980 | 417 | 301 | 282 | 152 | 299 | 233 | 168 | 530 | 531 | 360 | 361 | 289 | 327 |
| 1981 | 171 | 238 | 237 | 320 | 221 | 173 | 188 | 105 | 302 | 470 | 166 | 369 | 247 |
| 1982 | 509 | 398 | 394 | 150 | 527 | 182 | 124 | 311 | 231 | 245 | 759 | 357 | 349 |
| 1983 | 759 | 138 | 446 | 269 | 383 | 263 | 242 | 300 | 462 | 286 | 349 | 302 | 352 |
| 1984 | 565 | 244 | 216 | 323 | 287 | 254 | 209 | 323 | 274 | 531 | 294 | 454 | 332 |
| 1985 | 636 | 137 | 158 | 242 | 229 | 275 | 221 | 230 | 241 | 147 | 165 | 192 | 240 |
| 1986 | 352 | 234 | 224 | 380 | 210 | 444 | 241 | 191 | 226 | 329 | 193 | 313 | 278 |
| 1987 | 326 | 332 | 357 | 303 | 306 | 408 | 213 | 258 | 293 | 493 | 221 | 238 | 312 |
| 1988 | 286 | 252 | 214 | 205 | 187 | 322 | 345 | 329 | 574 | 984 | 443 | 436 | 382 |
| 1989 | 204 | 167 | 279 | 195 | 197 | 309 | 205 | 202 | 92 | 218 | 407 | 356 | 236 |
| 1990 | 297 | 128 | 269 | 292 | 539 | 339 | 276 | 171 | 122 | 285 | 144 | 586 | 289 |
| 1991 | 412 | 421 | 119 | 299 | 179 | 168 | 89 | 579 | 298 | 432 | 210 | 174 | 281 |
| 1992 | 261 | 303 | 269 | 203 | 121 | 121 | 342 | 246 | 93 | 371 | 247 | 155 | 228 |
| 1993 | 458 | 202 | 125 | 153 | 242 | 520 | 298 | 211 | 227 | 431 | 182 | 272 | 277 |
| 1994 | 592 | 189 | 183 | 306 | 396 | 254 | 296 | 376 | 279 | 172 | 686 | 313 | 337 |
| 1995 | 332 | 147 | 476 | 260 | 354 | 185 | 151 | 326 | 627 | 401 | 291 | 605 | 348 |
| 1996 | 278 | 194 | 136 | 413 | 297 | 342 | 92 | 120 | 316 | 614 | 261 | 302 | 280 |
| 1997 | 88 | 189 | 222 | 452 | 243 | 136 | 181 | 440 | 141 | 350 | 603 | 579 | 303 |
| 1998 | 255 | 556 | 526 | 514 | 244 | 339 | 305 | 312 | 360 | 608 | 170 | 167 | 362 |
| 1999 | 163 | 113 | 290 | 304 | 435 | 254 | 243 | 180 | 193 | 352 | 619 | 157 | 276 |
| 2000 | 130 | 223 | 150 | 212 | 420 | 513 | 237 | 230 | 355 | 507 | 166 | 467 | 301 |
| 2001 | 230 | 133 | 190 | 226 | 159 | 358 | 132 | 225 | 190 | 241 | 337 | 343 | 231 |
| 2002 | 190 | 165 | 298 | 172 | 228 | 480 | 239 | 325 | 577 | 314 | 345 | 468 | 317 |
| 2003 | 160 | 232 | 112 | 83 | 338 | 464 | 246 | 231 | 455 | 317 | 484 | 342 | 288 |
| 2004 | 327 | 377 | 296 | 211 | 339 | 513 | 184 | 256 | 340 | 222 | 347 | 219 | 302 |
| 2005 | 289 | 291 | 441 | 193 | 280 | 189 | 257 | 282 | 218 | 165 | 220 | 209 | 253 |
| 2006 | 444 | 140 | 239 | 258 | 200 | 194 | 228 | 233 | 439 | 338 | 424 | 324 | 289 |
| 2007 | 214 | 179 | 273 | 142 | 427 | 223 | 270 | 390 | 298 | 483 | 258 | 218 | 283 |
| 2008 | 215 | 192 | 236 | 111 | 161 | 234 | | | | | | | 192 |
| Min. | 74 | 77 | 103 | 83 | 75 | 92 | 87 | 78 | 76 | 139 | 140 | 133 | 178 |
| Mean | 294 | 252 | 269 | 279 | 286 | 255 | 213 | 240 | 308 | 359 | 340 | 306 | 284 |
| Max. | 759 | 719 | 637 | 593 | 693 | 520 | 441 | 579 | 674 | 984 | 759 | 608 | 382 |

Table A.19 Monthly means 1931 to 2008 – SPECTRA Lake Manapouri Inflow (m³/s)

| Year | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Mean |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| 1931 | | | | | | | 156 | 129 | 115 | 172 | 210 | 194 | 162 |
| 1932 | 208 | 190 | 134 | 108 | 117 | 78 | 57 | 87 | 127 | 100 | 171 | 83 | 121 |
| 1933 | 72 | 160 | 162 | 227 | 267 | 55 | 67 | 118 | 147 | 183 | 105 | 101 | 139 |
| 1934 | 107 | 32 | 151 | 182 | 194 | 67 | 112 | 158 | 203 | 187 | 69 | 66 | 128 |
| 1935 | 192 | 41 | 154 | 113 | 121 | 107 | 66 | 125 | 76 | 187 | 86 | 121 | 117 |
| 1936 | 102 | 117 | 93 | 147 | 141 | 77 | 99 | 189 | 223 | 264 | 195 | 134 | 148 |
| 1937 | 160 | 129 | 141 | 179 | 165 | 88 | 129 | 102 | 101 | 95 | 131 | 110 | 128 |
| 1938 | 129 | 85 | 73 | 38 | 89 | 111 | 93 | 107 | 139 | 216 | 129 | 121 | 111 |
| 1939 | 178 | 149 | 51 | 108 | 122 | 119 | 98 | 91 | 216 | 123 | 175 | 178 | 134 |
| 1940 | 101 | 327 | 156 | 114 | 183 | 144 | 66 | 88 | 124 | 204 | 122 | 127 | 146 |
| 1941 | 105 | 116 | 101 | 158 | 147 | 149 | 98 | 60 | 145 | 107 | 230 | 122 | 128 |
| 1942 | 134 | 96 | 131 | 198 | 178 | 123 | 151 | 141 | 193 | 190 | 174 | 146 | 155 |
| 1943 | 85 | 136 | 177 | 143 | 142 | 99 | 94 | 57 | 126 | 131 | 156 | 91 | 119 |
| 1944 | 89 | 140 | 114 | 154 | 81 | 169 | 114 | 81 | 122 | 199 | 188 | 134 | 132 |
| 1945 | 151 | 115 | 268 | 226 | 117 | 67 | 66 | 131 | 167 | 131 | 256 | 135 | 153 |
| 1946 | 121 | 212 | 62 | 92 | 55 | 54 | 106 | 176 | 242 | 267 | 118 | 233 | 145 |
| 1947 | 108 | 78 | 37 | 34 | 80 | 146 | 112 | 113 | 190 | 176 | 122 | 101 | 108 |
| 1948 | 139 | 76 | 156 | 78 | 123 | 101 | 144 | 92 | 191 | 255 | 187 | 218 | 147 |
| 1949 | 85 | 166 | 209 | 197 | 78 | 49 | 190 | 139 | 113 | 204 | 69 | 140 | 137 |
| 1950 | 191 | 116 | 81 | 88 | 76 | 110 | 139 | 105 | 129 | 93 | 93 | 166 | 116 |
| 1951 | 53 | 41 | 53 | 68 | 113 | 111 | 236 | 126 | 193 | 168 | 181 | 131 | 123 |
| 1952 | 212 | 162 | 151 | 137 | 150 | 167 | 100 | 44 | 147 | 215 | 73 | 67 | 135 |
| 1953 | 24 | 28 | 124 | 214 | 134 | 70 | 130 | 141 | 180 | 100 | 172 | 178 | 125 |
| 1954 | 109 | 113 | 166 | 143 | 51 | 251 | 144 | 129 | 152 | 216 | 146 | 104 | 144 |
| 1955 | 157 | 133 | 106 | 103 | 180 | 183 | 82 | 124 | 190 | 111 | 170 | 84 | 135 |
| 1956 | 60 | 50 | 71 | 138 | 94 | 158 | 132 | 126 | 163 | 120 | 145 | 196 | 121 |
| 1957 | 177 | 100 | 115 | 164 | 227 | 238 | 126 | 111 | 84 | 221 | 346 | 245 | 180 |
| 1958 | 170 | 220 | 172 | 221 | 323 | 214 | 67 | 99 | 124 | 148 | 112 | 105 | 164 |
| 1959 | 72 | 97 | 68 | 104 | 130 | 206 | 135 | 68 | 219 | 141 | 225 | 138 | 133 |
| 1960 | 111 | 170 | 81 | 77 | 72 | 154 | 118 | 182 | 114 | 98 | 102 | 121 | 116 |
| 1961 | 66 | 94 | 110 | 186 | 145 | 188 | 200 | 126 | 98 | 245 | 261 | 106 | 152 |
| 1962 | 135 | 96 | 82 | 93 | 156 | 160 | 172 | 110 | 165 | 147 | 113 | 92 | 127 |
| 1963 | 130 | 135 | 118 | 112 | 169 | 108 | 65 | 139 | 152 | 183 | 223 | 130 | 138 |
| 1964 | 241 | 72 | 169 | 124 | 207 | 91 | 110 | 143 | 169 | 149 | 210 | 173 | 155 |
| 1965 | 100 | 104 | 113 | 94 | 211 | 198 | 57 | 25 | 161 | 182 | 213 | 169 | 136 |
| 1966 | 159 | 142 | 103 | 211 | 93 | 135 | 80 | 79 | 70 | 98 | 114 | 170 | 121 |
| 1967 | 128 | 144 | 145 | 261 | 192 | 59 | 72 | 156 | 120 | 154 | 252 | 229 | 159 |
| 1968 | 133 | 169 | 191 | 96 | 145 | 48 | 108 | 139 | 171 | 252 | 179 | 119 | 146 |
| 1969 | 86 | 63 | 153 | 138 | 73 | 95 | 125 | 133 | 349 | 250 | 134 | 152 | 146 |

| Year | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Mean |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| 1970 | 110 | 79 | 79 | 127 | 40 | 78 | 191 | 183 | 329 | 212 | 112 | 133 | 140 |
| 1971 | 42 | 21 | 71 | 91 | 94 | 87 | 53 | 97 | 177 | 149 | 102 | 58 | 87 |
| 1972 | 66 | 34 | 179 | 135 | 149 | 141 | 133 | 69 | 306 | 199 | 157 | 77 | 137 |
| 1973 | 83 | 104 | 61 | 159 | 191 | 128 | 54 | 65 | 108 | 155 | 144 | 86 | 111 |
| 1974 | 50 | 86 | 63 | 39 | 64 | 101 | 140 | 47 | 75 | 92 | 73 | 57 | 74 |
| 1975 | 74 | 99 | 164 | 222 | 175 | 114 | 137 | 186 | 126 | 120 | 73 | 119 | 134 |
| 1976 | 69 | 60 | 136 | 52 | 169 | 166 | 107 | 72 | 43 | 71 | 104 | 95 | 96 |
| 1977 | 176 | 137 | 75 | 199 | 143 | 120 | 52 | 32 | 81 | 199 | 167 | 84 | 122 |
| 1978 | 110 | 69 | 97 | 90 | 144 | 104 | 80 | 171 | 95 | 153 | 161 | 87 | 114 |
| 1979 | 238 | 150 | 78 | 136 | 132 | 138 | 133 | 84 | 203 | 134 | 100 | 152 | 140 |
| 1980 | 159 | 126 | 134 | 62 | 138 | 123 | 89 | 236 | 228 | 162 | 176 | 124 | 147 |
| 1981 | 95 | 102 | 86 | 145 | 124 | 101 | 111 | 76 | 189 | 230 | 101 | 176 | 128 |
| 1982 | 235 | 165 | 142 | 97 | 238 | 90 | 103 | 197 | 112 | 147 | 355 | 160 | 170 |
| 1983 | 300 | 104 | 195 | 134 | 134 | 137 | 119 | 106 | 189 | 112 | 135 | 153 | 152 |
| 1984 | 242 | 124 | 100 | 192 | 167 | 167 | 112 | 158 | 144 | 235 | 149 | 153 | 162 |
| 1985 | 219 | 84 | 80 | 122 | 115 | 132 | 131 | 118 | 119 | 104 | 87 | 85 | 117 |
| 1986 | 165 | 139 | 121 | 210 | 127 | 188 | 143 | 113 | 149 | 173 | 114 | 145 | 149 |
| 1987 | 161 | 162 | 146 | 159 | 143 | 137 | 136 | 148 | 170 | 246 | 119 | 90 | 151 |
| 1988 | 242 | 148 | 136 | 125 | 134 | 197 | 201 | 171 | 270 | 447 | 266 | 160 | 208 |
| 1989 | 102 | 72 | 141 | 111 | 74 | 135 | 88 | 87 | 47 | 90 | 175 | 145 | 106 |
| 1990 | 147 | 68 | 99 | 146 | 243 | 142 | 110 | 80 | 88 | 151 | 73 | 235 | 132 |
| 1991 | 156 | 200 | 64 | 128 | 132 | 112 | 55 | 201 | 138 | 217 | 146 | 108 | 138 |
| 1992 | 137 | 162 | 176 | 116 | 92 | 73 | 166 | 123 | 76 | 160 | 114 | 79 | 123 |
| 1993 | 230 | 125 | 67 | 85 | 118 | 210 | 157 | 124 | 126 | 200 | 110 | 130 | 140 |
| 1994 | 189 | 78 | 99 | 160 | 190 | 131 | 167 | 191 | 134 | 113 | 267 | 156 | 157 |
| 1995 | 153 | 75 | 190 | 105 | 173 | 104 | 94 | 154 | 263 | 190 | 132 | 213 | 155 |
| 1996 | 126 | 87 | 66 | 160 | 170 | 167 | 78 | 82 | 164 | 215 | 144 | 147 | 134 |
| 1997 | 46 | 88 | 119 | 190 | 137 | 104 | 108 | 203 | 91 | 198 | 294 | 262 | 154 |
| 1998 | 125 | 238 | 245 | 240 | 127 | 161 | 129 | 155 | 189 | 264 | 92 | 89 | 171 |
| 1999 | 76 | 45 | 115 | 133 | 205 | 130 | 125 | 124 | 99 | 145 | 177 | 87 | 122 |
| 2000 | 58 | 79 | 81 | 121 | 203 | 181 | 119 | 135 | 177 | 204 | 117 | 203 | 140 |
| 2001 | 136 | 87 | 81 | 148 | 85 | 174 | 64 | 119 | 117 | 118 | 158 | 138 | 119 |
| 2002 | 88 | 97 | 161 | 116 | 178 | 229 | 128 | 159 | 217 | 156 | 170 | 222 | 160 |
| 2003 | 111 | 133 | 68 | 66 | 179 | 187 | 120 | 113 | 187 | 150 | 234 | 151 | 141 |
| 2004 | 122 | 181 | 129 | 143 | 146 | 222 | 84 | 126 | 179 | 134 | 170 | 132 | 147 |
| 2005 | 158 | 130 | 176 | 105 | 167 | 136 | 160 | 144 | 107 | 88 | 118 | 109 | 133 |
| 2006 | 246 | 70 | 147 | 107 | 101 | 109 | 136 | 143 | 230 | 159 | 198 | 134 | 149 |
| 2007 | 96 | 84 | 117 | 79 | 198 | 116 | 132 | 184 | 142 | 207 | 127 | 107 | 133 |
| 2008 | 90 | 82 | 121 | 56 | 72 | | | | | | | | 85 |
| Min. | 24 | 21 | 37 | 34 | 40 | 48 | 52 | 25 | 43 | 71 | 69 | 57 | 74 |
| Mean | 133 | 114 | 121 | 133 | 142 | 132 | 115 | 123 | 156 | 171 | 157 | 136 | 136 |
| Max. | 300 | 327 | 268 | 261 | 323 | 251 | 236 | 236 | 349 | 447 | 355 | 262 | 208 |

Table A.20 Monthly means 1931 to 2008 – M-co Lake Manapouri Inflow (m³/s)

| Year | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Mean |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| 1931 | | | | | | | 130 | 69 | 62 | 250 | 202 | 146 | 143 |
| 1932 | 250 | 122 | 50 | 113 | 92 | 58 | 38 | 71 | 112 | 88 | 169 | 64 | 102 |
| 1933 | 52 | 166 | 167 | 255 | 310 | 31 | 47 | 109 | 145 | 181 | 88 | 89 | 136 |
| 1934 | 93 | 22 | 156 | 194 | 197 | 58 | 98 | 116 | 175 | 204 | 44 | 50 | 118 |
| 1935 | 214 | 34 | 148 | 108 | 106 | 83 | 50 | 104 | 51 | 185 | 65 | 95 | 104 |
| 1936 | 94 | 90 | 80 | 131 | 130 | 51 | 85 | 191 | 229 | 318 | 213 | 128 | 145 |
| 1937 | 157 | 113 | 131 | 176 | 151 | 72 | 110 | 84 | 77 | 73 | 116 | 94 | 113 |
| 1938 | 123 | 69 | 54 | 22 | 62 | 97 | 82 | 97 | 131 | 232 | 111 | 112 | 100 |
| 1939 | 169 | 149 | 26 | 104 | 111 | 115 | 80 | 68 | 210 | 109 | 173 | 174 | 123 |
| 1940 | 80 | 375 | 152 | 114 | 179 | 134 | 54 | 60 | 112 | 218 | 116 | 111 | 141 |
| 1941 | 92 | 108 | 90 | 146 | 145 | 130 | 81 | 40 | 126 | 87 | 251 | 103 | 116 |
| 1942 | 133 | 81 | 131 | 197 | 184 | 114 | 144 | 133 | 189 | 200 | 182 | 132 | 152 |
| 1943 | 106 | 130 | 166 | 147 | 133 | 83 | 77 | 45 | 109 | 115 | 142 | 76 | 110 |
| 1944 | 72 | 131 | 92 | 152 | 64 | 160 | 100 | 62 | 110 | 200 | 181 | 124 | 120 |
| 1945 | 147 | 106 | 292 | 205 | 123 | 47 | 43 | 116 | 161 | 118 | 287 | 129 | 148 |
| 1946 | 110 | 237 | 42 | 76 | 35 | 39 | 92 | 173 | 255 | 292 | 106 | 245 | 141 |
| 1947 | 81 | 57 | 19 | 28 | 60 | 132 | 100 | 102 | 180 | 176 | 107 | 83 | 94 |
| 1948 | 130 | 50 | 150 | 64 | 99 | 89 | 94 | 40 | 148 | 245 | 233 | 226 | 131 |
| 1949 | 66 | 178 | 212 | 206 | 60 | 26 | 188 | 130 | 96 | 208 | 52 | 129 | 129 |
| 1950 | 201 | 101 | 57 | 72 | 74 | 101 | 129 | 89 | 116 | 74 | 74 | 161 | 104 |
| 1951 | 30 | 17 | 40 | 50 | 82 | 100 | 239 | 111 | 192 | 159 | 188 | 111 | 111 |
| 1952 | 224 | 153 | 148 | 123 | 144 | 160 | 85 | 20 | 154 | 209 | 51 | 43 | 126 |
| 1953 | 18 | 22 | 104 | 214 | 126 | 50 | 117 | 135 | 179 | 81 | 176 | 169 | 116 |
| 1954 | 98 | 101 | 168 | 127 | 34 | 260 | 129 | 107 | 150 | 211 | 140 | 88 | 134 |
| 1955 | 157 | 124 | 88 | 88 | 179 | 178 | 62 | 109 | 190 | 91 | 160 | 75 | 125 |
| 1956 | 39 | 27 | 46 | 126 | 80 | 154 | 115 | 125 | 152 | 106 | 137 | 193 | 108 |
| 1957 | 182 | 82 | 100 | 147 | 242 | 226 | 128 | 94 | 65 | 221 | 399 | 296 | 182 |
| 1958 | 181 | 253 | 180 | 248 | 373 | 242 | 46 | 78 | 81 | 169 | 95 | 91 | 169 |
| 1959 | 50 | 87 | 49 | 83 | 116 | 207 | 119 | 47 | 221 | 124 | 233 | 117 | 121 |
| 1960 | 94 | 165 | 59 | 56 | 48 | 141 | 122 | 167 | 103 | 79 | 87 | 105 | 102 |
| 1961 | 45 | 64 | 91 | 187 | 129 | 191 | 197 | 116 | 79 | 244 | 265 | 91 | 142 |
| 1962 | 125 | 72 | 62 | 68 | 151 | 151 | 165 | 91 | 164 | 132 | 116 | 71 | 114 |
| 1963 | 112 | 122 | 113 | 98 | 164 | 86 | 38 | 112 | 151 | 169 | 233 | 114 | 126 |
| 1964 | 261 | 50 | 171 | 118 | 216 | 74 | 93 | 134 | 164 | 133 | 221 | 205 | 154 |
| 1965 | 108 | 96 | 116 | 87 | 224 | 224 | 93 | 38 | 198 | 222 | 242 | 178 | 152 |
| 1966 | 173 | 145 | 95 | 230 | 85 | 124 | 72 | 52 | 47 | 83 | 111 | 172 | 115 |
| 1967 | 132 | 157 | 162 | 293 | 230 | 47 | 59 | 161 | 108 | 156 | 289 | 275 | 172 |
| 1968 | 136 | 190 | 540 | 85 | 145 | 31 | 82 | 128 | 172 | 273 | 234 | 161 | 182 |
| 1969 | 102 | 52 | 171 | 167 | 63 | 78 | 113 | 142 | 240 | 170 | 68 | 155 | 127 |

| Year | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Mean |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| 1970 | 91 | 81 | 75 | 135 | 20 | 46 | 216 | 205 | 395 | 196 | 108 | 133 | 142 |
| 1971 | 32 | 22 | 57 | 65 | 107 | 80 | 28 | 91 | 258 | 234 | 156 | 107 | 103 |
| 1972 | 110 | 37 | 238 | 147 | 155 | 111 | 121 | 40 | 372 | 177 | 166 | 61 | 145 |
| 1973 | 55 | 103 | 46 | 191 | 197 | 110 | 30 | 46 | 95 | 174 | 155 | 63 | 105 |
| 1974 | 38 | 90 | 53 | 30 | 47 | 109 | 127 | 28 | 59 | 78 | 51 | 42 | 62 |
| 1975 | 56 | 90 | 172 | 268 | 331 | 116 | 151 | 214 | 138 | 131 | 65 | 142 | 157 |
| 1976 | 77 | 46 | 60 | 47 | 176 | 129 | 114 | 57 | 24 | 55 | 89 | 101 | 82 |
| 1977 | 138 | 114 | 65 | 204 | 144 | 137 | 47 | 20 | 87 | 214 | 185 | 79 | 119 |
| 1978 | 102 | 53 | 94 | 94 | 145 | 133 | 57 | 208 | 79 | 197 | 166 | 72 | 117 |
| 1979 | 227 | 166 | 85 | 118 | 166 | 123 | 122 | 56 | 204 | 144 | 103 | 178 | 141 |
| 1980 | 178 | 149 | 125 | 46 | 154 | 122 | 77 | 312 | 262 | 158 | 177 | 127 | 157 |
| 1981 | 87 | 98 | 77 | 156 | 92 | 79 | 91 | 68 | 186 | 222 | 61 | 159 | 115 |
| 1982 | 205 | 162 | 140 | 64 | 263 | 100 | 85 | 180 | 111 | 136 | 400 | 139 | 165 |
| 1983 | 334 | 72 | 177 | 124 | 150 | 125 | 143 | 152 | 190 | 104 | 112 | 119 | 151 |
| 1984 | 247 | 89 | 97 | 163 | 157 | 134 | 93 | 162 | 116 | 250 | 116 | 137 | 147 |
| 1985 | 260 | 56 | 60 | 121 | 87 | 123 | 131 | 126 | 141 | 68 | 69 | 70 | 110 |
| 1986 | 160 | 118 | 101 | 194 | 98 | 205 | 115 | 99 | 132 | 162 | 87 | 136 | 134 |
| 1987 | 134 | 149 | 169 | 147 | 115 | 229 | 125 | 126 | 144 | 248 | 80 | 90 | 146 |
| 1988 | 157 | 125 | 106 | 98 | 110 | 185 | 171 | 168 | 292 | 514 | 245 | 143 | 193 |
| 1989 | 65 | 70 | 136 | 107 | 43 | 153 | 65 | 67 | 40 | 83 | 141 | 115 | 90 |
| 1990 | 109 | 37 | 78 | 129 | 287 | 146 | 104 | 53 | 78 | 139 | 67 | 248 | 124 |
| 1991 | 148 | 169 | 37 | 136 | 105 | 97 | 44 | 290 | 127 | 216 | 107 | 70 | 129 |
| 1992 | 117 | 126 | 151 | 99 | 83 | 57 | 179 | 116 | 60 | 167 | 90 | 51 | 108 |
| 1993 | 236 | 85 | 45 | 78 | 109 | 239 | 124 | 92 | 93 | 220 | 65 | 113 | 125 |
| 1994 | 249 | 67 | 89 | 133 | 201 | 115 | 184 | 199 | 142 | 74 | 348 | 146 | 163 |
| 1995 | 112 | 43 | 204 | 84 | 160 | 87 | 80 | 175 | 317 | 200 | 111 | 234 | 152 |
| 1996 | 101 | 66 | 53 | 160 | 133 | 184 | 66 | 81 | 156 | 269 | 100 | 113 | 123 |
| 1997 | 34 | 90 | 114 | 205 | 110 | 94 | 114 | 231 | 54 | 165 | 323 | 290 | 152 |
| 1998 | 109 | 258 | 244 | 238 | 106 | 152 | 135 | 139 | 162 | 284 | 70 | 68 | 163 |
| 1999 | 66 | 41 | 128 | 135 | 199 | 111 | 105 | 74 | 81 | 158 | 289 | 63 | 121 |
| 2000 | 50 | 96 | 60 | 90 | 192 | 237 | 102 | 99 | 160 | 234 | 68 | 215 | 134 |
| 2001 | 98 | 51 | 79 | 97 | 64 | 162 | 51 | 96 | 79 | 104 | 151 | 154 | 99 |
| 2002 | 79 | 67 | 132 | 70 | 98 | 221 | 103 | 145 | 269 | 140 | 155 | 215 | 141 |
| 2003 | 66 | 101 | 42 | 28 | 152 | 213 | 107 | 99 | 209 | 141 | 223 | 154 | 128 |
| 2004 | 146 | 171 | 131 | 89 | 152 | 238 | 76 | 112 | 153 | 95 | 156 | 93 | 134 |
| 2005 | 128 | 128 | 202 | 80 | 123 | 78 | 112 | 124 | 93 | 67 | 94 | 89 | 110 |
| 2006 | 203 | 55 | 103 | 113 | 84 | 81 | 98 | 100 | 201 | 151 | 194 | 145 | 128 |
| 2007 | 91 | 74 | 120 | 55 | 195 | 95 | 118 | 177 | 132 | 223 | 113 | 93 | 124 |
| 2008 | 91 | 80 | 102 | 41 | 65 | 101 | | | | | | | 80 |
| Min. | 18 | 17 | 19 | 22 | 20 | 26 | 28 | 20 | 24 | 55 | 44 | 42 | 62 |
| Mean | 125 | 104 | 116 | 126 | 137 | 125 | 103 | 113 | 149 | 171 | 153 | 129 | 130 |
| Max. | 334 | 375 | 540 | 293 | 373 | 260 | 239 | 312 | 395 | 514 | 400 | 296 | 193 |

