

Lake Taupo Levels (5 years: 2012 to 2017)

Summary by R J Neveltsen, extracted from Mercury Energy (MRP) Graphs of Lake Levels at Tuesday 17 January 2017 (a work in progress document)

Assessment of time the lake levels are above (a) 357.00masl and (b) 356.75masl (dates being at weekend [W/E] and on a Tuesday)	(a) Weeks above 357.0masl	%	(b) Weeks above 356.75masl	%
2016/17 (a) From 02.08.16 @ 356.095 to 17.01.07 @ 356.999 (b) From 05.07.16 @ 356.754 to date 17.01.17 Projected Possible Duration plus 13 weeks to 24.04.17 Maximum W/E 27.12.2016 = 357.100 masl Minimum W/E 17.05.2016 = <u>356.260</u> masl Variation in the year <u>0.840</u> metres	24	46%	28 41?	79%
2015/16 (a) From 11.08.15 @ 357.007 to 22.09.15 @ 356.988 (b) From 16.06.15 @ 356.728 to 09.02.15 @ 356.777 Maximum W/E 08.09.2015 = 357.020 masl Minimum W/E 07.04.2015 = <u>356.285</u> masl Variation in the year <u>0.744</u> metres	6	12%	31	60%
2014/15 (a) No levels over 357.00 masl (b) From 28.10.14 @ 356.772 to 20.01.15 @ 356.737 Maximum W/E 14.01.14 = 356.892 masl Minimum W/E 08.04.15 = <u>356.021</u> masl Variation in the year <u>0.877</u> metres	0		13	25%
2013/14 (a) No levels over 357.00 masl (b) From graph, above 356.75masl for 4 months late Sept to 28 Jan @ 356.779 Maximum about November @ 356.950 masl (at 14.01.14 still @ 356.892) Minimum about late April 2013 @ <u>356.050</u> masl Variation in the year <u>0.900</u> metres (Note – Kuratau Beach Replenishment carried out in June 2013)	0		18	35%
2012/13 (a) No levels over 357.00 masl (since January 2011 storm) (b) From graph, above 356.75 masl October/November? Maximum about November, about 356.875 masl Minimum about May 2012, about <u>356.375</u> masl Variation in the year <u>0.500</u> metres	0		8	15%
Comparisons (derived from Opus Figures 3.6 & 3.7 March 2008 p18 – attached)				
2004/07 (4 years) – when lake significantly above 1980-2008 median of 356.68masl (ie lake held 0.5m higher than in the previous 4 year period 2000/03. -2004/07 are erosion years)	10	20%	32	62%
2000/03 (4 years)	3	6%	12	23%
Comparisons (derived from Table 3.2-1, NIWA-CR-Report:CHCOO/88 [for MRP] October 2000)				
Lake Taupo 1905/1941 (pre control period – mean LL 356.70masl) 50% of time LL > 356.66, 20% >356.95, 10% > 357.12masl Say at Max	10	20%	26	50%
Oct 1979 – March 1999 (controlled) 50% of time LL > 356.70, 20% >357.01, 10% >357.10 Say at Max	10	20%	26	50%

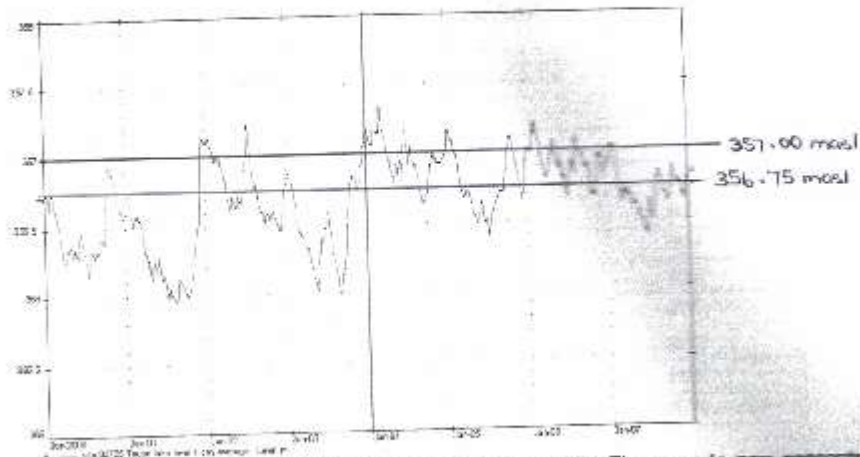


Figure 3.6 Daily average lake levels between 2000 and 2007. The move to new consents, including a single MCL, is indicated by the red line.

Since the end of 2003 the lake appears to have been held about 0.5 m higher and exhibits significantly less variation than in the previous four years (Figure 3.7). The maximum lake levels appear to have been largely unaffected.

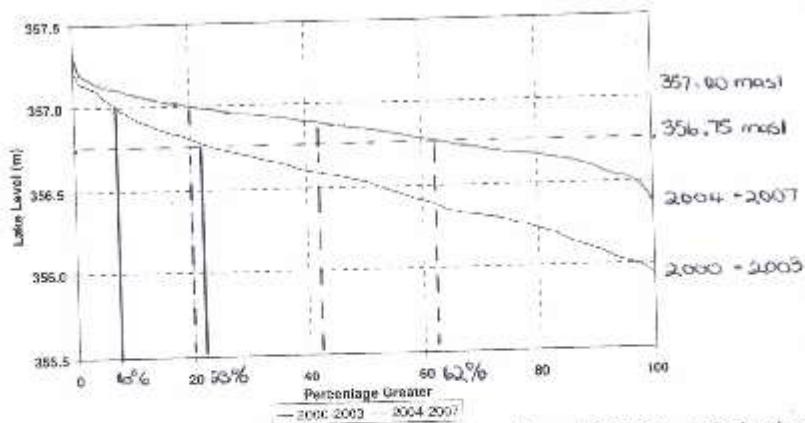


Figure 3.7 Distribution of lake levels from 2000-2003 and from 2004-2007. Lake levels since 2004 appear to be different to the earlier period.

A comparison of the inflow records for the 4-year periods (2000-2003 & 2004-2007) either side of the granting of the new consents shows no difference (Figure 3.8). It is therefore likely that this recent change in lake level variation is not the result of any general climatic