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Lake Taupo long-term monitoring programme: 2011-2012

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Lake Taupo Long-term Monitoring Programme: 2011 - 2012

Prepared for Waikato Regional Council

March 2013

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Contents

Tables

Figures

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1. Executive summary

With the expectation that the trophic status of Lake Taupo will slowly change to reflect changes in land use within the lake's catchments, a long term programme to monitor the lake's water quality was commissioned by Waikato Regional Council. This programme commenced in October 1994 and is conducted by NIWA with field assistance from the Department of Internal Affairs, Taupo Harbourmaster's Office. This report presents the results from the 2011/12 monitoring period.

The monitoring programme was designed to detect change through assessment of the rate of consumption of oxygen from the bottom waters of the lake (volumetric hypolimnetic oxygen depletion – VHOD) as an integration of all biological processes occurring in Lake Taupo. Additional parameters are measured to provide a more comprehensive picture of water quality. Recently it has become apparent that VHOD may be too coarse to determine trophic change in a lake the size and complexity of Lake Taupo. Consequently, more emphasis is now focused on the parameters chlorophyll *a*, water clarity, and nutrient (particularly nitrate) accumulation in the lake.

The long-term monitoring programme uses the historical mid-lake site, Site A. Monitoring of additional sites in the Kuratau Basin (Site B) and the Western Bays (Site C) between January 2002 and December 2004 determined that spatial variability of water quality across Lake Taupo is minimal and that it is valid to use the mid-lake site as representative of the open water quality of the lake. Further validation of the use of a single mid-lake monitoring site was obtained in a separate study over a 2-year period from February 2007 up to June 2009, which compared upper water-column nutrient and chlorophyll *a* concentrations and algal species composition with near-shore sites in Whangamata Bay (Kinloch) and Whakaipo Bay. This study determined that "the near-shore water quality was very similar to the mid-lake water quality" and that "within this similarity in the measured data was much variability which may be due to short period time lags between the near-shore and mid-lake sites with respect to nutrient sources, and the zones of algal growth".

Although there is a long-term trend of increasing mean annual phytoplankton biomass (chlorophyll *a*) of 0.011 ± 0.012 mg m^{-3} y^{-1} in the upper 10 m of water column over the 1994-2012 monitoring period, inter-annual variability in the data was high. As the long-term data accumulates, it has become apparent that the increase in chlorophyll *a* occurred mostly before 2000. The annual mean chlorophyll *a* concentration from 1994 to 2003 increased at a statistically significant rate of 0.087 ± 0.029 mg m^{-3} y^{-1} ($P < 0.001$, $r^2 = 0.857$, n = 10), but from 2000 to 2012 there has been a steady decline at a rate of 0.024 ± 0.019 mg m^{-3} y^{-1} ($P < 0.02$, $r^2 = 0.417$, n = 13).

During this monitoring year (2011/12), highest phytoplankton biomass occurred in August 2011 when the lake had mixed and lowest biomass occurred in the upper water column in January 2012, which is consistent with most previous monitoring periods. The pattern of change in the annual winter phytoplankton biomass maximum also shows an increase from 1994 to the mid-2000s followed by a decline, which is best described by a 4th order polynomial ($r^2 = 0.6915$).

Chlorophyll fluorescence profiles show that, each year during summer, a deep chlorophyll maximum (DCM) develops just below the thermocline (40 m). Comparison of the DCM with the upper 10 m layer shows that the chlorophyll *a* concentrations (derived from the fluorescence profiles) can be up to 450% higher in the DCM. Examination of the DCM shows that it forms shortly after winter mixing and has the greatest difference relative to surface values in mid-summer when it may accounts for more than 70% of the phytoplankton biomass in Lake Taupo.

The 2011 winter bloom was dominated by the diatoms, *Asterionella formosa, Fragilaria crotonensis* and *Aulacoseira granulata*, each initially accounting for about 50%, 25% and 20%, respectively, of the biovolume in the upper 50 m of the water column. *Fragilaria* was dominant throughout the rest of the 2011/12 monitoring period. The dinoflagellate, *Gymnodinium sp*. was present in greatest abundance in summer 2012. Cyanobacteria (blue-green algae) were always present in low numbers in the upper water column throughout the 2011/12 monitoring period, with (formerly *Anabaena planctonica*) being the most common species, reaching greatest abundance in autumn 2012.

Nutrient concentrations - dissolved reactive phosphorus, ammoniacal nitrogen, and nitrate nitrogen (DRP, NH_4-N, and NO_3-N) - in the upper water column were comparable with concentrations measured since 2003. NO_3-N concentrations were lower and NH_4-N concentrations were elevated in the upper water column since 2007. The elevated NH_4-N concentrations may indicate water column decomposition of the winter-spring bloom, or excretion from a zooplankton bloom.

The total mass of NO_3-N in the hypolimnion before winter has increased at a statistically significant rate of about 5.2 t y^{-1} ($P < 0.05$, $r^2 = 0.21$, n = 25) over the last 36 years. This value is slightly lower than the previous year but includes a decrease of around 70 t of NO_3-N in the hypolimnion in autumn compared with autumn the previous year. The total mass of NO_3-N in the hypolimnion in autumn 2012 was about 212t. The net accumulation rate of NO_3-N in the hypolimnion below 70 m for the 2011/12 stratified period was 1.36 t d^{-1}, which is around 0.2 t d^{-1} less than in the previous year. However, because of high variability in the data, the increase in the net hypolimnetic NO_3-N accumulation rate during the stratified period was only weakly significant at 0.022 t d^{-1} ($P = 0.08$, $r^2 = 0.125$, n = 25) over the last 36 years.

Although the mass of total nitrogen (TN) in the lake has remained relatively constant at around 3300 t, there was an estimated loss of around 920 t of TN during the 2011/12 monitoring period. This is the second year to have a net loss of TN.

Spring and summer 2011/12 water clarity was slightly lower than the previous year reaching 18.5 m in December 2011 before returning to 16.5 m for the rest of the summer. The lower than expected water clarity for the past two years coincided with a relatively wet springs. This may reflect a higher phytoplankton biomass in the upper water column from the increased nutrient input in surface runoff as well as a higher input of sediment from erosion.

As observed in 2008, lowest water clarity values in 2011/12 (excluding sediment resuspension due to hydrothermal events) occurred between August and November and were associated with a wet and windy spring. Analysis of the long term data indicates that, between 2000 to 2007 the lowest water clarity was most likely to occur in August but since 2007, the lowest water clarity was more likely to occur in October. This two month shift in water clarity was not accompanied by a comparable shift in the timing of the maximum phytoplankton biomass, indicating that in October the water clarity is most likely affected by suspended sediment from the land. Lowest water clarity occurred in October 2011.

The 2011/12 net VHOD rate at 11.33 ± 3.00 mg m^{-3} d^{-1} (mean ± 95% confidence limit) was more than 6 mg O_2 m^{-3} d^{-1} lower than the previous year, which was 17.52 ± 3.95 mg O_2 m^{-3} d^{-1}. Evaluation of the VHOD data shows that there has been a statistically significant (P <0.001, $r^2 = 0.62$, n = 14) increase of around 0.8 mg m^{-3} d^{-1} in the VHOD rate each year since the low of 1999.

The persistent increase in hypolimnetic oxygen demand over the past 14 years implies a gradual increase in the organic carbon load in the lake since 1999 and is in contrast with steady or decreasing mean annual chlorophyll *a* concentrations in the surface waters. An increased hypolimnetic oxygen demand may be the result of higher sediment runoff from land in spring or decomposition of higher phytoplankton biomass in the DCM.

2. Introduction

A long term monitoring programme of Lake Taupo's water quality was commissioned by Waikato Regional Council in October 1994 in the expectation that the trophic state of the lake would change to reflect changes in land use within the lake's catchment. This programme is conducted by NIWA with field assistance from the Department of Internal Affairs, Taupo Harbourmaster's Office. Various additions and improvements to the monitoring methodology have occurred with advances in available technology but the core monitoring parameters remain unchanged (Appendix 1). This report presents data from the routine mid-lake monitoring station from August 2011 to July 2012. Additional information for water clarity, temperature, and chlorophyll *a* collected between August 2012 and the time of writing this report has also been included in the data sets in the appendices.

In two earlier reports (Gibbs 2005, 2006), data were included from two additional sites representing those historically sampled in the 1974-76 assessments of lake water quality (White et al. 1980) (Figure 1) to evaluate spatial variability of water quality across the lake. Results from these two additional sites showed that, in general, there were minimal differences between the sites in seasonal variation and that data collected from Site A (mid lake) could be used as representative of the main body of the lake. More recently, a comparison of upper water column nutrient and chlorophyll *a* concentrations and algal abundance was made between Site A and near-shore sites in Whangamata Bay (Kinloch) and Whakaipo Bay (Figure 1), over a 2-year period from February 2007 up to June 2009 (Gibbs 2010a). That study determined that, although there were small differences, "the near-shore water quality was very similar to the mid-lake water quality" and the small differences that were observed "may be due to short period time lags between the near-shore and mid-lake sites with respect to nutrient sources, and the zones of algal growth". This report presents data from Site A only.

The monitoring programme has 3 components: bottom water oxygen depletion, upper water column water quality, and whole water column water quality. Bottom water oxygen depletion is estimated as the volumetric hypolimnetic oxygen depletion (VHOD) rate, which is sensitive to changes in trophic state of lakes that thermally stratify for part of the year (Burns 1995). VHOD is considered a good indicator to detect changes in the water quality of Lake Taupo. Estimates of VHOD are made from dissolved oxygen and temperature profiles measured at 2-3 week intervals during the stratified period. However, the VHOD rate can only indicate changes that may occur in water quality but not identify their underlying causes. In order to enable understanding of contributing processes, the upper water column (0-10 m depth) is sampled for nutrients, chlorophyll *a*, phytoplankton species composition and water clarity at 2-3 weekly intervals, and full depth profiles are carried out twice during the stratified period. The first profile is taken in spring, when thermal stratification has become established and is stable, the second profile is taken in autumn the following year before thermal stratification begins to break down, as the thermocline deepens.

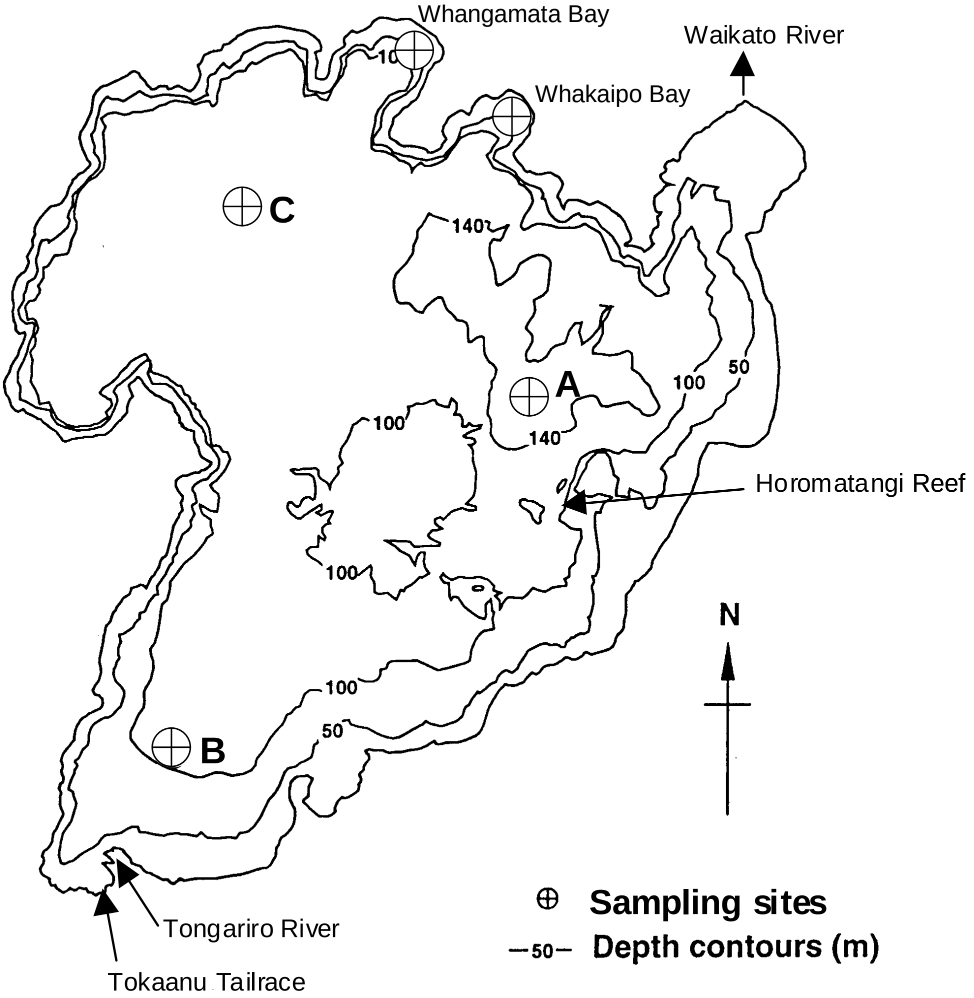

Figure 1: Site map of Lake Taupo. Showing location of the routine monitoring site at mid lake (A), and the two additional sites at Kuratau Basin (B) and the Western Bays (C) sampled during the three-year period 2002-04. The near-shore comparison sites at Whangamata Bay and Whakaipo Bay sampled during a two-year period 2007-09 are also shown.

3. Methods

Detailed method descriptions are given in Appendix 1. The parameters measured routinely at 2-3 weekly intervals are:

- depth-related temperature and dissolved oxygen (DO), using the RBR XR420f CTD profiler until January 2008, thereafter using the RBR XR620f CTD profiling system. Additional parameters of conductivity and chlorophyll fluorescence, and since January 2008, PAR, recorded by the profiler sensors are available at NIWA and will only be reported as appropriate

- water clarity by Secchi disc depth (20-cm black and white quartered)

- chlorophyll *a*, nitrate+nitrite-nitrogen (NO_3-N), ammoniacal-N (NH_4-N), dissolved organic N (DON), particulate-N (PN), dissolved reactive phosphorus (DRP), dissolved organic phosphorus (DOP), particulate phosphorus (PP), and algal species dominance in integrated-tube water samples from the top 10 m. Concentrations of total nitrogen (TN) and total phosphorus (TP) are estimated by summing the respective measured fractions. Zooplankton net hauls from 100 m (63 µm mesh) are preserved in 4% formalin and stored pending analysis.

Since 2000, water samples have also been collected at the same time from just above the lake bed (150 m) for analysis of NO_3-N, NH_4-N, and DRP to assess nutrient accumulation rates in the hypolimnion and to assess the extent of winter mixing.

Whole water column sampling is carried out twice a year in spring and autumn and the parameters measured at 10 m depth intervals from the surface down to 150 m depth are:

- Conductivity, pH, temperature, DO, chlorophyll *a*, DRP, DOP, PP, TP, NO_3-N, NH_4-N, DON, PN, TN, urea nitrogen (Urea-N), total suspended solids (SS), volatile suspended solids (VSS), particulate carbon (PC), and dissolved organic carbon (DOC).

Additional parameters measured twice yearly, but not as complete profiles are:

- Algal species composition and abundance on water samples from 1, 10, 50, 100 and 140 m.

Details of data handling and the treatment of values that are near analytical detection limits are described in Appendix 1.

3.1 Report contents

This report presents the results from the 2011/12 stratified period plus the winter 2012 mixing, and refers to data in previous annual monitoring reports from 1995 to 2011 (e.g., Gibbs 2011; Gibbs et al. 2002) for inter-annual comparisons, and archived historical data since 1974 held by NIWA. The methods used are as per the 1994/95 report (Gibbs 1995) and a copy of these methods is included in Appendix 1. The calculation of the net VHOD rate, as applied to Lake Taupo data, was described in the 1996/97 report and a copy of the methods is presented in Appendix 2. Temperature and dissolved oxygen data from the previous seventeen years are given in Appendix 3 and nutrient data are in Appendix 4. Graphical presentations of historical time-series temperature, dissolved oxygen, and Secchi disc depth data collected since the start of this monitoring programme are updated and presented in figures in the text. Phytoplankton species composition and biomass data for 2011/12 are included in Appendix 5 and discussed in the text. Historical (before 1994) nitrate and dissolved reactive phosphorus data from spring and autumn full lake profiles are presented in Appendix 6 for reference.

3.2 Statistical evaluation

Simple statistical evaluation of data has been made using Microsoft Excel® and regression results have been reported to ± 95% confidence limits. Statistical significance (*P*), where used, includes the coefficient of determination (r^2) and the number of data points used (n). For details see Statistical Methods, Appendix 1.

3.3 “TREND” definition

As in previous reports, the word “trend” is used in the context of a change between the start and the end of a time series data set where the use of a linear regression analysis shows a statistically significant difference from the null hypothesis of there being no change. Use of the word “trend” is a statistical one. It does not imply any valid extrapolation of the observed change beyond the period of the data set being examined by the linear regression.

4. Results and discussion

4.1 Temperature and dissolved oxygen

The time-series of temperature and DO from 20 m depth (epilimnion) and 130 m depth (hypolimnion) collected in the monitoring programme since 1994 are presented in Figure 2 and Figure 4.

Annual maximum temperatures at 20 m are variable between 17 ºC and 21 ºC, reflecting warmer or cooler summers (Figure 2). The times-series of maximum surface temperatures (Figure 3) suggest that there is a cyclical pattern with warmer summers since 2007. Surface water temperatures in summer 2012 were about 1 ºC colder than the previous 4 years.

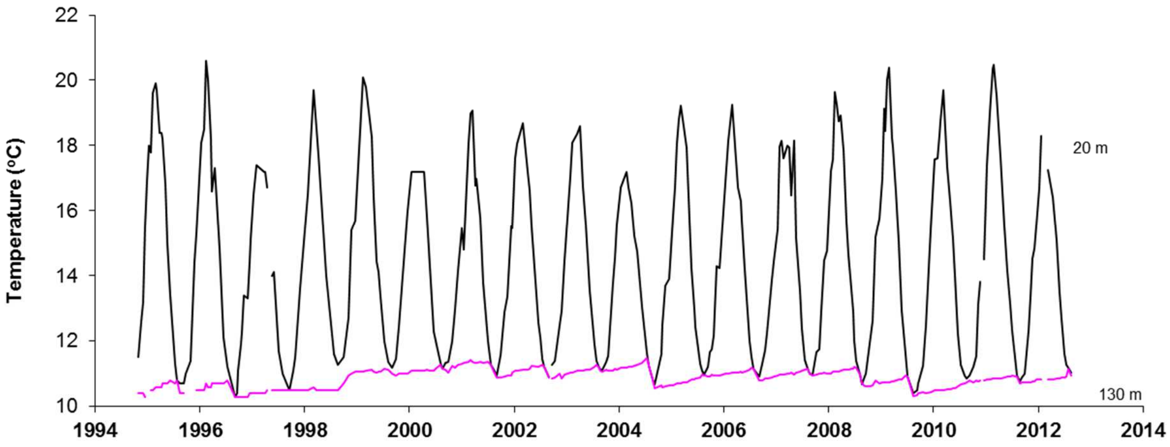

Figure 2: Time-series temperature data. Time-series temperature from 20 m (black line) and 130 m (pink line) depths. Winter mixing occurred where these two lines meet. The data show the lack of mixing in winter 1998 and only partial mixing in 1999 and 2005. Mixing was brief in 1997 and 2010 but strong in 1996, 2002, 2004, 2008, 2009 and 2011. Data ticks are 1 January each year.

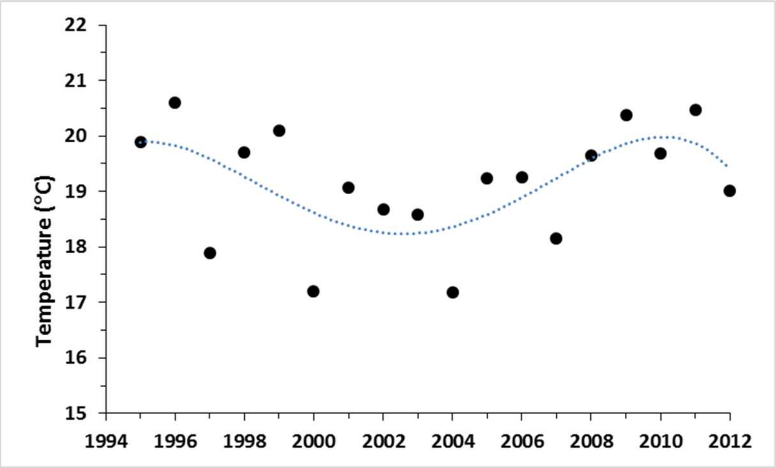

Figure 3: Maximum surface temperatures in summer. The trend line is a 4th order polynomial indicating a cyclical pattern.

Near bottom water temperatures have been relatively constant between 10.3 ºC and 11.6 ºC. Near bottom temperatures slightly increase each year during the stratified period (Figure 2). Winter mixing occurs when the upper and lower temperatures are the same. Mixing rarely extends for more than a month (e.g., winter 2004, Figure 2) during which the whole water column cools rapidly.

Conversely, in some years the period of mixing may be brief or does not occur at all, for instance during winter 1998 (Figure 2) when the bottom water continued to warm throughout winter. The decrease in bottom water temperature during winter is a reasonable indicator of the strength and duration of the winter mixing. In winter 2009, there was a significant decrease in bottom water temperature during winter mixing, suggesting strong mixing for a period of at least a month. In winter 2011 there was a small decrease in bottom water temperature consistent with a longer period of winter mixing.

Even in years with incomplete mixing, the DO content of the hypolimnion rarely fell below 7.0 g m^{-3}, even close to the sediment except in summer 2001 (Figure 4). However, oxygen concentrations close to the sediment were below 7.0 g m^{-3} in 2008 and 2009 and, at the end of summer 2010, they were below 6.5 g m^{-3} (Appendix. 3). In contrast, during winter mixing in 2008, 2009 and 2011 the bottom water oxygen concentrations exceeded 10.5 g m^{-3} (Figure 4) confirming the high degree of mixing in these years indicated by the colder bottom waters (Figure 2).

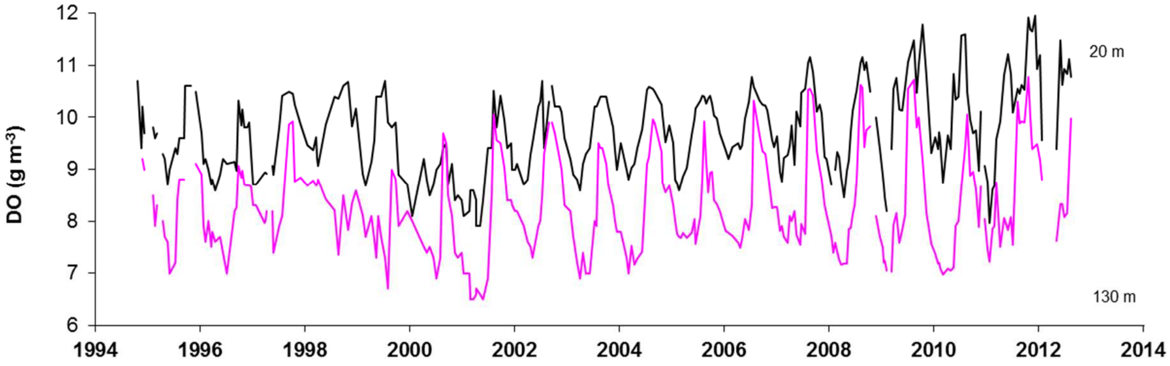

Figure 4: Time-series dissolved oxygen data. Time-series dissolved oxygen data from 20 m (black line) and 130 m (pink line) depths. Mixing and reoxygenation occurred where the 2 lines in the temperature data (Fig. 2) meet each winter. However, where temperature data indicate incomplete mixing there is incomplete reoxygenation of the hypolimnion. Date ticks are 1 January in each year.

In summer 2011/12, surface (<20 m) DO concentrations remained above 8 g m^{-3} and bottom water oxygen concentrations were not much lower, remaining around 8 g m^{-3} until turnover in September 2012. DO concentration increases below the thermocline (Figure 5A) were associated with photosynthesis in the deep chlorophyll maxima (DCM) (Figure 5B). Photosynthesis in the DCM may be a significant source of DO to the hypolimnion while it is present, but may also be a substantial source of carbon in the water column driving hypolimnetic oxygen depletion when these phytoplankton senesce and decompose.

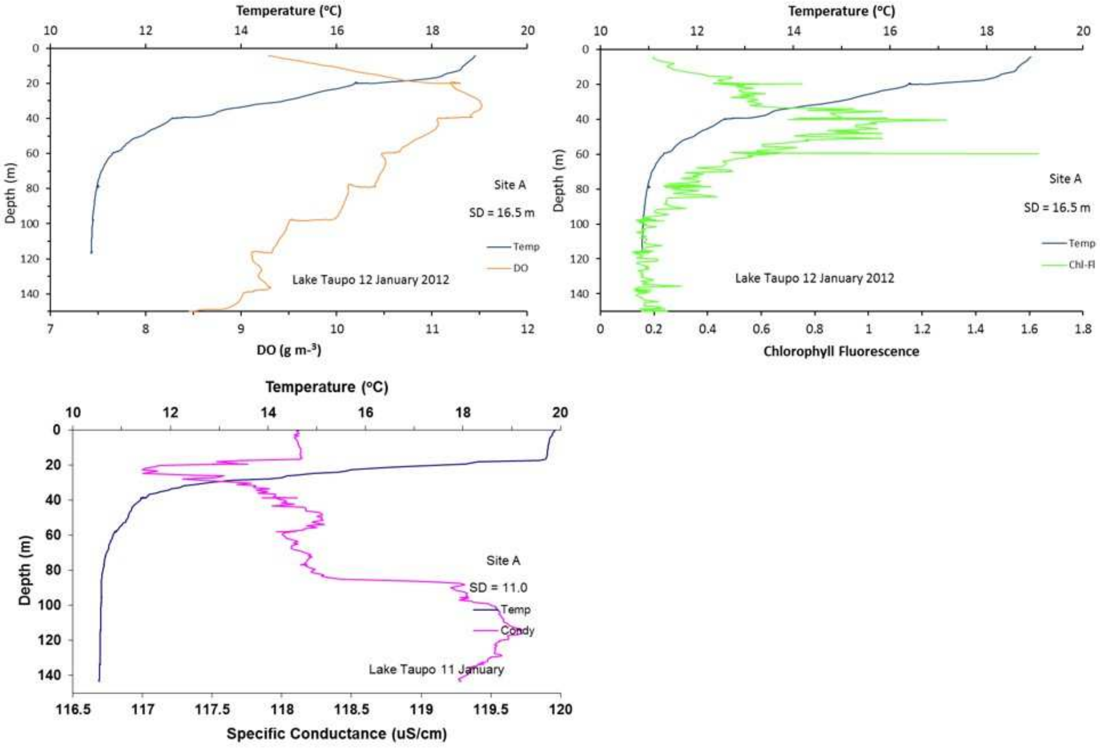

Figure 5: Lake Taupo CTD-O profiles. **A**) Dissolved oxygen, and **B**) Chlorophyll fluorescence in January 2012 and **C**) conductivity in January 2011 relative to temperature and depth.

4.2 VHOD rate

The VHOD rate was estimated between October 2011 and the beginning of February 2012 based on oxygen profile data collected at site A. VHOD calculations were made using the volume-weighted mean DO concentration below 70 m on each sampling occasion (Figure 6) – see Appendix 2 for more detail. The volume-weighted mean DO concentration increased in mid-February 2012 indicating slight re-oxygenation at that time but subsequently continued to decrease through to May. The VHOD rate in 2011/12 was 11.33± 3.00 mg m^{-3} d^{-1} (mean ± 95% confidence limit) (Fig. 4). This value was 6.2 mg m^{-3} d^{-1} lower than the value for 2010/11, which was 17.52 ± 3.95 mg m^{-3} d^{-1} (Table 1).

The 2011/12 VHOD rate was measured between November 2011 and May 2012, a much longer period of measurement than in the previous three years when evidence of reoxygenation has become apparent in February. That is unusual as February is generally the hottest month, the thermocline is strongest and there is usually insufficient wind stress for deep mixing.

Notwithstanding this extended measurement period, the VHOD rate was substantially less than in previous years. This may indicate that there was possibly a low level of reoxygenation occurring from February 2012 on, but at a rate insufficient to overcome the hypolimnetic depletion rate until May. The VHOD rate calculated between November 2011 and February 2012 was 15.2 ± 7.3 mg m^{-3} d^{-1}, more in keeping with the VHOD rate in the previous year, but with a much higher error term consistent with the high variability in the data.

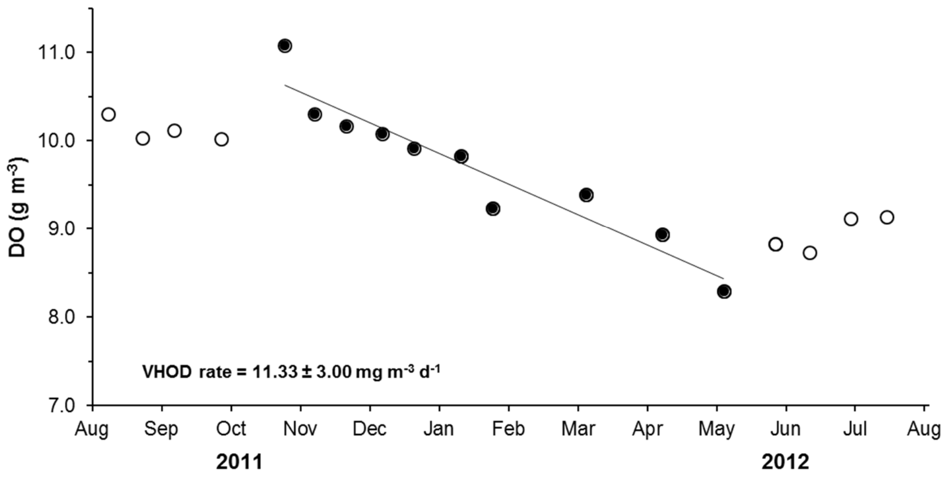

Figure 6: VHOD for 2011-2012 monitoring period. Volume-weighted mean dissolved oxygen (DO) concentrations below 70 m for 2011/12. The slope of the linear regression through the solid data points provides the VHOD rate. ($P < 0.0001$, $r^2 = 0.91$, $n = 10$). Data from May 2012 on show a slight increase indicating re-oxygenation was occurring. DO sensor failure occurred on 16 February 2012.

The apparent reoxygenation and a VHOD rate lower than the previous year may be associated with climatic effects. Summer 2012 was wetter than previous years and this would maintain a higher than usual nutrient input to the lake via river inflows. This would sustain a higher phytoplankton biomass that would not be present in drier years, and is seen in the Secchi depth data as lower than usual summer water clarity in 2012 (Figure 8). If the river inflows are cooler than the lake surface temperatures in summer, they are likely to insert as intrusion layers at the depth of the thermocline and the DCM. The higher water clarity in summer coupled with biologically available nutrients is likely to stimulate growth in the DCM and thus photosynthesis in the upper hypolimnion.

The corollary to this effect should be a higher VHOD rate in the following year (2012/13) as the higher phytoplankton biomass in the DCM senesces and decomposes.

Another source of carbon in the water column that may affect the VHOD rate is associated with hydrothermal activity in the bottom of the lake. Although there is likely to be continuous low-level activity from the crater vents near the Horomatangi Reef (de Ronde et al. 2002), there are also intermittent larger events, which jet hot (~300°C) water up into the lake water column. With these larger events, bottom water and surficial organic sediments can be entrained into the rising hot water plume and may reach the surface waters. The hot water plumes are seen in the conductivity data as anomalies (Figure 5C) due to elevated salt concentrations in that water. Without the hydrothermal activity, the conductivity profile would closely match the shape of the temperature profile.

The entrained sediment is seen as sudden reductions in water clarity. Being denser than phytoplankton, the resuspended sediment quickly settles once the hydrothermal activity reduces allowing the water clarity to increase suddenly. For example, in January 2011 the amount of sediment entrained was sufficient to reduce the clarity from a Secchi depth of >18 m to 11 m (Figure 8). This has happened on other occasions (see Secchi depth section 4.3). Several rapid Secchi depth transitions from 18 m to 11 m and back within a few weeks following the initial event are consistent with the occurrence of several larger events in summer. As each event adds organic carbon to the water column, this may increase the rate of oxygen depletion and thus the mean annual VHOD rate.

Conceptually, the more hydrothermal events that occur in a year, the greater the effect on the VHOD rate. During the 2011/12 monitoring period, hydrothermal activity was minimal and there were fewer large events than in the previous few years. This may have contributed to the lower mean annual VHOD rate in 2011/12.

Of interest, a major hydrothermal event was observed on 14 June 2012 and may have been a precursor to the Mount Tongariro eruption on 6 August 2012. Large hydrothermal events continued for several months after the initial eruption and were still being observed in summer 2013. If sediment resuspension by hydrothermal events has an enhancing effect on the VHOD rate, the expectation might be for an increased VHOD rate in the 2012/13 monitoring year relative to the 2011/12 monitoring year.

VHOD time series

Assessment of the time-series of changes in VHOD rates shows that there is a statistically significant ($P < 0.00005$, $r^2 = 0.76$, $n = 14$) trend of increase in the VHOD rate data of around 1 mg m^{-3} d^{-1} each year since 1999 (Figure 7). The low VHOD in 1999 may be attributed to the effects of the 1995/96 eruption of Mount Ruapehu which deposited around 2 million tonnes of allophanic ash across the lake. While allophane is known to remove phosphate from water, this event also may have triggered a temporary change in the winter bloom dominant algal species from diatoms to buoyant colonial green algae (Table 1). The change from *Aulacoseira granulata*, a heavy diatom which sinks rapidly, to *Botryococcus braunii*, a large colonial green algae which floats in the upper water column, may have allowed the phytoplankton carbon to drift inshore rather than settle in the deeper parts of the lake. As a buoyant algal species, *Botryococcus braunii* behaves much like cyanobacteria in that it drifts with the wind and becomes concentrated along the shoreline and in embayments around Lake Taupo when it becomes dominant. The loss of organic carbon to the deep waters could then have resulted in a lower VHOD at that time.

Instead of returning to the pre-eruption VHOD levels after the diatoms again dominated the algal species in the winter bloom, the VHOD rate continued to increase (Figure 7). This sustained increase in VHOD over the past 14 years suggests an increase in the export of organic carbon to the hypolimnion, either from external inputs (i.e., land-use effects), or from internal sources such as enhanced primary production within the lake and resuspension of lake sediments or a combination of both external and internal sources.

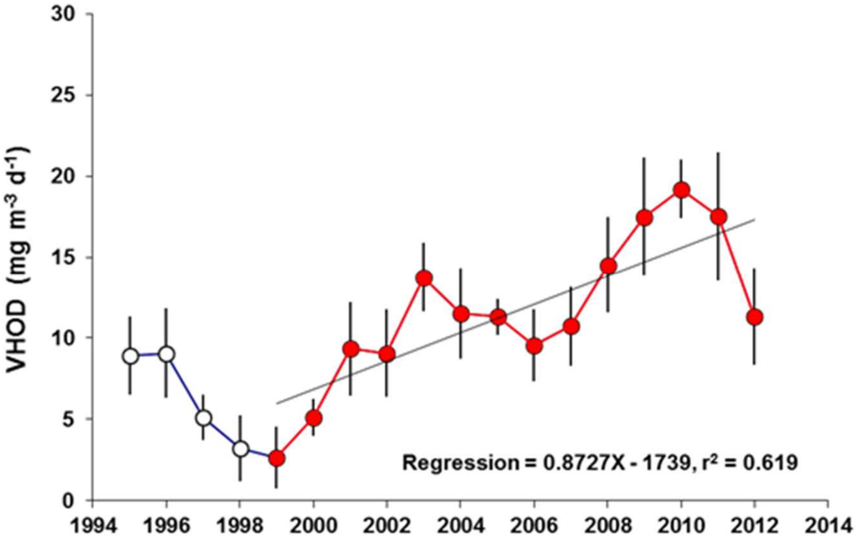

Figure 7: Time-series VHOD data. Time-series of VHOD rates since 1994-5. The low VHOD in 1997-2000 (following the 1995/96 eruptions of Mount Ruapehu) correlates with a shift in algal dominance from diatoms to colonial greens (*Botryococcus braunii*). The regression through the solid (red) dots ($P < 0.001$, $r^2 = 0.62$, $n = 14$), only refers to the change in VHOD since 1998/99, the year when the VHOD rate during the monitoring programme was lowest, and the last year in which diatoms were not dominant. Data ticks are by year.

Table 1: Summary of VHOD rates. Summary of the volumetric hypolimnetic oxygen depletion (VHOD) rates (mg O_2 m^{-3} d^{-1}) (± 95% confidence limit) and the dominant phytoplankton species during the preceding winter bloom. (* not measured in winter but measured in October 1994).

Year	VHOD rate	Dominant phytoplankton species	Type
1994-95	8.93 (2.39)	*Aulacoseira granulata**	Diatom
1995-96	9.07 (2.77)	*A. granulata*	Diatom
1996-97	5.12 (1.37)	*Botryococcus braunii*	Colonial green
1997-98	3.21 (2.03)	*B. braunii*	Colonial green
1998-99	2.64 (1.90)	*B. braunii*	Colonial green
1999-00	5.11 (1.14)	*B. braunii* + *A. granulata* + *Cyclotella stelligera*	C.G. – Diatom mix
2000-01	9.34 (2.9)	*A. granulata*	Diatom
2001-02	9.06 (2.7)	*Asterionella formosa*	Diatom
2002-03	13.76 (2.14)	*A. formosa* + *A. granulata*	Diatom
2003-04	11.50 (2.80)	*A. formosa* + *A. granulata*	Diatom
2004-05	11.30 (1.13)	*Fragilaria crotonensis* + *A. formosa*	Diatom
2005-06	9.56 (2.24)	*A. formosa* + *A. granulata*	Diatom
2006-07	10.73 (2.45)	*A. granulata*	Diatom
2007-08	14.51 (2.94)	*Fragilaria crotonensis* + *A. formosa*	Diatom
2008-09	17.50 (3.64)	*A. formosa* + *A. granulata*	Diatom
2009-10	19.21 (1.79)	*Fragilaria crotonensis* + *A. formosa* + *A. granulata*	Diatom
2010-11	17.52 (3.95)	*Fragilaria crotonensis* + *A. formosa* + *A. granulata*	Diatom
2011-12	11.33 (3.00)	*Fragilaria crotonensis* + *A. formosa* + *A. granulata*	Diatom

4.3 Secchi depth

Water clarity, as measured by Secchi depth, in Lake Taupo generally follows a seasonal pattern inversely correlating with the pattern of phytoplankton abundance. Secchi depths in the long-term record, until recently (since 2002), have mostly been between 10 m to 20 m (Figure 8). Lowest water clarity occurs during the winter/spring growth phase and highest water clarity during summer when the phytoplankton have settled out of the epilimnion, which is usually depleted in nutrients at that time.

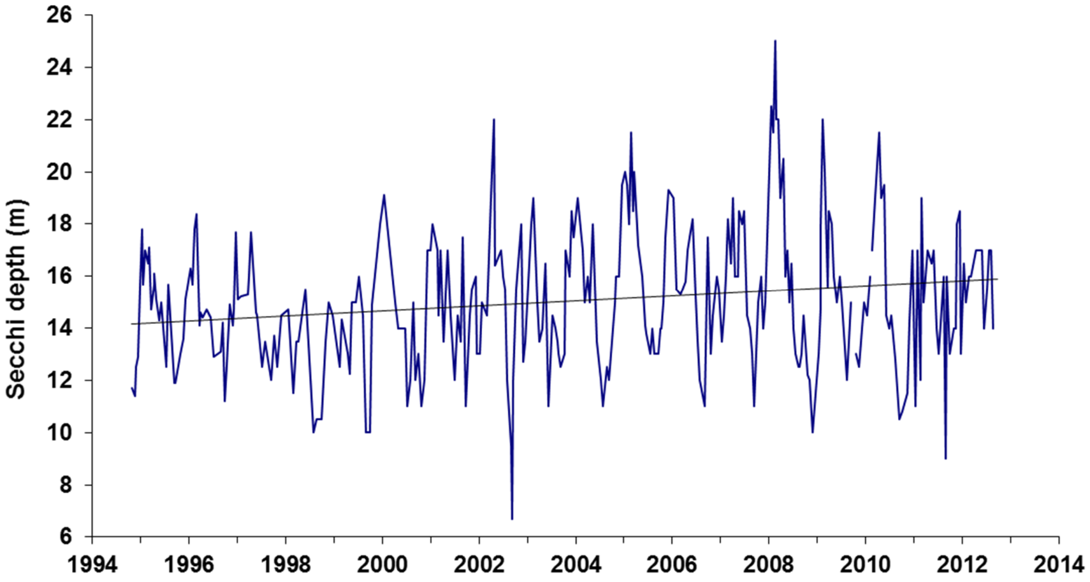

Figure 8: Water clarity as measured by Secchi depth. Time-series Secchi depth data for the present monitoring programme since 1994. Trend line equation 0.080 ± 0.084 m y-1 (P = 0.06, r^2 = 0.204, n = 18).

The maximum water clarity in summer 2011/12 was lower than in most recent years, with Secchi depths reaching 18.5 m briefly in December 2011 and being around 17 m or less for most of the summer (Figure 8). The low clarity in both summers (2011 and 2012) are likely to be associated with wetter spring and summer weather patterns, which is in contrast to the three previous summers (2008, 2009 and 2010) which had extremely dry (drought) periods.

It is also likely that the high variability in the clarity data in the current and previous monitoring year was associated with sediment resuspension from the lake bed, entrained in rising plumes of warm water from a series of hydrothermal eruptions. Sediment detritus particles were observed in the water samples on at least three occasions and there were substantial conductivity anomalies in the profile data. The rapid changes in clarity are not consistent with patterns of phytoplankton growth and mixing, especially in summer stratification period when the surface waters of the lake have very low phytoplankton biomass. The hydrothermal eruptions ceased in January 2012 and resumed on June 2012, presumably associated with the eruption of Mount Tongariro on 6 July 2012. Once again the water clarity was suddenly reduced as sediment was entrained to the surface.

Mean water clarity during winter (July – September) has increased by 0.080 ± 0.084 m y^{-1} (P = 0.06, r^2 = 0.204, n = 18) since the beginning of monitoring in 1994 (Figure 8). However, this increase has not been consistent over the whole period. Examining the data in 5-yearly blocks shows that the mean winter water clarities for the periods 1995-1999, 2000-2004, and 2005-2009 were 12.5 m, 13.0 m, and 13.5 m, respectively, whereas the minimum values for each period were 10 m, 9.5 m, and 11 m, respectively. The monitoring period that is the subject of this report (July 2011- June 2012) was wetter than usual and produced a comparable mean but lower minimum water clarities during the mixing period of 13.4m and 9 m, respectively. The minimum value of 9 m may be associated with resuspended sediment during a hydrothermal eruption. The next lowest value was 13 m.

Minimum Secchi depth (1994 to 2012) usually occurs around September (Figure 9). Since 2000 the timing of minimum water clarity may have shifted by two months, from winter to spring (Figure 10). Between 2000 and 2007 the lowest Secchi depth values occurred usually in August but from 2007 to 2012 the lowest Secchi depth values occurred mostly in October. Water clarity in summer was higher after 2007 than before.

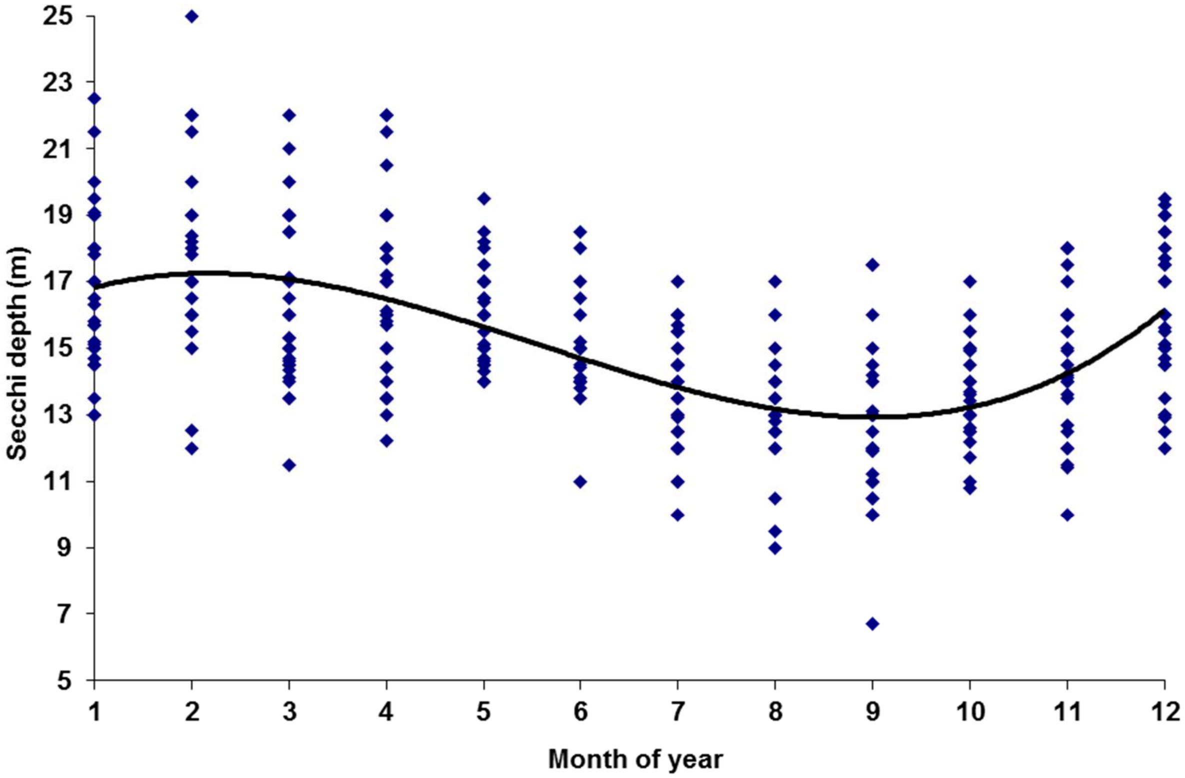

Figure 9: Seasonal cycle of water clarity (1994 -2012). The annual pattern of all water clarity data has a seasonal cycle with minimum clarity occurring usually in September.

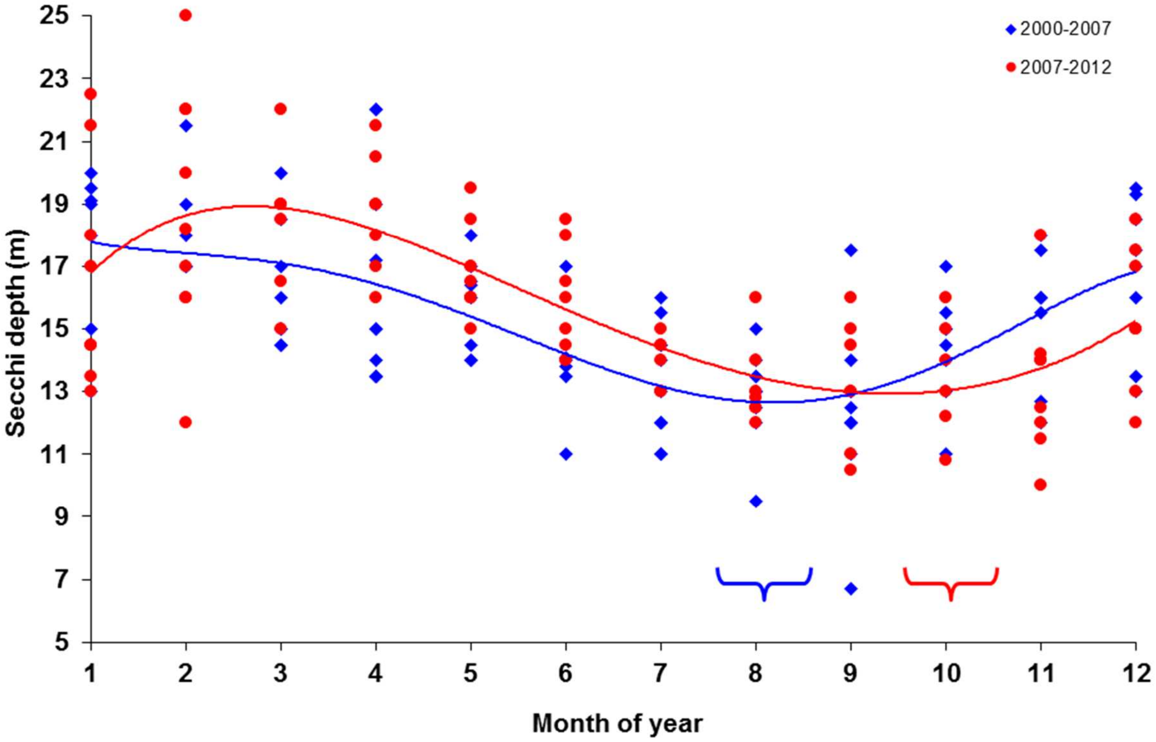

Figure 10: The timing of minimum water clarity has recently changed. Between 2000 and 2007 (blue), minimum water clarity occurred in winter (August). Since 2007 (red) minimum water clarity has occurred two months later in spring (October). Water clarity in summer was higher after 2007 than before. Curves are 3rd order polynomials fitted to the data.

4.4 Phytoplankton

Chlorophyll *a* concentrations tend to be maximum during the winter algal bloom and minimum in summer. As would be expected, there is a statistically significant inverse logarithmic relationship between chlorophyll *a* concentration and Secchi disk depth (Gibbs 2006) although the long term data suggests that both Secchi depth (Figure 8) and chlorophyll *a* (Figure 11) are increasing

The previously reported long-term trend of increasing mean and maximum chlorophyll *a* concentrations in the upper 10 m of the water column at the mid-lake site (e.g., Gibbs 2010b), has not changed substantially. With addition of the 2011/12 data, the trend in mean concentration is only weakly statistically significant ($P = 0.07$) (Figure 11) but there is an apparent pattern of increase and decline in the overall data set (Figure 12).

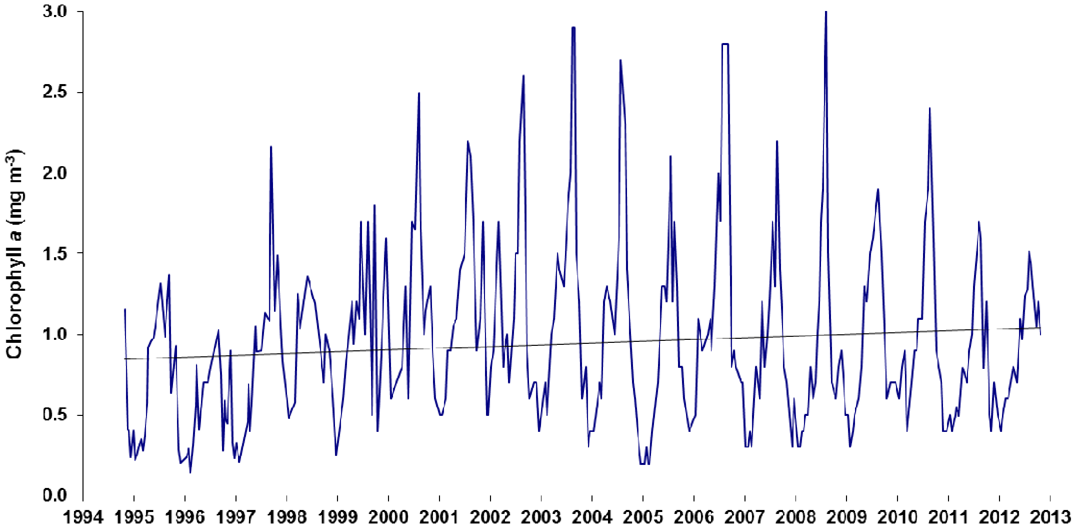

Figure 11: Time-series chlorophyll *a* concentrations in the upper 10 m of Lake Taupo. The solid regression line represents a weakly statistically significant increase in the mean chlorophyll *a* concentrations of 0.0108 ± 0.0118 mg m^{-3} y^{-1} (P = 0.074, r^2 = 0.0105, n = 306). Date ticks are 1 January in each year.

The apparent increase-decrease pattern is driven by a statistically significant increase in the annual mean chlorophyll *a* concentrations of 0.087 ± 0.029 mg m^{-3} y^{-1} (P < 0.001, r^2 = 0.857, n = 10) from 1994 to 2003, and a statistically significant decrease of 0.024 ± 0.019 mg m^{-3} y^{-1} (P = 0.017, r^2 = 0.417, n = 13) from 2000 to 2012 (Figure 12).

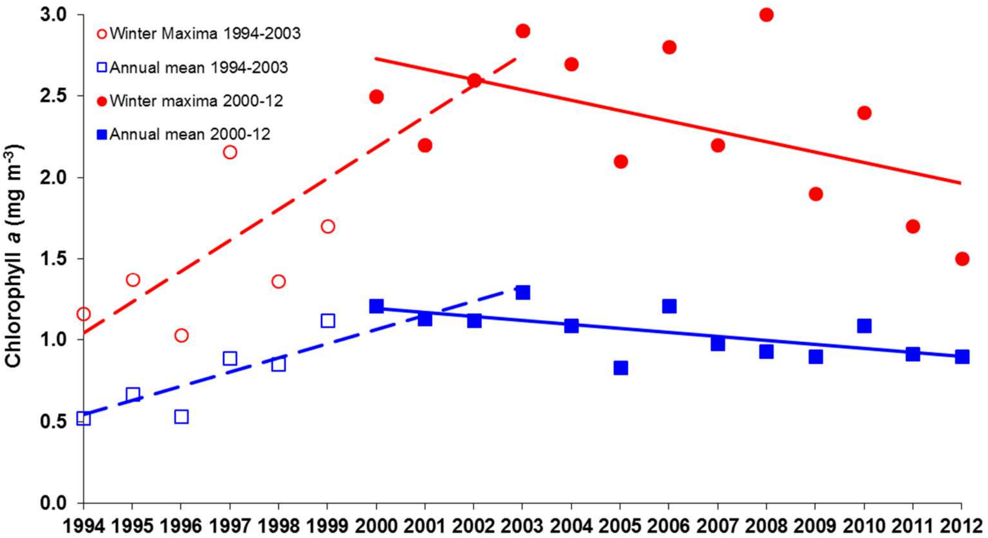

Figure 12: Annual mean and maximum chlorophyll *a* concentrations. Annual mean and winter maximum chlorophyll *a* concentrations from the 10-m tube samples since 1994. Regression lines indicate significant (P <0.001) trends of increase between 1994 and 2003 (broken lines) but non-significant (P = 0.2; maximum) and weakly significant (P = 0.04; mean) trends of decrease from 2000 to 2012 (solid lines). These regressions overlap between 2000 and 2003. Regression slopes are given in the text. Date ticks are 1 January in each year.

A similar pattern is seen in the annual maximum chlorophyll *a* concentrations with a statistically significant increase of 0.19 ± 0.086 mg m^{-3} y^{-1} ($P < 0.001$, $r^2 = 0.765$, n = 10) from 1994 to 2003, and a weakly statistically significant decrease of 0.063 ± 0.12 mg m^{-3} y^{-1} ($P = 0.06$, $r^2 = 0.285$, n = 13) from 2000 to 2012 (Figure 12). The mean of the annual maxima since 2000 was 2.35 ± 0.1 mg m^{-3}. There was no significant change during the period 1994-2012.

The overlap period between 2000 and 2003 indicates that the data set reflects a curve rather than two discrete periods. Compared with the two-period linear regressions (Figure 12) the winter maximum chlorophyll *a* data are best described by a 4th order polynomial curve (Figure 13).

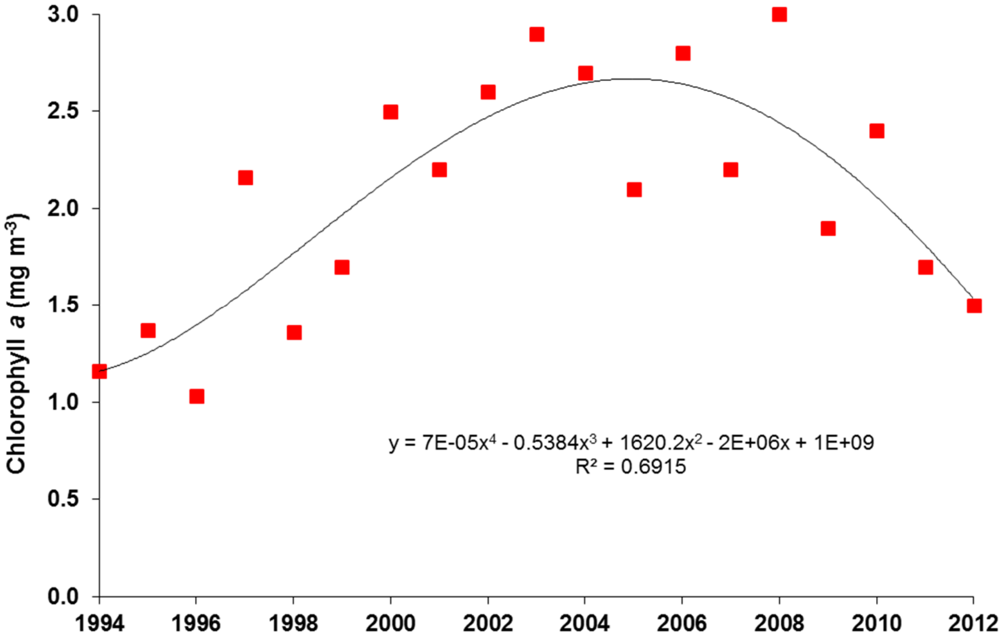

Figure 13: Time-series winter chlorophyll *a* maximum concentrations These are best described by a 4th order polynomial curve.

4.5 Deep chlorophyll maxima

The monitoring programme uses chlorophyll *a* concentrations (extracted from water samples) as an indicator of phytoplankton biomass in the upper 10 m because surface layer chlorophyll *a* concentrations can be directly related to water clarity (Secchi depth). However, the use of the profiler fitted with a chlorophyll fluorescence sensor indicates that a large proportion of the phytoplankton biomass in Lake Taupo through spring and summer is associated with the base of the metalimnion (circa 40 to 50 m depth) as a deep chlorophyll maxima (DCM) (e.g., Figure 5B; Figure 14). The DCM typically has a higher proportion of the total phytoplankton biomass than the upper 10 m layer, as demonstrated in Gibbs (2007). The use of a 30-m integrated tube sampler in 1974/75 would have included part of the DCM, accounting for the higher chlorophyll *a* concentrations at that time (Gibbs 2010b). The DCM was present throughout the spring-summer phase of the 2011/12 stratified period with chlorophyll fluorescence (Chl-Fl) values comparable with previous years.

The chlorophyll fluorescence profile data can be converted to chlorophyll *a* concentrations by calibration against extracted chlorophyll *a* data from discrete water samples collected from selected depths. Below 20 m depth, the resulting chlorophyll *a* concentrations estimated by the fluorescence profiler are typically within 5% of concentrations measured by extraction from the discrete water samples (Figure 14). However, above 20 m, fluorescence quenching by sunlight means the fluorescence data cannot be used directly and a correction curve is derived by regression to provide estimates closer to the surface. The integrated tube samples provide measured chlorophyll *a* concentrations in the upper 10 m. Differences between the two estimates below 80 m depth (Figure 14) are in part due to reporting the analytical results to one decimal place.

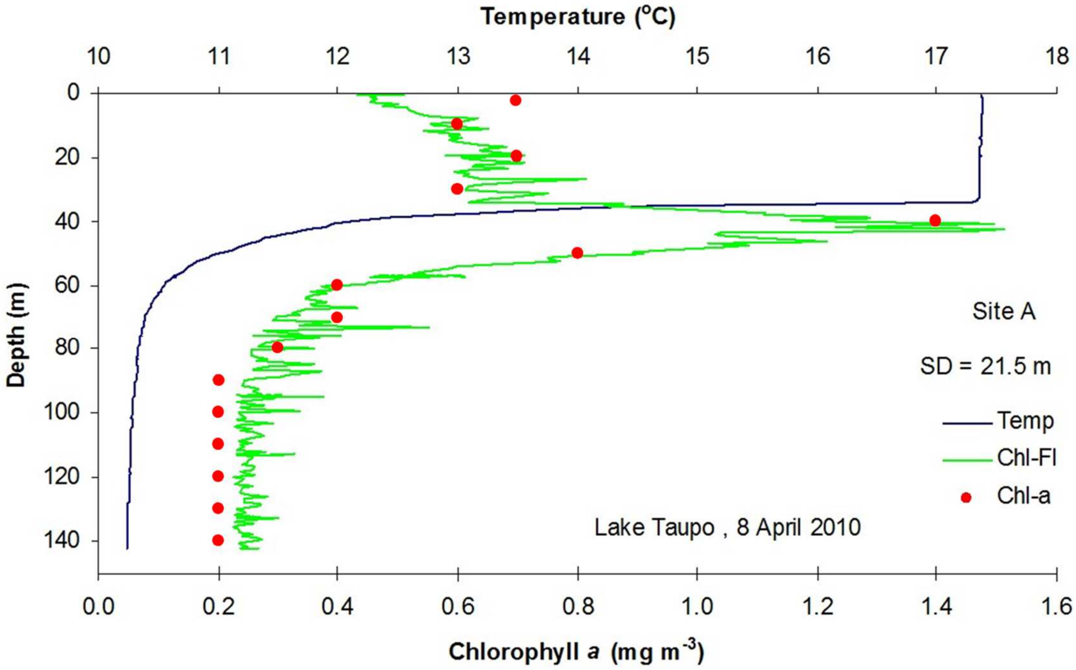

Figure 14: Deep chlorophyll maxima. Example of a deep chlorophyll maxima in Lake Taupo measured by chlorophyll fluorescence (Chl-Fl) on 8 April 2010 compared with extracted chlorophyll *a* (Chl-a) concentrations (red dots) from water samples collected at 10 m depth intervals on the same day. The peak phytoplankton biomass lies just below the thermocline.

Comparison of the chlorophyll *a* concentrations in the DCM with those in the upper 10 m for the last 5 years shows that the greatest difference in biomass typically occurs during summer stratification (Figure 15A). Plotted as the percent difference (Figure 15B), these data also show that there is some level of DCM is present throughout the year except during winter mixing.

While the time-series DCM chlorophyll *a* concentrations (Figure 15) are the maximum values for the phytoplankton biomass around the thermocline, often the DCM peak is broad encompassing a 20 m to 40 m thick layer (Figure 14; Figure 16). Consequently, the DCM can contain a high proportion of the total phytoplankton biomass in the lake. On occasion this may be more than 70% of the total phytoplankton biomass.

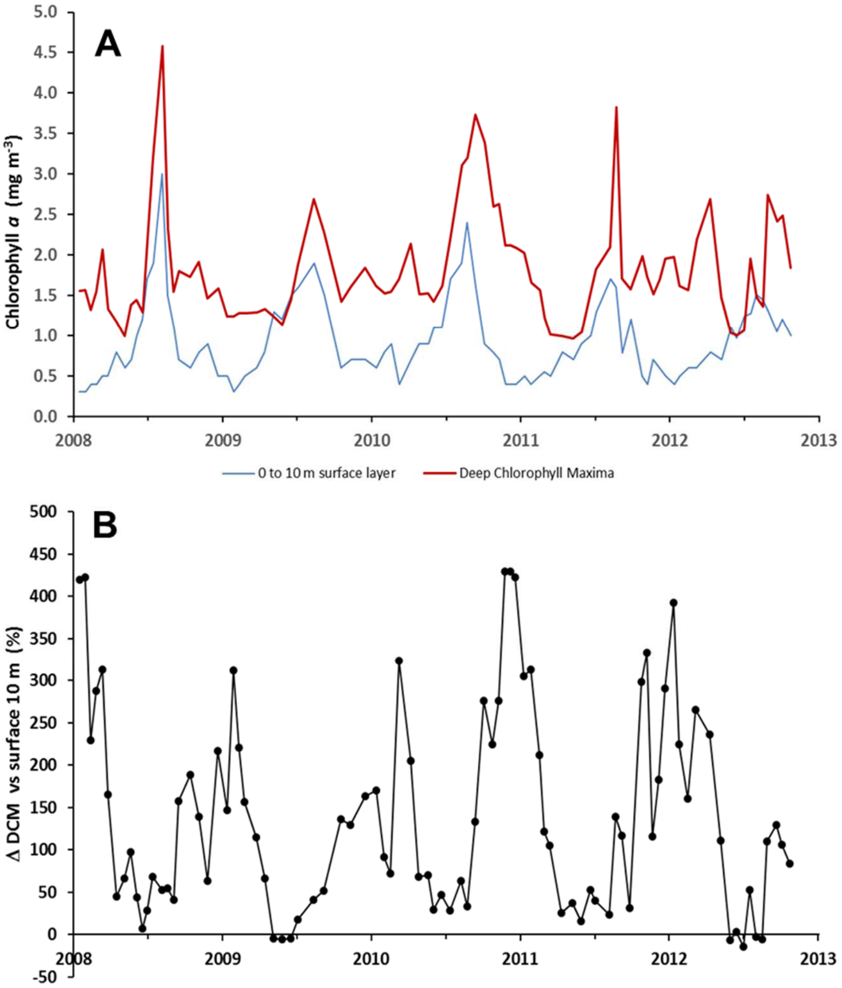

Figure 15: DCM data from 2008 to 2012. A) Comparison of chlorophyll a concentrations in the 0 to 10 m layer and the DCM, and **B**) Percentage (%) difference between the DCM and the 0 to 10 m depth layer.

Time-series chlorophyll fluorescence profile data also provide an insight as to how the phytoplankton biomass (and thus the particulate nutrients) are distributed through the water column over the summer to the winter mixing period (Figure 16). For example, in 2010 the February and April profiles show the DCM as a narrow band centred between 40 and 50 m. The June profile shows that wind mixing had dispersed the phytoplankton biomass through the epilimnion. In July epilimnetic phytoplankton biomass had increased and moved down with the thermocline leaving less phytoplankton biomass near the surface. In September, after winter mixing, the phytoplankton biomass had increased even more but was settling down through the whole water column.

While photo quenching of the chlorophyll fluorescence signal occurs during summer because of the high solar radiation levels, the effect is less pronounced during winter months because the sun is at a lower angle and less intense. Consequently, the chlorophyll fluorescence profiles follow the chlorophyll *a* data more closely. Although the phytoplankton biomass is settling through the water column in September, turbulence can hold part of that biomass high in the water column and this forms the core of the DCM when thermal stratification begins in October.

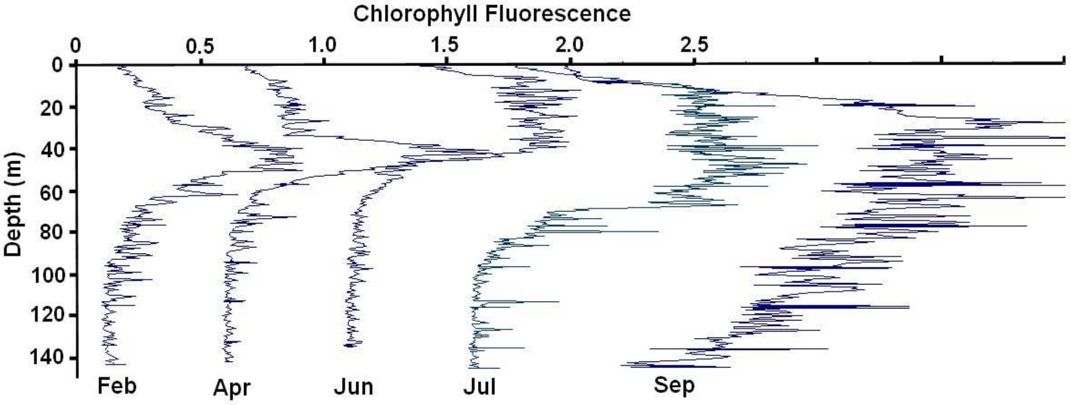

Figure 16: Fluorescence profiles in Lake Taupo. Selected sequential chlorophyll fluorescence profiles during 2010 showing the progression from a deep chlorophyll maxima in summer to its disappearance and sedimentation of algal matter during the winter bloom. Each profile is offset to the right by successive 0.5 chlorophyll fluorescence units for clarity.

4.6 Algal species abundance

In spring 2011, the algal species assemblage was dominated by the diatoms *Asterionella formosa*, *Fragilaria crotonensis* and *Aulacoseira granulata*, each accounting for about 50%, 25% and 20%, respectively, of the biovolume in the upper 50 m of the water column. Subsequently, *Fragilaria* became the dominant species through the remainder of the year accounting for more than 65% of the biovolume. While *Botryococcus braunii* was present through summer, cell numbers were very low. Dinoflagellates, mainly *Gymnodinium sp.*, increased through summer but were a variable and low component of the biovolume. Cyanobacteria, mainly *Dolichospermum planctonica* (formerly *Anabaena planctonica*) were occasionally present in the surface waters at low abundance and biovolume throughout much of the 2011/12 monitoring period and reached maximum abundance in late autumn.

In spring, the deep chlorophyll maximum at a depth of 50m (van Dorne sample) was dominated by *Asterionella formosa* and *Aulacoseira granulata* with *Fragilaria crotonensis* as a minor component of the algal assemblage until October when *Fragilaria crotonensis* became the dominant species. *Fragilaria* remained the dominant species in the DCM throughout the remainder of the 2011/12 monitoring period. There was considerable variability in the biovolume in the DCM sample relative to the 0 to 10 m samples, ranging from more than double to half the biovolume in the 0 m to 10 m. This is due to the van Dorne sampler not always collecting water from the centre of the DCM peak.

4.7 Nutrients in the upper waters

The 2011/12 concentrations of DRP (Figure 17A), NH_4-N (Figure 17B), NO_3-N (Figure 17C) and DON (Figure 17D), were within the range of previously measured values, except for DRP. As previously noted (Gibbs 2006), nutrient concentrations decreased abruptly at the time of the Mount Ruapehu eruptions in 1995 and slowly returned to pre-eruptions levels (Figure 17). Since 2003, maximum concentrations of NO_3-N and NH_4-N in the surface layer (Figure 17B and C) have mostly coincided with winter mixing periods when vertical mixing returns nutrients from bottom waters to the surface layer. Higher DRP concentrations have also been observed during winter mixing in 2009, 2011 and 2012 (Figure 17A).

The NH_4-N concentrations in the upper water column have been relatively elevated since the beginning of 2007 compared with period from 2003 to 2007 (Figure 17B). NH_4-N usually appears in the surface water at the time of winter mixing and can be attributed to upwelling of nutrient-rich bottom water. However, occasionally elevated NH_4-N concentrations occur at other times through the year not linked to upwelling events. Elevated NH_4-N concentrations during the stratified period may be the result of microbial decomposition of senescing phytoplankton or excretion by zooplankton which have grazed the phytoplankton to a low biomass in the surface waters (Figure 11). The reason for low phytoplankton biomass may be associated with the dominance of the phytoplankton assemblage by diatoms which are likely to sink during extended periods of calm conditions that occur over summer.

Another potential source of NH_4-N may be associated with hydrothermal venting in the bottom of the lake. Geothermal waters often have a high concentration of NH_4-N.

During the 2008/9 monitoring period, DON concentrations fell below the long-term minimum value of around 29 mg m^{-3} for the first time since the beginning of the monitoring programme. It has been assumed that the minimum amount of DON consists of refractory organic material. During the 2010/11 monitoring period, DON concentrations also fell below 29 mg m^{-3} during September and October before increasing to more typical values of 40 to 50 mg m^{-3}. Increases above 60 mg m^{-3} coincided with hydrothermal eruption events as indicated by conductivity anomalies observed in the CTD profile data. DON concentrations were above the long-term minimum value throughout the 2011/12 monitoring period.

Labile DON is an intermediary product of the decomposition processes occurring in the sediment. DON accumulates in the sediment pore water where it is further mineralised to NH_4-N and can be nitrified to NO_3-N. DRP mineralised from organic matter also accumulates in the sediment pore water. Hot water rising to the surface during a hydrothermal eruption entrains bottom water, including surficial sediment and pore water, bringing it to the lake surface. This may explain the sudden increase in epilimnetic nutrient concentrations from time to time (Figure 17) which would imply entrainment of hypolimnetic water may be a mechanism for pumping nutrients into the epilimnion of Lake Taupo without a full mixing event. From conductivity anomalies in the CTD profile data, hydrothermal eruption events are relatively common in Lake Taupo. That the time-series data does not show a large peak on each occasion may be due to pore water depletion during frequent or extended eruptions, or the sampling frequency, which may not coincide with a hydrothermal eruption event. Much of the variability in the nutrient data (Figure 17) may be due to such events.

Except during winter mixing, NH_4-N concentrations in the hypolimnion are usually very low (<1 mg m^{-3}) due to high rates of nitrification at the sediment–water interface and in the water column (Vincent & Downes 1981). A loss of benthic and planktonic nitrifiers associated with the volcanic ash from the Mount Ruapehu eruptions in 1995/96 may explain the absence of NO_3-N and the elevated NH_4-N concentrations in the epilimnion for about a year after the eruption (Figure 17B and C).

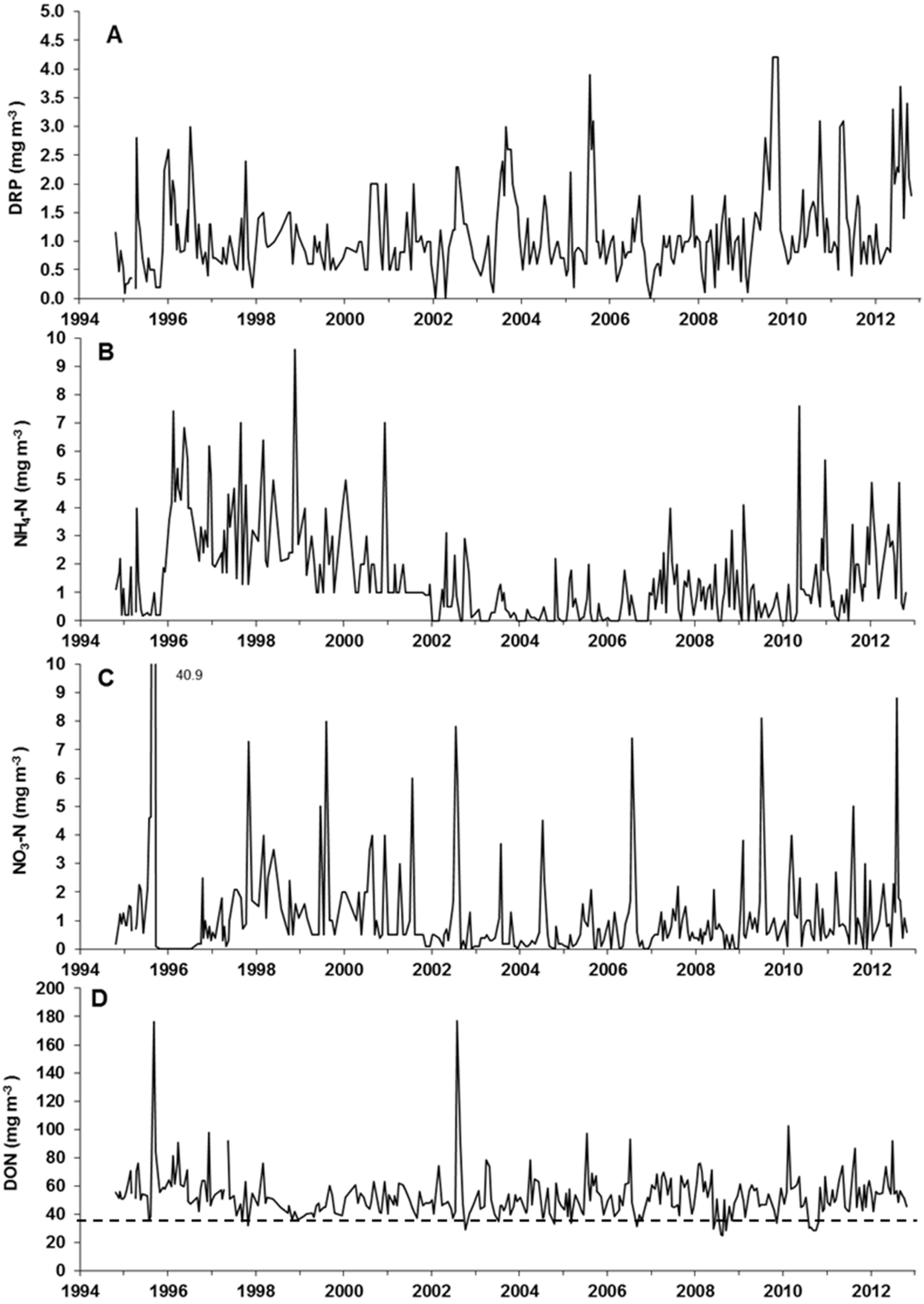

Figure 17: Time series nutrient data in Lake Taupo. Time series data from the top 10 m of the water column in Lake Taupo for (**A**) dissolved reactive phosphorus (DRP), (**B**) ammoniacal nitrogen (NH_4-N), (**C**) nitrate + nitrite nitrogen (NO_3-N), and (**D**) dissolved organic nitrogen (DON). Broken line indicates the long term minimum DON concentration of 29 mg m^{-3}, which may be mostly refractory organic material. Date ticks are 1 January in each year.

4.8 Nutrient accumulation in the hypolimnion

Dissolved inorganic nutrients in water samples from 150 m depth demonstrate consistent seasonal patterns driven by the mixing in winter (Figure 18). A sudden drop in DRP and NO_3-N concentrations usually occurs around the beginning of August as a result of winter mixing. In 2008 and 2009 mixing began in mid to early July but, did not occur until late September 2010, and the mixed period was brief (Figure 2). Winter mixing in 2011 began in early July and consequently, the DRP concentrations were lower than in the previous 4 years, consistent with the shorter accumulation period (Figure 18). In the 2011/12 monitoring period, the lake had not mixed by July and finally mixed in September 2012 (Figure 18). This extended period of accumulation resulted in higher DRP concentrations than in the previous 9 years (Figure 18).

Hypolimnetic NO_3-N concentrations before the onset of winter mixing have been consistently around 32-35 mg m^{-3} since 2004, after declining from a maximum of 46 mg m^{-3} in 2001. The 2011/12 results follow this pattern for NO_3-N (Figure 18). During each brief mixing period, NH_4-N is released into the bottom water (Figure 18), but its maximum concentration has decreased from around 9 mg m^{-3} in 2001 to around 4-5 mg m^{-3} during mixing in winter 2009. In winter 2011 NH_4-N concentrations almost reached 7 mg m^{-3}. The source of this NH_4-N is not clear but it may be derived from pore water in the sediment which would be disturbed by the mixing currents associated with the winter mixing event.

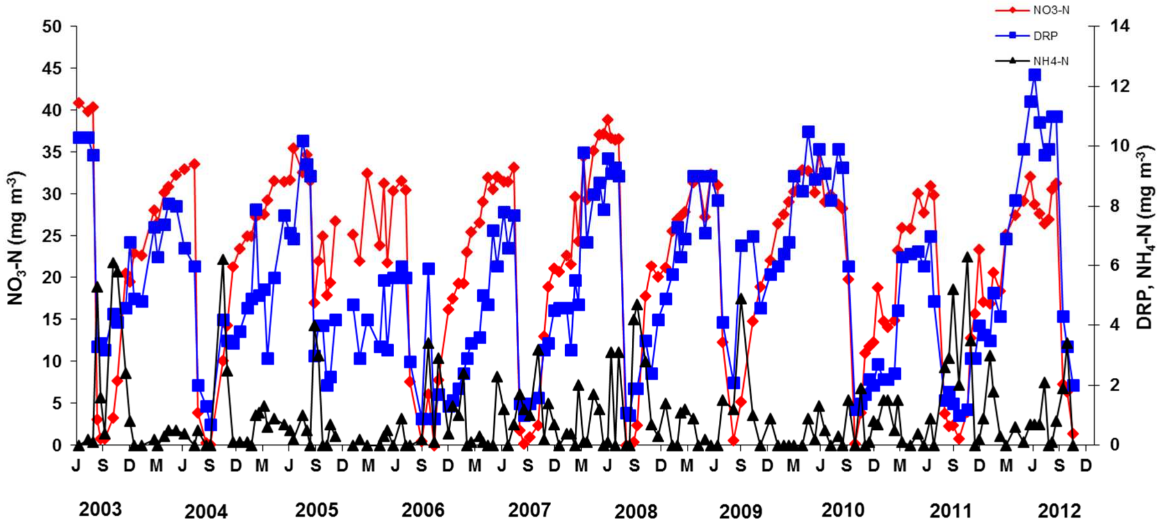

Figure 18: Time series bottom water nutrient data. DRP, NO_3-N and NH_4-N concentrations in the bottom waters (150 m depth) of Lake Taupo since winter mixing of 2003.

4.9 Total mass accumulated

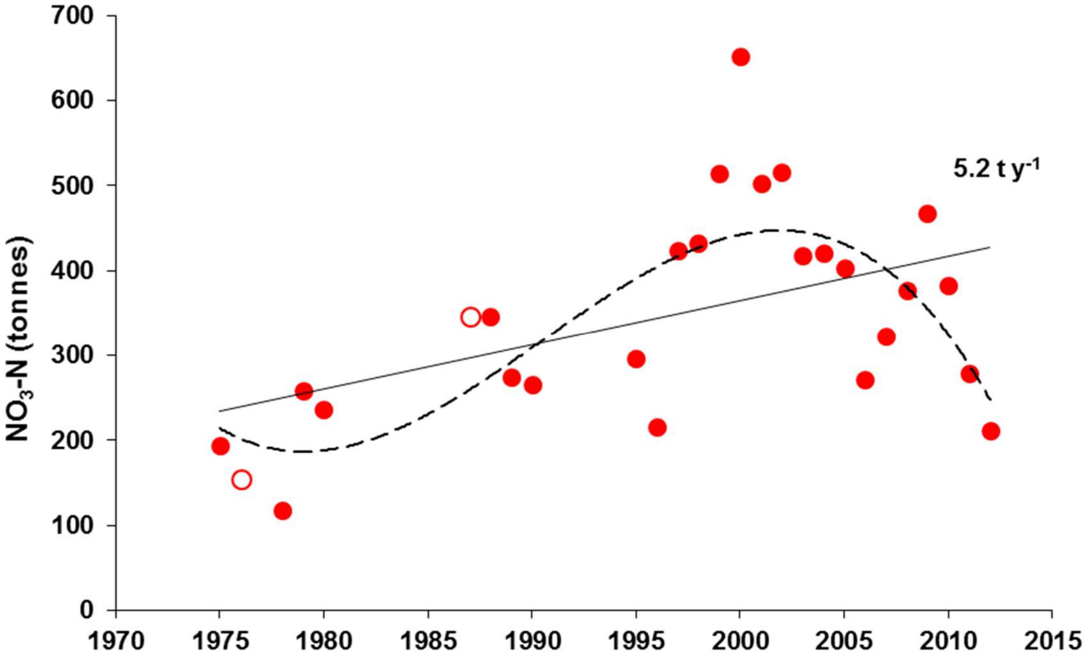

Figure 19: Total mass of NO_3-N in the hypolimnion of Lake Taupo in autumn before winter mixing. .The linear regression (solid line) indicates a statistically significant increase of 5.2 t y^{-1} (P =0.02, $r^2 = 0.21$, n = 25). Temporal changes in the data are better described by a 3rd order polynomial (dashed line) ($r^2 = 0.547$) which accommodates a rise and fall in the data over the monitoring period since 1974. Open circle data were excluded from regression as time periods and sampled depths were not the same as used for the other data. Date ticks are 1 January in each year.

The total mass[1] of NO_3-N in the hypolimnion (below 70 m depth) in autumn each year before the onset of winter mixing has ranged from about 120 t (1978) to more than 650 t (1999) (Figure 19). While this graph is similar to those in earlier reports, it also includes additional information from historical data sets held by NIWA. The historical data used to produce the additional data points from 1988 to 1990 are given in Appendix 6. Since 1975 there has been a statistically significant (P =0.02, $r^2 = 0.21$, n = 25) increase in the total mass of NO_3-N of around 5.2 t y^{-1} in the hypolimnion before winter mixing (Figure 19). The total mass of NO_3-N in the hypolimnion in April 2012 was around 212 t, a decrease of around 70 t since 2011, but still within the range of inter-annual variability in the recent data (Figure 19).

It is apparent that the use of a linear regression through the data does not indicate that a change in the amount of NO_3-N accumulating in the hypolimnion occurred around 2000, at which time the annual amount that accumulated began to decrease. The resultant time-series of annual total mass accumulated data are better described by a 3rd order polynomial ($r^2 = 0.547$) than a linear regression ($r^2 = 0.21$).

These time series data could also be described by three linear regressions (not shown in Figure 19). From 1975 to 1996 there was a non-significant increase of 4.37 ± 0.03 t y^{-1} (r^2 =

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[1] In earlier reports the total mass of NO_3-N in the hypolimnion each year has been referred to as the “total accumulated mass” of NO_3-N. It is the “standing stock” of NO_3-N at that time

0.27, P = 0.15, n = 9); from 1996 to 2000 there was a period of significant increase at 96.3 ± 51.4 t y^{-1} ($r^2 = 0.92$, $P < 0.01$, n = 5); and from 2000 to present, there was a period of significant decrease at 23.7 ± 12.4 t y^{-1} ($r^2 = 0.615$, $P < 0.001$, n = 13). The choice of temporal break points is based on the beginning of the present long-term monitoring programme (1994 on) and the shift from increase to decrease around 2000. This shift, from increase to decrease, is also seen in the chlorophyll *a* data (Figure 12). While the change in the chlorophyll *a* maximum can be explained as a response to the change in the amount of NO_3-N released at winter mixing, the cause of the change in the amount of NO_3-N released is not known.

4.10 Net accumulation rate

The total mass of NO_3-N in the hypolimnion before winter mixing is the sum of the mass of NO_3-N in the hypolimnion at the beginning of the stratified period and the net mass that was released from the sediments as well as from decomposing plankton that accumulated in the hypolimnion during the stratified period. There will also be some assimilation of NO_3-N by phytoplankton in the DCM during spring but, because the net accumulation rate calculation uses data below 70 m (20 m to 30 m below the DCM), this effect may be minimal. The difference between the standing stock of NO_3-N at the beginning and end of the stratified period is the net mass of NO_3-N accumulated in the hypolimnion.

To determine the net accumulation rate of NO_3-N in the hypolimnion, the total mass data below 70 m depth (Figure 19) have been transformed into accumulation rate data by subtracting the mass present in spring from the mass present in autumn and dividing by the number of days between the spring and autumn samplings (Figure 20).

Mineralisation and release of nutrients from the sediments are driven by microbial processes that are a function of temperature and dissolved oxygen concentration. As the hypolimnion is well oxygenated and the temperature remains constant within ± 0.3 ^{o}C, a fairly constant rate of net accumulation is expected throughout the stratified season. There was a weakly significant increase in the net accumulation rate of 0.025 ± 0.03 t d^{-1} per year ($P = 0.07$, $r^2 = 0.144$, n = 24) since 1975 (Figure 20), which was similar to the previous report. The data for 1976 and 1987 were excluded from the regression analysis because they were estimated using different periods than the rest of the data (see also Figure 19). The data points for 1976 and 1987 are included in Figure 20 as an indication of what the net accumulation rates may have been in those two years.

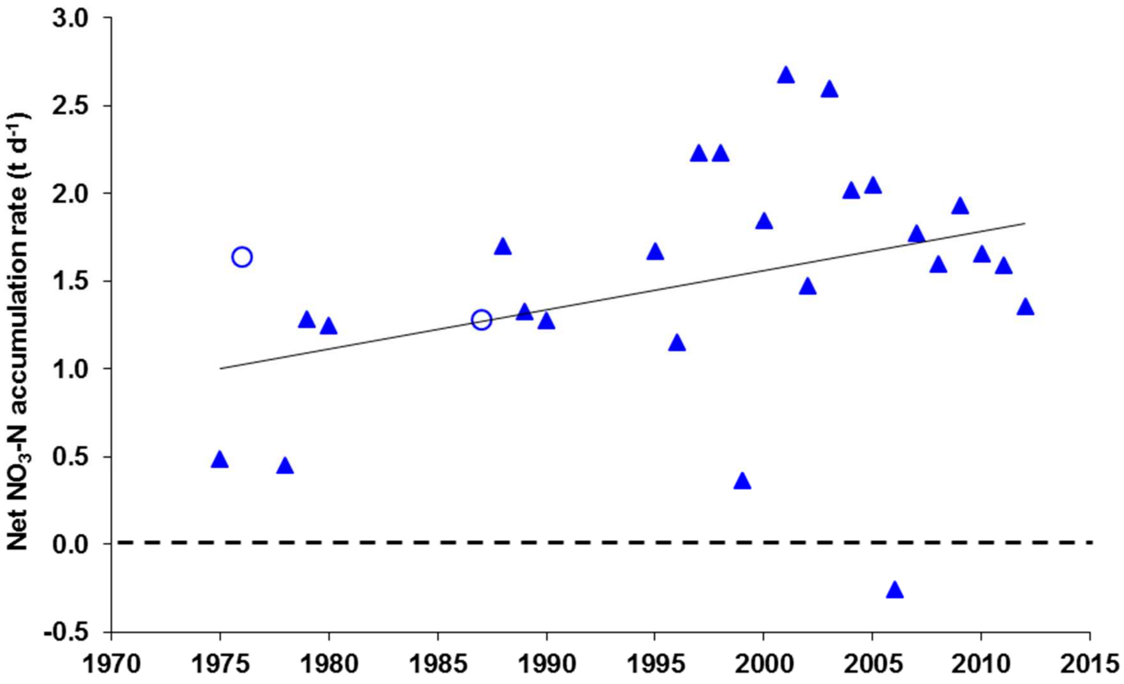

Figure 20: Net Hypolimnetic NO_3-N accumulation rates. Net NO_3-N accumulation rates (t d^{-1}) in the hypolimnion below 70 m. The regression line shows an increase in the net accumulation rate of 0.022 ± 0.026 t d^{-1} ($P = 0.08$, $r^2 = 0.125$, n = 25). Open circle data were not included in the regression analysis (see text). Note that the Y-axis extends to -0.5 t d^{-1} for the 2006 data point. Date ticks are 1 January in each year.

The net accumulation rate for the 2011/12 period was 1.36 t d^{-1}, which was almost 20% lower than the previous year (1.59 t d^{-1}). The time-series of net accumulation rates of NO_3-N (Figure 20) show a high degree of variability between years, with the 1999 and 2006 data points falling well below the trend line. The negative net accumulation rate in 2006 indicates a net loss of NO_3-N from the hypolimnion during the 2005-06 stratified period. Both of these data points are for years following a winter where there was incomplete mixing. This suggests that those two low values are anomalies relative to the rest of the data. The effect of incomplete mixing was discussed in an earlier report (Gibbs 2007). Excluding those two values, the net accumulation rates of NO_3-N shows a highly significant increase of 0.029 ± 0.018 t d^{-1} (P <0.003, $r^2 = 0.36$, n = 23) with the regression line rotating closer to the early (1975 and 1978) data.

4.11 Total N

Total nitrogen (TN) mass in Lake Taupo was estimated from the spring profile in each year. There was no statistically significant trend in the total mass of TN (Figure 21). The mean was 3310 t, contrasting with a net annual external TN input to the lake of around 1200 t (W. Vant, Waikato Regional Council, pers. comm.). The total mass of TN in Lake Taupo in spring 2011 was 2220 t, 920 t less than in the previous year.

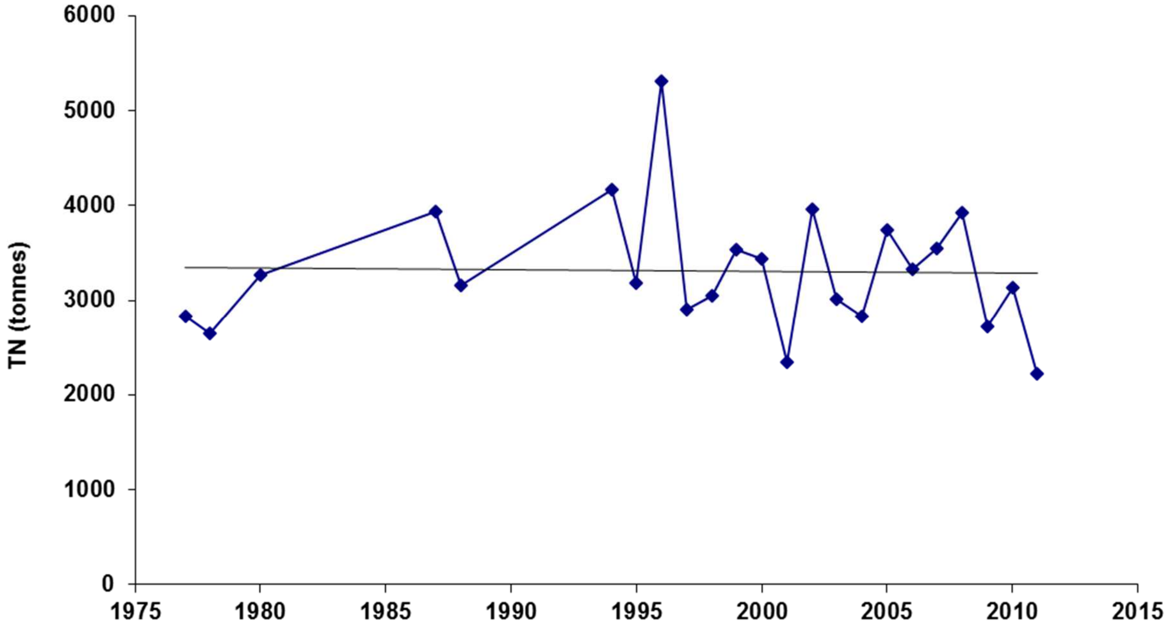

Figure 21: Estimates of the mass of total nitrogen (TN) in Lake Taupo. Although there was an average decrease of about 1.6 t y^{-1} from 1975 to 2012, this apparent trend in the data is not statistically significant. The mean was 3310 t. Date ticks are 1 January in each year.

5. Knowledge gaps

1. An earlier report (Gibbs 2006) listed several knowledge gaps including in-lake processes in Lake Taupo, and process rates at the sediment-water interface. This report presents estimates of the net rate of NO_3-N accumulation in the hypolimnion during the stratified period as well as estimates of the net efflux of inorganic nitrogen from the sediments. Together these data indicate that the net NO_3-N accumulation rates in 1999, and 2006 may be anomalous. These years have in common that they followed a year of incomplete mixing in winter. The immediate return of the net accumulation rate to the trend in the net accumulation rate data the following year, points to water column processes being as important as sediment processes for controlling hypolimnetic NO_3-N concentrations and highlights the need to understand how the water column processes work in Lake Taupo.

2. The sum of the external inputs to the lake from the catchment via rivers minus the mass lost from the lake via the Waikato River is estimated to be around 1200 t y^{-1} (W. Vant, Waikato Regional Council, pers. comm.). Despite this net input of TN, which represents around a third of the average mass of N in the lake (3310 t), there is no significant increase in the long term TN in the lake (Figure 21). In contrast the change in the mass of TN fell by 920 t in the 2011/12 monitoring period, almost balancing the estimated net input of TN.

   The total mass of NO_3-N in the hypolimnion just before winter mixing each year appears to reach a plateau (see shape of NO_3-N concentration curves, Figure 19). This may be explained by diffusion across an increasing concentration gradient in the metalimnion or assimilation by algae in the DCM.

   Together these data suggest that processes at the sediment-water interface and elsewhere in the hypolimnion are capable of sequestering a very large amount of N each year. However, the net increase in accumulation rate of NO_3-N in the hypolimnion suggests that the sediment processes of nitrogen burial, decomposition, mineralisation, nitrification, denitrification and assimilation are changing.

   We have little or no information on any of these N transformation and sequestration process rates in Lake Taupo.

3. The appearance of NH_4-N along with higher concentrations of DRP in the upper water column during late spring and summer in since 2007, is unusual as these nutrients are usually rapidly assimilated in Lake Taupo by phytoplankton. The source of the epilimnetic NH_4-N is unknown.

4. In February 2010 and January 2011, sampling coincided with hydrothermal eruption events in the lake floor (e.g., Figure 5). These events brought sediment to the lake surface (personal observation) together with a pulse of NO_3-N and DON. The latter is presumed to have come from sediment pore water. This observation suggests that these periodic hydrothermal events bring additional nutrients into the upper water column. Also, it is not clear whether there are nutrients in the geothermal sources in the lake bed and whether they have a significant role in the nutrient budget of the lake. More information is required on how hydrothermal eruption events affect the water quality of Lake Taupo.

5. The mean annual water clarity and the mean annual chlorophyll *a* concentrations in the upper 10 m of the water column have increased significantly since 1994. These parameters are usually inversely related and thus other factors must be influencing the relationship between water clarity and phytoplankton biomass. Notably, the DCM can contain up to 70% more chlorophyll *a* than in the upper 10 m layer. This represents a substantial amount of the algal biomass which is not being assessed in the monitoring reports, although it is measured as chlorophyll fluorescence at every sampling occasion. More information is required on relationship between the DCM and nutrient concentrations in the hypolimnion and how the DCM affects the VHOD estimate in the lake.

6. Summary

- Using a linear regression through all data, the annual mean chlorophyll *a* concentration in the upper 10 m of water column in Lake Taupo, as an indicator of phytoplankton biomass, has increased at a rate of 0.014 ± 0.013 mg m^{-3} y^{-1} (P =0.074, r^2 = 0.0105, n = 306) over the 18 year monitoring period.

- There is a substantial deep chlorophyll maxima (DCM) below the thermocline (40 m) in the lake during spring and summer with estimated chlorophyll *a* concentrations up to 450% higher than the chlorophyll *a* concentrations measured in the upper 10 m. Assessment of the DCM for the last 5 years suggests that it often contains a high proportion of the total phytoplankton biomass and occasionally may account for more than 70% of the total biomass in the lake. The DCM was present through the 2010/11 spring and summer period.

- It has become apparent that the increase in chlorophyll *a* concentrations in the top 10 m may not be a linear trend. The annual mean chlorophyll *a* data from 1994 to 2003 increased at a statistically significant rate of 0.087 ± 0.029 mg m^{-3} y^{-1} (P < 0.001, r^2 = 0.857, n = 10), but since 2000 there has been a significant trend of decline at a rate of 0.024 ± 0.019 mg m^{-3} y^{-1} (P <0.05, r^2 = 0.42, n = 13). These latter data suggest an improvement in lake water quality, but may also indicate a redistribution of phytoplankton production to the DCM.

- After 2000, peak chlorophyll *a* concentrations in winter have become highly variable ranging from 2.4 mg m^{-3} in 2010 to 1.9 mg m^{-3} in 2009, but falling to 1.5 mg m^{-3} in 2012.

- Algal species composition in winter 2010 was dominated by diatoms, *Asterionella formosa, Fragilaria crotonensis* and *Aulacoseira granulata*, each initially accounting for about 50%, 25% and 20%, respectively, of the biovolume in the upper 50 m of the water column. *Fragilaria* became dominant for the remainder of the 2011/12 monitoring period. The dinoflagellate, *Gymnodinium sp*. increased in abundance through summer 2012. Cyanobacteria (blue-green algae) were always present in low numbers in the upper water column throughout the 2011/12 monitoring period, with *Dolichospermum planctonica* (formerly *Anabaena* planctonica) being the most common species which reach maximum abundance in Autumn.

- Although similar in species composition to the phytoplankton assemblage in surface waters, phytoplankton samples collected from the DCM by van Dorne sampler from a depth of 50 m were, on occasion, lower in biovolume. The low biomass compared with the DCM as indicated by the chlorophyll fluorescence profile was probably due to the van Dorne sampler not collecting water from the centre of the DCM peak.

- There was a statistically significant trend of increase in the total mass of NO_3-N in the hypolimnion before winter mixing of around 5.2 t yr^{-1} (P <0.02, r^2 = 0.21, n = 25) which was slightly lower than determined in the previous year. The amount of NO_3-N in the hypolimnion was around 70 t lower than the previous year.

- The net accumulation rate of NO_3-N in the hypolimnion below 70 m was in the order of 2 t d^{-1} in the early 2000s but has slowly decreased to around 1.5 in 2010/11. Regression analysis shows that there was a weak statistically significant trend of increase in the rate of 0.022 t d^{-1} each year ($P = 0.08$, $r^2 = 0.125$, n = 25) over the last 34 years. The net accumulation rate of NO_3-N in 2011/12 was 1.36 t d^{-1}, which is 0.2 t d^{-1}lower than the 2010/11 rate of 1.59 t d^{-1}.
- There was essentially no change in the whole lake TN, nor the long term mean load of 3310 t. However, the TN content of the lake in spring 2011 was only 2220 t, a decrease of around 920 t since the previous year.
- The 2011/12 net VHOD rate for the period from October 2011 to February 2012 was 11.33 ± 3.00 mg m^{-3} d^{-1} (mean ± 95% confidence limit) which was more than 6 mg m^{-3} d^{-1} lower than the previous year at 17.52± 3.95 mg m^{-3} d^{-1}.
- There has been a statistically significant (P <0.001, $r^2 = 0.62$, n = 14) increase in the VHOD rate of about 0.8 mg m^{-3} d^{-1} each year since the low in 1999, suggesting a decline in lake water quality. While the period of the regression analysis is selected from lowest to highest, and thus does not reflect a long-term trend in Lake Taupo, this sustained increase in VHOD over a 14-year period implies a change in the export of organic carbon to the hypolimnion over this period, either from external inputs (i.e., land-use effects), or internal sources such as primary production and sediment resuspension within the lake, or a combination of both external and internal sources.
- Nutrient concentrations (DRP, NH_4-N, and NO_3-N) in the upper water column were generally comparable with concentrations since 2003 and are similar to historical concentrations before Mount Ruapehu erupted in 1995. However, since 2006/07 there have been elevated NH_4-N but low NO_3-N concentrations in the upper water column through summer and autumn. In winter 2011 there were elevated DRP and NO_3-N concentrations in the upper water column. In autumn 2012 there was a hydrothermal event, associated with the eruption of Mount Tongariro, which resulted in elevated DRP, NH_4-N and NO_3-N concentrations in the surface waters.
- Maximum surface water temperatures are typically in the range of 17 ^{o}C to 21 ^{o}C with the warmest months being February and March. There is an apparent cyclical pattern in maximum water temperatures indicating cooler summers between 1999 and 2007 and warmer summers before and after. The maximum surface water temperature in summer 2012 at 19.1 ^{o}C, was around 1 ^{o}C cooler than in the previous 4 years.
- Bottom water temperatures were relatively constant at 10.9 ^{o}C throughout the 2011/12 monitoring period.
- Water clarity during summer 2011/12 was mostly around 16.5 m, but peaked at 18.5 m in December 2011. The lower clarity in January and February 2012 was

associated with cooler wetter conditions implying a measurable effect from land runoff. Water clarity dropped from the maximum 18.5 m on 8 December 2011 to 13 m on 22 December 2011. This was associated with a hydrothermal eruption event which appeared to entrain sediment into the surface waters.

- From 2000 to 2007, winter minimum clarity occurred around August. Since 2007, minimum clarity occurs around October, two months later. For the 2011/12 monitoring period, the minimum clarity was in October 2011.

In a previous annual report (Gibbs et al. 2002), three trends in the data were identified that were of concern with respect to the water quality of Lake Taupo. These were: increasing phytoplankton biomass in the upper 10 m; increasing NO_3-N mass in the lake hypolimnion prior to winter mixing; and an increasing range in the variability of water clarity.

While these trends are still present in the whole data set, there are indications that water quality may be beginning to improve e.g., mean annual chlorophyll *a* concentrations have been more or less steady since 2000. In contrast, however, the VHOD rates have been increasing since 1999, an indication that the water quality has declined since then. However, the low VHOD rate in 2011/12 suggests that a change in this pattern may now be occurring.

These contrasting indicators are not mutually exclusive. The steady or weakly significant decline in mean annual chlorophyll *a* concentrations is consistent with the nearly constant annual maximum hypolimnetic concentrations of DRP and NO_3-N in autumn for the last 8 years (Figure 18). These nutrients become available for algal growth after winter mixing. However, the persistent increase in the net VHOD rate indicating an increase in oxygen demand implies a change in the loading of organic carbon on the lake. The temporal disassociation of the chlorophyll *a* maximum in July-August from the minimum water clarity in October (Gibbs 2011) suggests that the carbon load through suspended sediment inputs from land may have increased in spring months when high rainfall occurred. There is also a substantial amount of carbon associated with the phytoplankton biomass in the deep chlorophyll maxima which is likely to have an effect on the VHOD rate as the phytoplankton senesce and decompose.

7. Acknowledgements

This report was made possible by the team effort of Philip King and Heath Cairns of the Taupo Harbourmaster's Office, and Eddie Bowman (NIWA Rotorua) who have collected the data. Much of the success of this monitoring programme is attributable to the extra effort by Eddie and the team.

Water samples were processed in the NIWA chemistry laboratory and analytical results were provided by Graham Bryers, Margaret McMonagle, Cara Mackle and team. Quality control was provided by Mike Crump, Lab Manager.

Phytoplankton dominance and enumeration results were provided by Karl Safi.

8. Glossary of abbreviations and terms

BOD	Biochemical Oxygen Demand: the rate of oxygen consumption associated with biological decomposition and chemical processes and in the water column.
VHOD	Volumetric Hypolimnetic Oxygen Demand: the net rate of oxygen loss associated with biological, chemical and physical processes in the hypolimnion of a lake in the absence of a temperature change.
Phytoplankton	Microscopic free-floating aquatic plants (algae).
Cyanobacteria	Blue-green algae. These are potentially toxic. They can adjust their depth in the water column using small gas bladders (gas vacuoles), and some species can use (i.e., fix) atmospheric nitrogen for growth when nutrient nitrogen in the water column is depleted.
Zooplankton	Small to microscopic free-swimming aquatic animals which graze on phytoplankton or smaller zooplankton.
Biomass	The living mass of the phytoplankton or zooplankton populations.
Thermal stratification	Separation of a water column into two layers by temperature – warmer water on top.
Thermocline	The boundary zone or temperature gradient between the two layers in a thermally stratified water column.
Epilimnion	The upper water column in a thermally stratified water column.
Hypolimnion	The lower water column in a thermally stratified water column.
Metalimnion	The thermocline zone — of variable thickness.
Euphotic zone	The upper water column in which there is sufficient light for photosynthesis and hence phytoplankton growth.
Euphotic depth	Lower limit of phytoplankton growth where light levels are 1% of surface irradiance.
Hydrothermal eruption	Sudden release of superheated water from volcanic vents in the bed of the lake. The source Is most likely infiltrating lake water heated by hot rocks. The heated water includes dissolved salts leached from the rocks and sediment.
Nutrients	Essential dissolved inorganic nitrogen and phosphorus compounds which can be used directly by plants for growth.
Ammoniacal nitrogen	Sum of ammonium ion (NH_4^+) plus free (unionised) ammonia (NH_3). Some amines (NH_2^-) may be included as interference during analysis. Symbol, NH_4-N.
Nitrate nitrogen	Used in this report as the sum of nitrate (NO_3^-) plus nitrite (NO_2^-). Symbol, NO_3-N.
DIN	Dissolved Inorganic Nitrogen: the sum of NH_4-N + NO_3-N.
DON	Dissolved Organic Nitrogen: the soluble nitrogen other than DIN.
PN	Particulate Nitrogen: includes phytoplankton and other detritus.
TN	Total Nitrogen: Sum of DIN + DON + PN.
NO_x	Gaseous oxides of nitrogen, including N_2O, NO, NO_2.

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Appendix 1. Site map, sampling strategy and methods

Site map

Lake monitoring sites were originally established using land-based markers (Figure 22). These have now been defined using GPS and corrected for curvature using WGS84 convention.

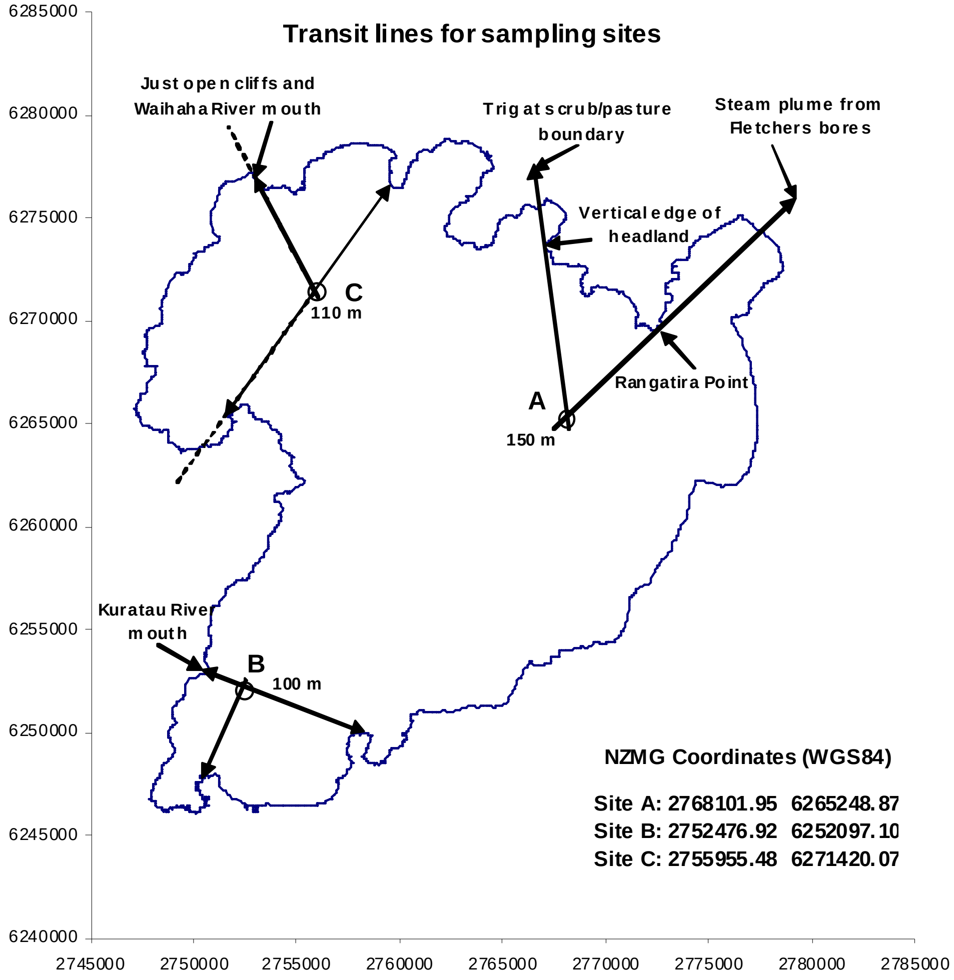

Figure 22: **Site map of Lake Taupo.** Site map of Lake Taupo showing location of the routine monitoring site at mid lake (A). Two additional sites at Kuratau Basin (B) and the Western Bays (C) were sampled between January 2002 and December 2004 inclusive. Data from those sites have been retained with the Site A data presented in the appendices. Map coordinates are in NZ Map Grid with WGS84 correction. Lat. Long WGS 84 corrected co-ordinates of "Site A" are 38° 46'.810 S; 175° 58'.440 E.

The following section has been copied from Gibbs 1995, and modified after 1998.

Methods

The sampling site was selected in the central basin of Lake Taupo (Site Map) with a water depth of about 160 m. This site is more than 5 km from the nearest land and is exposed to both the north-south and east-west axis of the lake.

To calculate VHOD requires two measurements each year far enough apart in time for a measurable change to occur in the DO concentrations in the hypolimnion of the lake. Details of the procedure and limitations of this measurement are described by Vant (1987). For the monitoring of Lake Taupo, which mixes briefly in winter between July and August, the initial sampling time was selected to be in October, to give sufficient time for thermal stratification to establish a stable hypolimnion. The final sampling time was selected to be in April, before lake cooling causes the downward movement of the thermocline which precedes the winter mixing.

At each of these biannual samplings, a detailed profile of DO and temperature was measured. Prior to 1998, measurements were made at 1 m depth intervals through the full depth of the water column using an in situ recording Applied Microsystems STD-12 profiler fitted with a Royce DO sensor, and compared with manual measurements of DO and temperature made at 10 m depth intervals from the surface to the bottom of the lake using a Yellow Springs Instrument (YSI) model 58 dissolved oxygen meter fitted with a stirred Model 5739 probe on a 160 m cable. Subsequent to 1998, a Richard Brancker Research (RBR) model TD410 conductivity-temperature-depth (CTD) profiler fitted with a stirred YSI model 5739 DO sensor was used. In January 2002, the TD410 CTD profiler was upgraded to an RBR model XR420f freshwater CTD profiler fitted with the YSI model 5739 DO sensor and a Seapoint chlorophyll fluorescence probe. The DO sensor was calibrated regularly by NIWA, Rotorua staff and chlorophyll fluorescence was converted to chlorophyll *a* from extracted chlorophyll *a* analyses of water samples collected beside the profiler.

In January 2008, the XR420f profiler was upgraded to a RBR model XR620f freshwater profiler/logger with improved sensitivity. The new profiler is fitted with a Sea Point chlorophyll fluorescence probe and a Li-Cor underwater photosynthetically active radiance (PAR) sensor to measure in situ light levels and light extinction (Kd) associated with the vertical distribution of algal biomass within the lake water column. In the new system the YSI dissolved oxygen (DO) sensor was replaced with an Oxyguard DO sensor, with a temperature sensor, fitted to a separate RBR logger attached to the profiling frame.

Cross-calibration between the two profilers confirmed the quality of the data and the XR420f has been retained as a back-up.

The following parameters were also measured as profiles from water samples collected using a van Dorn water sampling bottle starting at 1 m and then at 10 m intervals from 10 m to the bottom of the lake:

DO, chlorophyll *a*, dissolved reactive phosphorus (DRP), dissolved organic phosphorus (DOP), particulate phosphorus (PP), total phosphorus (TP), nitrate+nitrite nitrogen (NO_3-N)*, ammoniacal nitrogen (NH_4-N), dissolved organic nitrogen (DON), particulate nitrogen (PN), total nitrogen (TN), urea nitrogen (Urea-N), total suspended solids (SS), volatile suspended solids (VSS), particulate carbon (PC) and dissolved organic carbon (DOC). (* Little, if any nitrite is ever found in the Lake Taupo water column, hence the use of NO_3-N).

Note: TN and TP values are the summation of all other N and P components, respectively, excluding Urea-N which is part of the DON component.

Additional parameters measured but not as complete profiles were:

Water clarity (by Secchi disc depth) and algal species composition and abundance on water samples from 1, 10, 50, 100, and 140 m.

Determinations on the water samples were made with the standard methods routinely used for freshwater analysis by NIWA on a Lachat FIA flow injection analyser.

Algal species composition and abundance were obtained by settling a measured volume of sample (up to 100 mL) in Utermöhl (1931) tubes and counting on an inverted microscope. Biovolume was estimated from cell volume tables calculated from the cell dimensions of each species. Dominance was estimated from relative biovolumes with the highest biovolume assigned dominance 1 as most common and the lowest biovolume assigned the dominance 10 as rare. Professional judgement was used to relate dominance between samplings.

Since 2007, dominance is no longer used and the algal data are reported in cell counts and biovolume.

Data for the long term monitoring programme were scheduled to be collected from the mid-lake sampling station at 2 weekly intervals. The practicality of achieving this target was limited by the weather and in reality data were generally collected at about 2-3 weekly intervals. Parameters measured were:

DO and temperature profiles at 1 m depth intervals to the bottom of the lake by RBR profiler, water clarity as Secchi disc depth, and a 10 m tube water sample was collected for measurement of chlorophyll *a*, NO_3-N, NH_4-N, TN, DRP, TP, and algal species dominance. Chlorophyll fluorescence, conductivity, and PAR data from the profiler are archived but not routinely included in this report.

From 2000, near-bottom water samples from 150 m were collected using a van Dorn water sampling bottle and analysed for DRP, NO_3-N, and NH_4-N.

Data handling and less than detection limit values

All data in this report have been processed and manipulated on Excel spreadsheets. Data is rounded using the Excel protocol to an appropriate number of significant numbers based on the need for detailed knowledge tempered with the confidence in the precision and accuracy of the analytical methods used. This treatment may lead to small differences between electronic copies of the data and the values presented in this report.

The difference between the written report and the Excel spreadsheet of essentially the same data is the treatment of the less than detection limit (<DL) results. The data have in the past been written as <DL or <DL(value). For statistical analysis the excel spreadsheet replaces <DL with 0 or uses the value in brackets in place of 0. Although it is recognised that the former action will be in error, the use of the value in brackets requires some justification.

In discussion with Burns Macaskill, Graham McBride, and Mike Crump from NIWA on this issue, the following conclusions were reached:

- In general the data is reported as a series of results from analytical methods which have known limitations and precision. The raw number is reported where ever possible so that the user can draw their own conclusions about the reliability of the "last significant figure" on any result when performing data manipulations.
- The real problem arises at very low levels and the result obtained is less than the method's prescribed DL The problem is not so much the result obtained but what to do with it which in turn raises the question 'What do we mean by detection limit'?
- In the book "Statistical methods in water resources" Helsel & Hirsch 1992 [Studies in Environmental Science 49, Elsevier], and chapter 13 "Methods for data below the reporting limit" it is pointed out that the 'detection limit' is variously known as the 'reporting limit' or the 'limit of quantitation'. If no other value is available, there are 3 main options: call it zero (which is clearly an under estimate), call it the detection limit (which is clearly an over estimate), or call it half the detection limit (which gives a 50:50 chance of an over or under estimate). The choice then is one of 'which convention do you wish to use'. In the written reports, I have treated the <DL as zero for summation purposes. This is an under estimate which I should have noted on each report page so that anyone using that data is aware of the convention used.
- An alternative approach is to say that, before the sample is analysed, the DL is the predicted minimum level that will be found using the stipulated method. However, once the sample is analysed the result is what was actually measured and may be <DL on the day of analysis. As it is an actual analytical result, that value (reported in brackets) should be reported even though it is <DL. This implies that the method DL is in reality a reporting level or level of confidence.
- The "DL" was derived for the Lake Taupo data, on each analytical occasion, from a series of blanks and 1ppb standards run with the samples. The "DL" is set as 3 times the SD of the 1 ppb standard. This is actually a limit of confidence. All samples are run in duplicate and the mean of the two results becomes the concentration reported.
- With the introduction of the Lachet FIA system, the limits of detection have been confidently lowered to the point where replicate results may often be <DL. In these instances, in the written report, the value is reported as <DL(result). In the past I have still used the <DL =0 convention in summation for the TN and TP data. This is obviously wrong and the actual result should be used, as is done in the electronic spreadsheet.

In this report the analytical value 'on-the-day' has been used wherever possible. Data reported as <DL use the <DL = DL/2 convention. Past data have not been corrected or altered to conform to this protocol.

These technical details are incorporated in this annual report so that data users are aware of how the 'DL' or confidence limit was set and how the values <DL are treated when performing data manipulations.

There is still the question of how to deal with numbers where the result has been simply reported as <DL. The use of the DL/2 convention is probably closer to reality than the DL = 0 convention.

Helsel & Hirsch suggest an alternative method for estimating a value in the <DL range. If there is sufficient real data >DL, a probability curve can be derived and extrapolated around the DL to generate the most probable number for the <DL value.

Statistical methods

Copied from Gibbs (2000).

In this report we have used linear regressions and associated statistical tests to examine trends. The key result of these procedures is the coefficient of determination (r^2), which measures the amount of variability in the data that is accounted for by the regression. Another is the *P*-value[2] . This can be used as a weight of evidence against the hypothesis that there was in fact no trend. This weight is strong when *P* is small, meaning that a trend at least as large as that measured could have occurred merely by chance—we have only a limited number of data from which to infer the strength of any trend, so our measurements always are uncertain to some degree. So if *P* is low enough (taken as less than 5% in this report, which is the usual practice), it is conventional to say that the measured trend is "statistically significant", and that convention is followed in this report. However, it is important (and often not realised) to note that the *P*-value cannot be used as an absolute weight of evidence. This is because it tends to decrease as the number of samples taken in a given period is increased. For example, when we plot monthly Secchi disc depth data from 1994–2001 (Figure 3A, Gibbs 2000) with these 93 data we obtain a statistically significant result (because $P < 0.05$)—even though the coefficient of determination was only $r^2 = 0.0445$. When we plot the minimum winter clarity over this period we then have only 7 data. In this case (Fig. 3B, Gibbs 2000) we happen to have the same measured trend slope with a much higher coefficient of determination ($r^2 = 0.464$), yet the result is not statistically significant (because $P = 0.09$). This is entirely because of the reduced number of samples in the winter minimum case.

What this makes clear is that the *P* value is useful as a relative weight of evidence when comparing datasets of the same size, but it has no evidential meaning when comparing results from datasets of very different sizes.

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[2] It is defined as the probability of obtaining a trend at least as extreme as was obtained if in fact there was no trend at all.

Appendix 2. The calculation of VHOD rates

Copied from Gibbs 1995.

Rationale

In the strictest terms, VHOD can only be calculated for a lake which has thermally stratified and the resultant thermocline provides an effective barrier against re-oxygenation of the hypolimnion. The measure of the barrier efficiency is the rate of heating of the hypolimnion following stratification as heat will be transferred across the thermocline at a similar rate to oxygen.

In Lake Taupo, the thermal inertia of the hypolimnion is so great that heating during the stratified period is typically about 0.2 °C and never more than 0.4 °C over a 200 day period. While this would seem to meet the temperature criterion, in a lake that large, oxygen can be transferred into the hypolimnion by mechanisms other than diffusion.

Wind induced mixing may increase turbulent diffusion across the thermocline as would an internal seiche on the thermocline. Both of these mechanisms would transfer heat. The penetration of the thermocline by an under-flowing density current would entrain oxygenated surface water into the hypolimnion with that flow. As the density current must be colder than the thermocline to plunge through it, there is no heat transferred with this mechanism.

In Lake Taupo the Tongariro River water is always colder than the lake surface water and for at least 9 months of the year it is also colder than the minimum lake water temperature of 10.3 ºC. Thus, during most of the stratified period, the Tongariro River flows directly into the hypolimnion entraining oxygenated surface water with it. The amount of surface water entrained has been estimated to be about 10 times the river discharge. The amount of oxygen transported in this way is likely to be more than 200 tonnes per day.

Clearly this is a substantial oxygen input which invalidates the concept of the thermocline forming an oxygen barrier for purposes of calculating the VHOD. The true VHOD may only be calculated during mid-summer when the Tongariro River flows deep into the epilimnion but does not penetrate the thermocline.

The data collected to date indicates that hypolimnetic oxygen depletion occurs throughout the stratified period - with or without the density current re-oxygenation - and hence the value obtained from a VHOD calculation over the whole stratified period is the net VHOD rate taking all the factors affecting the hypolimnion into account.

As the data from 1996/97 shows, the density current also advects dissolved organic nutrients with it. Hence, management strategies which affect the Tongariro River also impact on the lake. Hence it is appropriate to use the net VHOD rate for inter-annual comparisons rather than the true VHOD rate calculated only through mid-summer.

Method of calculation

The following is the method used to calculate the net VHOD rate for Lake Taupo.

Requirements: Microsoft Excel spreadsheet or equivalent.

Although the thermocline in Lake Taupo is usually at about 40 m, the isothermal water column lies below 70 m. To accommodate the gradient across the thermocline, the net VHOD rate calculation only uses oxygen data from below 70 m.

To calculate the mean oxygen concentration in the water column below 70 m, the DO concentration at each 10 m depth increment is multiplied by the volume of the 10 m slice it came from. This assumes rapid horizontal mixing and minimal vertical mixing to extrapolate one DO value across the whole lake. Historical data from multiple sites would suggest that this is a reasonable assumption.

The slice volumes (hypsographic volumes) for Lake Taupo have been calculated for 10 m thick layers centred on the 5 m point of each slice i.e., 75, 85, 95, 105 m etc. The DO measurements are made at 10 m intervals i.e., 70, 80, 90, 100, 110 m etc.

The mass of oxygen in each 10 m slice is the average of the DO concentration at the top and bottom of a slice multiplied by the slice volume. i.e., for the 70 - 80 m slice the calculation is:-

$$\text{DO Mass}_{70\text{-}80\text{m}} = ((\text{DO}_{70\text{m}} + \text{DO}_{80\text{m}}) \div 2) \times \text{Volume}_{70\text{-}80\text{m}}$$

For each profile date:

Compute the DO mass for each 10 m slice between 70 m and 150 m and sum the results as the total mass of DO in the hypolimnion below 70 m. Sum the slice volumes below 70 m as the total volume of the hypolimnion below 70 m.

The volume weighted mean DO concentration is the total DO mass value divided by the total volume value.

Use the sequential day number or equivalent to construct a time series of volume weighted mean DO concentrations over the stratified period and use the Excel regression analysis tool to obtain the $y = ax + b$ straight line fit for these data.

As the DO data are in g m^{-3}, the value of 'a' is in g m^{-3} d^{-1}. Multiply 'a' by 1000 to get the net VHOD rate in mg m^{-3} d^{-1}. The negative sign from the regression equation indicates a loss rate. By convention VHOD is always a “loss” term and thus the negative sign is omitted when reporting net VHOD rates.

The hypsographic volumes and upper surface areas of the 10 m slices through the whole depth of Lake Taupo are listed at the end of this section.

Statistical evaluation of the VHOD rate

From the 1999-2000 monitoring report (Gibbs 2000), the VHOD rate is expressed as the calculated net VHOD rate ± the 95% confidence limit. This gives a meaningful estimate of the range within which the VHOD rate lies and is more appropriate than the standard deviation on the data or a standard error estimate on the regression coefficient.

Table 2: **Lake Taupo Hypsographic Data used in the Net VHOD RATE calculation.** .

Slice depths (m)	Volume of slice (km^3)	Upper surface area of slice (km^2)
0 - 10	5.849359	600
10 - 20	5.599702	570
20 - 30	5.459951	550
30 - 40	5.359888	542
40 - 50	5.288266	530
50 - 60	5.150538	528
60 - 70	4.899510	502
70 - 80	4.619076	478
80 - 90	4.278738	446
90 - 100	3.847292	410
100 - 110	3.006616	360
110 - 120	1.730549	245
120 - 130	0.837468	110
130 - 140	0.394439	60
140 - 150	0.073333	22
150 -	0	0

Table 3: **Julian Date or sequential day number.** Julian Date or sequential day number for each day of the year excluding leap years. For Leap Years, add 1 to the sequential day number from 1 March to 31 December of that year.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
1	1	32	60	91	121	152	182	213	244	274	305	335	1
2	2	33	61	92	122	153	183	214	245	275	306	336	2
3	3	34	62	93	123	154	184	215	246	276	307	337	3
4	4	35	63	94	124	155	185	216	247	277	308	338	4
5	5	36	64	95	125	156	186	217	248	278	309	339	5
6	6	37	65	96	126	157	187	218	249	279	310	340	6
7	7	38	66	97	127	158	188	219	250	280	311	341	7
8	8	39	67	98	128	159	189	220	251	281	312	342	8
9	9	40	68	99	129	160	190	221	252	282	313	343	9
10	10	41	69	100	130	161	191	222	253	283	314	344	10
11	11	42	70	101	131	162	192	223	254	284	315	345	11
12	12	43	71	102	132	163	193	224	255	285	316	346	12
13	13	44	72	103	133	164	194	225	256	286	317	347	13
14	14	45	73	104	134	165	195	226	257	287	318	348	14
15	15	46	74	105	135	166	196	227	258	288	319	349	15
16	16	47	75	106	136	167	197	228	259	289	320	350	16
17	17	48	76	107	137	168	198	229	260	290	321	351	17
18	18	49	77	108	138	169	199	230	261	291	322	352	18
19	19	50	78	109	139	170	200	231	262	292	323	353	19
20	20	51	79	110	140	171	201	232	263	293	324	354	20
21	21	52	80	111	141	172	202	233	264	294	325	355	21
22	22	53	81	112	142	173	203	234	265	295	326	356	22
23	23	54	82	113	143	174	204	235	266	296	327	357	23
24	24	55	83	114	144	175	205	236	267	297	328	358	24
25	25	56	84	115	145	176	206	237	268	298	329	359	25
26	26	57	85	116	146	177	207	238	269	299	330	360	26
27	27	58	86	117	147	178	208	239	270	300	331	361	27
28	28	59	87	118	148	179	209	240	271	301	332	362	28
29	29		88	119	149	180	210	241	272	302	333	363	29
30	30		89	120	150	181	211	242	273	303	334	364	30
31	31		90		151		212	243		304		365	31

Appendix 3. Temperature and dissolved oxygen data

Includes accumulated data since 1994.

* represents data missing or invalid.

For completeness, additional data from Kuratau Basin (Site B) and Western Bays (Site C) collected for the period between January 2002 and December 2004 are included as separate sheets following the mid-lake data from Site A for those years.

Lake Taupo Temperature, Dissolved Oxygen, and Secchi Depth Database. 2011-2012

Mid-Lake site A for the period starting 9 August 2011

Temperature

Date	9/08/2011	24/08/2011	7/09/2011	28/09/2011	26/10/2011	8/11/2011	22/11/2011	8/12/2011	22/12/2011	12/01/2012	26/01/2012	16/02/2012	7/03/2012	10/04/2012	7/05/2012	30/05/2012	14/06/2012	2/07/2012	18/07/2012	1/08/2012	17/08/2012	29/08/2012	20/09/2012
Depth (m)												no profile										no profile	
0	11.07	10.88	11.09	11.02	13.02	14.12	14.59	16.81	18.23	18.91	19.02		18.17	16.64	15.07	13.41	12.64	11.64	11.44	11.15	11.25		11.17
10	10.95	10.80	10.95	11.02	12.80	13.80	14.55	16.26	16.67	18.64	19.01		17.56	16.47	15.07	13.47	12.68	11.62	11.28	11.17	11.07		10.91
20	10.94	10.75	10.88	11.01	12.31	13.37	14.52	14.83	15.55	16.68	18.30		17.26	16.42	15.07	13.48	12.68	11.62	11.27	11.17	11.02		10.71
30	10.93	10.74	10.76	10.96	11.82	13.00	14.20	13.56	13.57	14.81	16.51		16.24	16.21	15.07	13.50	12.67	11.61	11.26	11.18	11.01		10.70
40	10.94	10.73	10.76	10.84	11.05	11.67	12.15	12.25	12.35	12.58	12.21		12.77	14.24	15.03	13.49	12.66	11.61	11.26	11.19	10.99		10.70
50	10.94	10.72	10.75	10.81	10.92	11.15	11.36	11.54	11.56	11.89	12.13		11.82	11.95	12.50	11.95	12.67	11.61	11.26	11.19	10.99		10.68
60	10.94	10.71	10.75	10.80	10.86	10.92	11.00	11.11	11.15	11.31	11.17		11.30	11.24	11.65	11.43	11.61	11.60	11.26	11.19	10.98		10.68
70	10.94	10.71	10.75	10.79	10.81	10.85	10.89	10.96	11.04	11.07	11.14		11.12	11.06	11.23	11.17	11.19	11.59	11.25	11.19	10.97		10.67
80	10.94	10.71	10.75	10.78	10.79	10.83	10.86	10.91	11.01	10.96	10.96		11.02	10.98	11.09	11.02	11.02	11.24	11.18	11.20	10.96		10.66
90	10.94	10.71	10.75	10.77	10.77	10.80	10.83	10.85	10.93	10.92	10.93		10.96	10.91	11.01	10.97	10.97	11.00	11.04	11.20	10.95		10.64
100	10.93	10.71	10.75	10.76	10.75	10.78	10.82	10.85	10.95	10.89	10.89		10.93	10.89	10.97	10.93	10.95	10.99	10.97	11.19	10.95		10.63
110	10.93	10.71	10.75	10.75	10.75	10.76	10.80	10.81	10.88	10.87	10.87		10.89	10.87	10.92	10.89	10.95	10.95	10.94	11.17	10.94		10.61
120	10.93	10.70	10.74	10.74	10.73	10.75	10.79	10.81	10.88	10.85	10.86		10.87	10.84	10.89	10.87	10.92	10.91	10.92	11.16	10.94		10.60
130	10.93	10.70	10.73	10.73	10.72	10.74	10.78	10.78	10.84	10.83	10.83		10.84	10.82	10.87	10.85	10.90	10.89	10.91	11.16	10.94		10.60
140	10.92	10.70	10.72	10.72	10.72	10.73	10.77	10.77	10.85	10.82	10.83		10.84	10.81	10.86	10.84	10.88	10.88	10.90	11.16	10.94		10.60
150	10.92	10.70	10.71	10.72	10.72	10.72	10.76	10.76	10.82	10.81	10.83		10.83	10.81	10.85	10.83	10.86	10.88	10.89	11.16	10.94		10.60
Dissolved Oxygen (g m^{-3})																							
Depth (m)																							
0	10.49	10.58	10.50	10.57	10.55	10.73	10.33	9.97	9.38	9.29	9.26		9.40	9.70	10.07	10.40	10.60	10.90	10.90	11.03	10.90		11.00
10	10.62	10.59	10.64	10.56	11.22	11.45	11.18	11.11	10.16	9.95	9.21		10.23	9.91	10.00	11.23	11.28	10.98	11.12	11.19	11.09		11.03
20	10.53	10.45	10.62	10.52	11.91	11.69	11.66	11.95	10.92	11.21	9.56		10.24	9.88	9.40	11.49	10.63	10.93	10.83	11.13	10.77		11.06
30	10.40	10.32	10.40	10.50	12.08	11.55	11.57	11.85	11.26	11.50	9.76		10.45	9.83	9.22	11.59	10.78	10.87	10.91	11.21	10.77		11.07
40	10.32	10.23	10.34	10.25	11.68	11.44	11.72	11.74	11.16	11.06	10.18		10.63	9.57	9.01	10.77	10.57	10.86	10.70	11.10	10.44		11.10
50	10.36	10.22	10.31	10.18	11.54	11.11	11.61	11.20	10.96	10.88	9.89		10.52	9.50	9.24	10.10	10.69	10.81	10.84	11.01	10.24		11.12
60	10.34	10.19	10.27	10.13	11.34	10.62	10.84	10.67	10.46	10.47	9.71		10.07	9.36	9.20	9.38	9.33	10.78	10.66	11.11	10.18		11.17
70	10.38	10.11	10.13	10.10	11.24	10.61	10.79	10.64	10.47	10.47	9.46		10.04	9.24	6.84	9.31	9.26	10.69	10.79	11.11	10.04		11.18
80	10.29	10.06	10.21	10.08	11.15	10.39	10.43	10.17	10.01	10.13	9.40		9.62	9.02	10.17	8.94	8.84	9.85	9.71	11.05	10.22		11.21
90	10.28	10.05	10.08	10.06	11.13	10.38	10.30	10.20	10.06	10.06	9.31		9.50	8.99	6.39	8.89	8.87	8.81	9.23	10.79	10.22		11.22
100	10.31	10.01	10.17	10.00	11.05	10.20	9.92	9.90	9.71	9.49	9.14		9.13	8.85	10.68	8.72	8.63	8.64	8.35	10.02	10.15		11.25
110	10.29	9.99	10.05	9.95	10.94	10.17	9.93	10.01	9.74	9.38	9.10		9.12	8.89	6.26	8.66	8.40	8.38	8.35	9.41	10.16		11.26
120	10.29	9.95	10.10	9.91	10.96	10.01	9.47	9.52	9.33	9.12	8.87		8.84	8.62	8.17	8.44	8.26	8.16	8.20	9.23	10.02		11.30
130	10.30	9.89	9.92	9.89	10.77	10.02	9.39	9.45	9.49	9.18	8.80		8.83	8.59	7.63	8.33	8.33	8.08	8.15	9.10	9.98		11.32
140	10.25	9.90	9.99	9.89	10.50	9.63	9.13	9.27	9.38	9.02	8.61		8.23	8.27	8.13	7.84	7.92	7.99	7.84	9.10	9.98		11.34
150	10.20	9.90	9.66	9.66	10.45	9.43	8.94	8.57	8.88	8.42	8.02		8.01	8.03	8.90	7.57	7.83	7.99	7.75	9.05	9.98		11.41
															probe error								
Secchi depth																							
(m)	16	9	16	13	14	14	18	18.5	13	16.5	15	16	16	17	17	17	14	15.5	17	17	14		13

Lake Taupo Temperature, Dissolved Oxygen, and Secchi Depth Database. 2010-2011

Mid-Lake site A for the period starting 13 July 2010

Temperature																				
Date																				
	13/07/2010	10/08/2010	24/08/2010	13/09/2010	5/10/2010	26/10/2010	10/11/2010	25/11/2010	21/12/2010	11/01/2011	27/01/2011	17/02/2011	1/03/2011	15/03/2011	13/04/2011	10/05/2011	31/05/2011	22/06/2011	5/07/2011	9/08/2011
Depth (m)																				
0	11.31	11.01	10.92	11.37	11.90	13.00	13.98	15.96	18.32	19.75	19.62	20.54	20.47	19.94	17.68	15.51	14.13	13.11	12.35	11.07
10	11.29	10.96	10.86	11.02	11.66	11.72	13.25	15.65	18.25	19.62	19.58	20.44	20.48	19.72	17.67	15.52	14.14	13.13	12.33	10.95
20	11.29	10.95	10.85	10.95	11.23	11.53	13.13	13.81	14.51	17.39	18.98	20.35	20.48	19.53	17.64	15.50	14.15	13.12	12.33	10.94
30	11.28	10.95	10.85	10.89	11.01	11.44	11.88	12.10	12.53	12.88	15.19	16.03	15.33	15.41	17.62	15.43	14.15	13.12	12.33	10.93
40	11.28	10.95	10.85	10.85	10.96	11.37	11.54	11.42	11.66	11.62	12.22	12.26	12.17	12.27	12.12	15.32	14.15	13.13	12.33	10.94
50	11.28	10.95	10.85	10.85	10.88	11.31	11.17	11.11	11.24	11.37	11.47	12.09	11.31	11.43	11.39	12.27	11.84	13.11	12.32	10.94
60	11.26	10.94	10.83	10.83	10.85	11.21	11.02	10.98	11.03	11.08	11.13	11.33	11.10	11.11	11.12	11.28	11.31	11.38	11.41	10.94
70	11.01	10.94	10.81	10.82	10.82	11.03	10.93	10.91	10.92	10.96	10.97	11.09	10.98	11.02	10.99	11.09	11.11	11.19	11.18	10.94
80	10.96	10.92	10.80	10.81	10.80	10.89	10.85	10.87	10.88	10.89	10.90	10.96	10.93	10.97	10.95	11.00	11.03	11.07	11.03	10.94
90	10.79	10.84	10.78	10.81	10.78	10.88	10.82	10.84	10.85	10.86	10.86	10.92	10.92	10.92	10.92	10.97	11.00	11.00	11.02	10.94
100	10.75	10.81	10.76	10.80	10.76	10.83	10.81	10.83	10.84	10.86	10.85	10.89	10.90	10.90	10.89	10.93	10.97	10.97	10.98	10.93
110	10.70	10.75	10.76	10.80	10.75	10.82	10.78	10.81	10.81	10.85	10.84	10.88	10.90	10.87	10.88	10.91	10.95	10.95	10.97	10.93
120	10.68	10.73	10.75	10.80	10.75	10.80	10.77	10.81	10.80	10.84	10.84	10.87	10.88	10.87	10.87	10.90	10.95	10.94	10.97	10.93
130	10.67	10.71	10.75	10.78	10.75	10.78	10.77	10.80	10.79	10.83	10.83	10.87	10.87	10.85	10.86	10.89	10.92	10.92	10.95	10.93
140	10.66	10.71	10.74	10.76	10.75	10.79	10.77	10.80	10.79	10.83	10.83	10.85	10.85	10.85	10.84	10.87	10.92	10.91	10.92	10.92
150	10.66	10.70	10.74	10.76	10.75	10.77	10.77	10.80	10.79	10.82	10.83	10.84	10.85	10.85	10.84	10.87	10.91	10.90	10.93	10.92
Dissolved Oxygen (g m^{-3})																				
Depth (m)																				
0	10.50	9.50	10.64	11.24	9.90	10.12	9.83	9.57	9.00	8.73	8.76	8.60	8.64	8.30	9.17	9.54	9.85	10.07	10.22	10.49
10	11.42	11.29	10.52	10.92	9.80	9.78	9.68	9.32	8.37	8.00	7.98	8.63	8.64	8.73	9.64	10.26	10.71	10.30	10.27	10.62
20	11.57	11.60	10.50	10.62	9.68	9.76	9.52	10.10	9.06	8.74	7.96	8.61	8.69	9.15	9.93	10.81	11.21	10.84	10.09	10.53
30	11.65	11.63	10.44	10.71	9.64	9.75	9.29	10.07	9.52	8.57	7.91	8.72	8.99	9.55	9.86	10.72	10.99	10.92	10.10	10.40
40	11.35	11.59	10.41	10.13	9.51	9.54	9.18	9.70	9.31	8.86	8.23	9.26	9.40	10.06	10.23	10.51	10.91	11.05	10.07	10.32
50	11.30	11.63	10.37	10.17	9.47	9.56	9.05	9.58	9.14	8.55	8.08	9.17	9.33	9.63	9.78	10.15	10.57	10.97	10.07	10.36
60	11.04	11.67	10.31	10.03	9.34	9.32	8.86	9.24	8.86	8.41	7.90	8.84	8.84	9.13	9.67	9.44	9.26	9.54	8.80	10.34
70	10.73	11.81	10.25	10.04	9.31	9.27	8.81	9.29	8.71	8.29	7.66	8.70	8.76	9.11	9.12	9.28	9.01	9.41	8.62	10.38
80	10.04	11.58	10.22	9.85	9.25	8.90	8.75	9.03	8.49	8.10	7.51	8.28	8.43	8.92	9.08	9.13	8.65	8.96	8.10	10.29
90	9.68	11.21	10.18	9.87	9.19	8.90	8.72	9.24	8.47	7.93	7.42	8.19	8.31	9.03	8.46	9.06	8.72	8.91	8.06	10.28
100	9.25	10.56	10.15	9.64	9.17	8.78	8.73	8.80	8.31	7.70	7.33	7.93	8.03	8.53	8.22	8.59	8.37	8.68	7.81	10.31
110	9.06	10.35	10.10	9.67	9.11	8.73	8.64	9.12	8.35	7.56	7.26	7.90	8.00	8.55	8.06	8.60	8.27	8.53	7.72	10.29
120	8.71	9.83	10.06	9.43	9.04	8.61	8.66	8.84	8.07	7.46	7.18	7.86	7.95	8.40	7.92	8.27	7.91	8.45	7.67	10.29
130	8.66	9.44	10.05	9.49	8.95	8.60	8.66	8.67	8.04	7.45	7.16	7.85	7.91	8.35	7.42	8.06	7.84	8.08	7.54	10.30
140	8.59	9.34	10.10	8.83	8.84	8.36	8.66	8.62	7.50	7.42	7.16	7.80	7.79	7.43	7.48	7.72	7.62	7.81	7.15	10.25
150	8.33	9.10	9.96	8.71	8.81	8.17	8.66	8.51	7.46	7.30	7.16	7.47	7.51	7.52	6.98	7.24	7.40	7.30	7.00	10.20
Secchi depth																				
(m)	14.5	12.8	11	10.5	10.8	12.5	11.5	14.2	17	11	17	12	19	15	17	16.5	17	14	13	16

Lake Taupo Temperature, Dissolved Oxygen, and Secchi Depth Database. **2009-2010**

Mid-Lake site A for the period starting 6 July 2009

Temperature

Date	6/07/2009	13/08/2009	7/09/2009	17/09/2009	19/10/2009	12/11/2009	17/12/2009	13/01/2010	2/02/2010	11/02/2010	18/02/2010	10/03/2010	8/04/2010	28/04/2010	20/05/2010	3/06/2010	23/06/2010	13/07/2010	10/08/2010
Depth (m)																			
0	10.93	10.43	10.56	11.63	11.72	13.00	16.99	17.89	19.23	20.60	20.45	20.08	17.36	16.38	15.09	14.11	12.23	11.31	11.01
10	10.93	10.41	10.52	11.08	11.25	12.54	16.25	17.89	19.15	20.53	20.40	20.04	17.35	16.31	15.09	14.00	12.25	11.29	10.96
20	10.92	10.41	10.51	10.71	11.24	12.43	15.85	17.56	17.60	18.34	18.73	19.69	17.35	16.30	15.09	13.99	12.23	11.29	10.95
30	10.92	10.41	10.47	10.57	11.20	12.19	13.45	13.21	13.95	14.51	13.91	15.56	17.34	16.12	15.08	13.99	12.25	11.28	10.95
40	10.91	10.38	10.47	10.50	10.98	11.77	12.54	11.65	11.92	12.03	12.02	12.23	12.28	12.72	12.41	11.71	12.21	11.28	10.95
50	10.92	10.36	10.47	10.49	10.67	11.40	11.34	11.20	11.13	11.07	11.10	11.20	11.19	11.21	11.25	11.12	11.02	11.28	10.95
60	10.92	10.36	10.46	10.48	10.58	10.97	10.86	11.02	10.86	10.88	10.86	10.84	10.82	10.85	10.88	10.90	10.84	11.26	10.94
70	10.92	10.36	10.46	10.48	10.53	10.67	10.68	10.71	10.68	10.68	10.67	10.68	10.67	10.73	10.73	10.77	10.72	11.01	10.94
80	10.91	10.35	10.46	10.47	10.50	10.56	10.57	10.59	10.59	10.62	10.63	10.62	10.62	10.65	10.66	10.69	10.69	10.96	10.92
90	10.92	10.34	10.46	10.47	10.49	10.54	10.53	10.51	10.55	10.58	10.57	10.58	10.60	10.60	10.63	10.65	10.67	10.79	10.84
100	10.92	10.34	10.46	10.46	10.47	10.50	10.49	10.51	10.52	10.55	10.53	10.56	10.57	10.59	10.60	10.63	10.65	10.75	10.81
110	10.91	10.33	10.46	10.46	10.46	10.46	10.48	10.51	10.52	10.52	10.51	10.53	10.57	10.56	10.58	10.61	10.64	10.70	10.75
120	10.91	10.33	10.44	10.45	10.44	10.44	10.46	10.49	10.50	10.51	10.51	10.52	10.55	10.55	10.57	10.59	10.64	10.68	10.73
130	10.91	10.33	10.36	10.42	10.43	10.42	10.44	10.48	10.49	10.50	10.50	10.51	10.53	10.54	10.55	10.56	10.62	10.67	10.71
140	10.90	10.33	10.35	10.38	10.41	10.40	10.44	10.47	10.49	10.50	10.50	10.51	10.53	10.54	10.55	10.56	10.61	10.66	10.71
150	10.90	10.30	10.35	10.38	10.41	10.40	10.44	10.46	10.49	10.49	10.50	10.51	10.53	10.54	10.55	10.56	10.61	10.66	10.70
Dissolved Oxygen (g m^{-3})																			
Depth (m)																			
0	8.91	9.83	9.37	10.58	11.67	9.88	9.66	9.48	9.29	9.47	9.34	8.84	9.48	10.48	10.57	10.44	10.54	10.50	9.50
10	9.88	10.72	10.29	11.08	12.13	10.80	9.63	9.18	9.26	9.40	9.32	8.28	10.17	10.17	11.29	10.25	10.86	11.42	11.29
20	11.06	11.48	10.48	11.00	11.79	10.78	9.58	9.62	9.38	9.71	9.59	8.75	9.66	9.39	10.84	10.34	10.40	11.57	11.60
30	11.31	11.57	10.49	10.68	11.78	10.84	9.71	9.34	9.17	9.65	9.45	8.92	9.43	9.09	10.63	10.39	10.38	11.65	11.63
40	11.28	11.39	10.46	10.40	11.24	10.56	9.31	9.15	8.86	8.72	8.75	8.60	9.04	8.53	9.06	9.39	10.28	11.35	11.59
50	11.29	11.39	10.36	10.31	11.10	10.47	9.29	8.78	8.36	8.21	8.44	8.14	8.57	8.13	8.68	9.26	9.46	11.30	11.63
60	11.03	11.20	10.18	10.15	10.10	9.86	8.78	8.68	8.06	7.94	7.99	7.73	8.31	7.92	8.11	8.93	9.04	11.04	11.67
70	11.05	11.16	10.21	10.12	10.02	9.86	8.60	8.31	7.88	7.76	7.97	7.59	8.11	7.84	8.08	8.84	8.82	10.73	11.81
80	10.83	10.86	10.09	10.11	9.70	9.24	8.34	8.27	7.69	7.74	7.70	7.51	7.97	7.70	8.03	8.54	8.55	10.04	11.58
90	10.87	10.97	10.16	10.02	9.72	9.26	8.25	7.97	7.47	7.55	7.68	7.38	7.74	7.56	7.70	8.44	8.37	9.68	11.21
100	10.68	10.87	10.23	10.03	9.51	8.60	8.17	7.71	7.37	7.54	7.41	7.25	7.43	7.42	7.51	8.18	8.26	9.25	10.56
110	10.72	10.90	10.30	9.95	9.50	8.60	8.05	7.50	7.23	7.37	7.43	7.22	7.27	7.27	7.39	8.10	8.09	9.06	10.35
120	10.55	10.86	9.91	10.26	9.20	8.20	7.98	7.55	7.23	7.19	7.17	7.15	7.11	7.08	7.17	7.95	8.03	8.71	9.83
130	10.55	10.71	9.80	10.00	9.18	8.15	7.87	7.37	7.18	7.20	7.12	6.98	7.09	7.05	7.11	7.90	8.00	8.66	9.44
140	10.48	10.80	9.52	9.69	8.82	7.70	7.62	7.42	6.90	6.95	6.71	6.57	6.82	6.77	6.79	7.18	7.85	8.59	9.34
150	10.30	10.77	9.46	9.47	8.79	7.72	7.41	7.25	6.88	6.93	6.65	6.46	6.75	6.75	6.73	7.17	7.84	8.33	9.10
Secchi depth																			
(m)	15	12	15	*	13	12.5	15	14.5	16	*	17	19	21.5	19	19.5	14.5	14	14.5	12.8

Lake Taupo Temperature, Dissolved Oxygen, and Secchi Depth Database. 2008-2009
Mid-Lake site A for the period starting 11 September 2007

Temperature

Date	4/09/2008	16/09/2008	14/10/2008	4/11/2008	26/11/2008	22/12/2008	13/01/2009	22/01/2009	28/01/2009	11/02/2009	25/02/2009	16/03/2009	26/03/2009	15/04/2009	7/05/2009	27/05/2009	18/06/2009	6/07/2009	13/08/2009
Depth (m)																			
0	10.97	11.34	12.59	13.37	15.45	18.84	19.67	19.84	20.88	21.42	20.46	18.71	17.96	16.60	15.05	12.97	11.60	10.93	10.43
10	10.92	11.14	12.09	12.94	15.26	17.50	19.55	19.23	20.17	21.21	20.39	18.29	17.95	16.59	15.04	12.96	11.61	10.93	10.41
20	10.85	10.99	11.93	12.62	15.17	15.77	16.97	19.12	18.45	20.04	20.37	18.25	17.94	16.59	15.04	12.96	11.61	10.92	10.41
30	10.82	10.93	11.85	12.55	12.87	13.32	13.60	13.90	13.21	13.92	14.47	16.68	13.86	16.58	15.04	12.90	11.61	10.92	10.41
40	10.79	10.91	11.75	12.35	12.07	12.27	12.19	12.11	11.90	12.09	12.84	12.43	12.13	12.53	12.55	12.62	11.60	10.91	10.38
50	10.75	10.88	11.59	11.51	11.44	11.39	11.33	11.52	11.31	11.50	11.62	11.56	11.45	11.56	11.64	11.50	11.60	10.92	10.36
60	10.72	10.79	10.90	10.83	10.93	11.06	11.08	11.04	11.05	11.19	11.18	11.22	11.19	11.12	11.17	11.06	11.60	10.92	10.36
70	10.69	10.69	10.76	10.79	10.78	10.88	10.89	10.90	10.89	10.97	10.92	10.98	10.98	10.98	11.01	10.94	11.60	10.92	10.36
80	10.66	10.68	10.71	10.72	10.76	10.81	10.82	10.87	10.84	10.86	10.87	10.88	10.89	10.92	10.93	10.90	11.59	10.91	10.35
90	10.66	10.66	10.69	10.70	10.77	10.78	10.78	10.81	10.80	10.81	10.82	10.83	10.84	10.88	10.89	10.88	11.41	10.92	10.34
100	10.65	10.65	10.68	10.68	10.82	10.75	10.76	10.80	10.78	10.77	10.79	10.81	10.81	10.86	10.86	10.86	11.09	10.92	10.34
110	10.64	10.64	10.66	10.67	10.78	10.73	10.75	10.78	10.74	10.76	10.77	10.80	10.79	10.84	10.86	10.85	11.00	10.91	10.33
120	10.63	10.64	10.64	10.65	10.78	10.71	10.73	10.77	10.74	10.75	10.76	10.79	10.78	10.82	10.84	10.84	10.98	10.91	10.33
130	10.63	10.63	10.60	10.63	10.79	10.70	10.72	10.74	10.73	10.73	10.75	10.77	10.77	10.79	10.82	10.82	10.95	10.91	10.33
140	10.63	10.62	10.59	10.63	10.81	10.70	10.72	10.73	10.72	10.73	10.74	10.77	10.76	10.78	10.80	10.81	10.94	10.90	10.33
150	10.62	10.62	10.59	10.63	10.80	10.70	10.71	10.74	10.72	10.73	10.74	10.76	10.76	10.78	10.80	10.81	10.89	10.90	10.30

Dissolved Oxygen (g m^{-3})

Depth (m)																			
0	10.03	9.84	10.29	*	10.09	9.29	8.67	9.24	8.52	8.48	*	9.26	9.44	9.33	10.05	10.13	10.47	8.91	9.83
10	10.85	10.65	10.29	*	10.08	9.72	9.21	8.89	8.45	8.34	*	9.16	10.06	10.11	10.15	10.25	10.73	9.88	10.72
20	10.90	11.05	10.50	*	10.00	9.39	8.88	8.68	8.47	8.19	*	9.40	10.55	10.76	10.15	10.13	10.59	11.06	11.48
30	11.12	10.91	10.46	*	9.79	9.81	9.02	8.53	8.54	8.20	*	9.12	10.34	10.83	10.15	10.17	10.57	11.31	11.57
40	10.76	10.82	10.34	*	9.23	9.69	8.96	8.46	8.06	8.36	*	8.24	9.86	10.39	9.15	9.78	10.56	11.28	11.39
50	10.88	10.63	10.05	*	9.10	9.05	8.49	8.06	7.98	7.92	*	7.97	9.25	9.58	8.91	9.47	10.49	11.29	11.39
60	10.74	10.55	9.89	*	8.54	8.77	8.25	7.91	7.81	7.80	*	7.62	8.97	9.06	8.67	8.73	10.40	11.03	11.20
70	10.52	10.25	9.86	*	8.60	8.53	8.10	7.64	7.74	7.71	*	7.55	8.94	8.84	8.51	8.60	10.43	11.05	11.16
80	10.48	10.20	9.81	*	8.43	8.47	7.98	7.46	7.66	7.64	*	7.44	8.54	8.21	7.79	8.25	10.43	10.83	10.86
90	10.34	10.13	9.85	*	8.44	8.21	7.92	7.38	7.56	7.60	*	7.37	8.45	8.24	7.79	8.24	10.25	10.87	10.97
100	10.28	10.10	10.03	*	8.20	8.22	7.78	7.25	7.53	7.44	*	7.26	8.24	8.07	7.65	8.10	8.65	10.68	10.87
110	9.79	10.00	10.13	*	8.31	7.99	7.67	7.22	7.47	7.31	*	7.20	8.26	8.12	7.62	8.06	8.53	10.72	10.90
120	9.62	9.97	10.09	*	8.04	7.91	7.63	7.17	7.32	7.26	*	7.01	7.94	8.02	7.63	7.79	8.17	10.55	10.86
130	9.42	9.75	9.83	*	8.09	7.70	7.48	7.21	7.24	7.04	*	7.03	7.93	8.15	7.59	7.83	8.11	10.55	10.71
140	9.37	9.52	9.76	*	7.88	7.59	7.40	7.24	7.08	6.92	*	6.68	7.08	8.01	7.74	7.49	7.99	10.48	10.80
150	9.17	9.24	9.85	*	7.85	7.48	7.25	7.03	6.90	6.72	*	6.59	6.91	7.55	7.35	7.30	7.97	10.30	10.77

Secchi depth

(m)	13.0	14.5	12.2	12.0	10.0	12.0	13.0	14.8	18.0	22.0	20.0	15.6	18.5	18.0	16.0	15.0	16.0	15.0	12.0

Lake Taupo Temperature, Dissolved Oxygen, and Secchi Depth Database. **2007-2008**

Mid-Lake site A for the period starting 11 September 2007

Temperature

Date Depth (m)	11/9/2007	9/10/2007	30/10/2007	15/11/2007	4/12/2007	20/12/2007	17/01/2008	31/01/2008	14/02/2008	27/02/2008	13/03/2008	26/03/2008	17/04/2008	7/05/2008	22/05/2008	5/06/2008	19/06/2008	1/07/2008	15/07/2008	7/08/2008	20/08/2008
0	11.00	12.33	12.84	13.47	16.64	17.38	21.23	19.79	19.87	19.28	18.83	19.26	17.88	15.67	14.65	13.60	12.89	11.97	11.42	11.06	10.70
10	10.99	11.69	11.83	13.19	16.20	17.15	19.96	19.62	19.81	19.26	18.75	19.24	17.87	15.67	14.65	13.60	12.90	12.03	11.41	10.98	10.70
20	10.98	11.67	11.76	12.92	14.48	14.76	17.21	17.59	19.65	19.24	18.75	18.92	17.85	15.67	14.65	13.59	12.90	12.03	11.40	10.98	10.69
30	10.99	11.44	11.70	12.86	12.58	13.19	13.64	13.82	16.07	14.08	16.20	16.92	15.58	15.67	14.65	13.60	12.90	12.01	11.40	10.98	10.69
40	10.99	11.42	11.64	12.78	12.02	12.18	12.26	12.31	12.63	12.24	12.54	12.44	12.38	15.27	12.27	13.60	12.90	12.03	11.40	10.98	10.69
50	10.99	11.39	11.51	11.80	11.69	11.75	11.64	11.61	11.80	11.71	11.76	11.77	11.72	12.11	11.66	11.93	12.86	12.03	11.39	10.99	10.70
60	10.99	11.34	11.43	11.49	11.42	11.53	11.41	11.39	11.47	11.44	11.47	11.48	11.48	11.56	11.44	11.54	11.60	12.03	11.39	10.98	10.70
70	10.99	11.16	11.32	11.37	11.29	11.33	11.23	11.26	11.33	11.30	11.34	11.29	11.34	11.37	11.32	11.37	11.36	11.61	11.38	10.98	10.70
80	10.96	11.00	11.23	11.31	11.25	11.23	11.22	11.17	11.25	11.25	11.24	11.23	11.27	11.29	11.27	11.29	11.27	11.39	11.38	10.98	10.70
90	10.96	10.98	11.16	11.17	11.14	11.12	11.12	11.11	11.19	11.18	11.18	11.17	11.20	11.21	11.22	11.24	11.23	11.29	11.35	10.98	10.70
100	10.96	10.98	11.07	11.10	11.10	11.09	11.12	11.09	11.15	11.14	11.14	11.14	11.17	11.16	11.18	11.21	11.21	11.28	11.30	10.98	10.70
110	10.96	10.97	11.04	11.04	11.07	11.04	11.06	11.08	11.11	11.11	11.11	11.12	11.14	11.16	11.16	11.19	11.19	11.28	11.25	10.98	10.70
120	10.96	10.96	11.02	11.02	11.05	11.03	11.04	11.06	11.07	11.09	11.09	11.11	11.15	11.15	11.15	11.16	11.17	11.25	11.22	10.98	10.70
130	10.96	10.96	11.00	11.00	11.02	11.00	11.02	11.05	11.06	11.07	11.07	11.09	11.12	11.12	11.13	11.15	11.15	11.22	11.20	10.98	10.70
140	10.96	10.96	10.98	10.97	10.99	11.01	11.00	11.05	11.05	11.06	11.06	11.08	11.11	11.11	11.12	11.13	11.15	11.17	11.19	10.98	10.70
150	10.96	10.95	10.96	10.95	10.98	10.99	11.00	11.04	11.04	11.05	11.06	11.08	11.11	11.10	11.12	11.13	11.15	11.16	11.19	10.98	10.70

Dissolved Oxygen (g m^{-3})

Depth (m)																					
0	11.00	10.23	10.18	10.03	9.35	9.21	8.61	*	10.77	9.20	9.38	9.87	9.49	9.91	10.13	10.36	10.53	10.75	10.89	10.21	9.55
10	11.12	10.37	10.27	10.11	9.45	9.24	8.63	*	8.76	9.09	9.05	8.61	8.97	9.04	9.37	9.84	10.26	10.63	10.66	11.03	10.80
20	10.87	10.12	10.25	10.07	9.23	9.21	8.70	*	9.00	9.32	9.24	8.85	8.46	8.97	9.18	9.72	10.14	10.32	10.51	11.04	11.16
30	10.99	10.17	10.07	10.17	9.36	9.37	8.93	*	9.35	9.45	9.01	8.73	8.52	8.86	9.16	9.63	10.10	10.37	10.48	10.94	11.11
40	10.84	9.92	10.02	9.97	9.09	9.09	8.69	*	9.01	8.92	8.96	8.57	8.72	8.87	8.68	9.81	10.12	10.40	10.42	10.72	11.08
50	10.92	10.09	9.85	9.66	9.08	9.21	8.67	*	8.64	8.82	8.60	8.51	8.48	8.45	8.56	9.22	10.10	10.31	10.52	10.83	11.07
60	11.07	9.96	9.52	9.75	9.14	8.69	8.60	8.70	8.44	8.49	8.34	8.15	8.20	8.25	8.58	8.96	9.51	10.36	10.45	10.60	11.05
70	10.89	9.90	9.77	9.30	8.74	8.69	8.26	8.22	8.19	8.15	8.02	7.79	7.84	7.89	8.37	8.65	9.07	10.28	10.39	10.76	10.98
80	10.90	9.59	9.58	9.12	8.76	8.38	8.03	8.05	8.16	7.88	7.92	7.52	7.71	7.90	8.30	8.53	8.91	9.60	10.34	10.74	10.96
90	10.66	9.63	9.42	9.07	8.62	8.46	8.10	8.06	7.99	7.87	7.76	7.47	7.57	7.68	8.22	8.45	8.72	9.18	10.23	10.73	10.91
100	10.64	9.58	9.49	9.14	8.46	8.41	7.90	7.90	7.97	7.86	7.69	7.45	7.45	7.46	8.14	8.44	8.66	9.06	9.93	10.72	10.90
110	10.62	9.57	9.16	8.83	8.37	8.46	7.83	7.87	7.81	7.64	7.50	7.20	7.29	7.38	8.03	8.19	8.43	8.72	9.34	10.68	10.84
120	10.66	9.52	9.27	8.95	8.42	8.08	7.95	7.52	7.82	7.39	7.45	7.20	7.29	7.38	7.94	8.16	8.32	8.55	8.94	10.67	10.83
130	10.42	9.35	9.01	8.81	8.31	8.13	7.72	7.40	7.59	7.41	7.27	7.16	7.18	7.19	7.86	7.86	8.14	8.31	8.79	10.63	10.57
140	10.40	9.30	9.11	8.81	8.28	7.88	7.74	7.27	7.62	7.05	7.10	7.10	7.13	7.17	7.81	7.61	8.01	8.25	8.48	10.62	10.38
150	10.37	9.13	8.91	8.45	7.95	7.95	7.33	7.35	7.27	7.00	6.76	6.59	6.72	6.85	7.40	7.50	7.73	8.08	8.48	10.57	9.67

Secchi depth

(m)	11	15	16	14	15	17.5	22.5	21.5	25	22	22	19	20.5	16	17	15	16.5	14	13	12.5	12.5

Lake Taupo Temperature, Dissolved Oxygen, and Secchi Depth Database. 2006-2007
Mid-Lake site A for the period starting 4 September 2006

Temperature

Date	4/09/2006	26/09/2006	18/10/2006	1/11/2006	5/12/2006	19/12/2006	9/01/2007	25/01/2007	8/02/2007	21/02/2007	21/03/2007	3/04/2007	19/04/2007	8/05/2007	22/05/2007	14/06/2007	27/06/2007	18/07/2007	8/08/2007	23/08/2007	11/09/2007
Depth (m)																					
0	11.10	11.88	11.72	12.43	15.21	15.62	16.51	18.60	19.31	19.58	18.70	18.04	16.49	19.29	15.17	13.56	12.38	11.43	11.15	11.00	11.00
10	10.93	11.48	11.73	12.27	14.06	15.46	16.41	18.42	18.98	19.12	18.03	18.03	16.48	18.98	15.16	13.56	12.39	11.43	11.15	11.00	10.99
20	10.93	11.29	11.72	12.25	13.87	14.45	15.44	17.96	18.16	17.62	17.99	17.94	16.47	18.16	15.16	13.56	12.39	11.43	11.16	11.00	10.98
30	10.89	11.19	11.69	12.20	13.69	14.15	14.42	15.82	14.86	15.17	15.18	16.72	16.47	14.86	15.16	13.56	12.39	11.36	11.15	11.00	10.99
40	10.87	11.15	11.45	12.10	13.16	12.43	12.25	13.05	12.89	13.09	12.65	13.50	13.78	12.89	15.15	13.56	12.39	11.29	11.16	11.00	10.99
50	10.83	11.08	11.34	11.96	11.77	11.64	11.74	11.84	11.89	11.91	11.94	12.33	12.47	11.89	11.99	13.55	12.39	11.27	11.16	11.00	10.99
60	10.82	11.06	11.25	11.34	11.20	11.36	11.29	11.47	11.39	11.46	11.51	11.65	11.69	11.39	11.54	11.77	12.38	11.25	11.15	11.00	10.99
70	10.82	11.00	11.21	11.17	11.11	11.21	11.15	11.26	11.21	11.21	11.22	11.28	11.33	11.21	11.33	11.35	11.39	11.22	11.16	11.01	10.99
80	10.82	10.94	11.16	11.06	11.06	11.10	11.09	11.14	11.15	11.15	11.16	11.22	11.20	11.15	11.21	11.22	11.28	11.17	11.16	11.01	10.96
90	10.81	10.90	11.08	10.99	10.97	11.03	11.03	11.04	11.06	11.05	11.09	11.11	11.13	11.06	11.12	11.11	11.22	11.14	11.16	11.01	10.96
100	10.81	10.87	10.97	10.94	10.94	11.00	11.00	11.00	11.03	11.05	11.05	11.10	11.09	11.03	11.10	11.10	11.16	11.13	11.16	11.01	10.96
110	10.81	10.84	10.89	10.91	10.91	10.96	10.98	10.98	11.01	11.02	11.03	11.04	11.05	11.01	11.07	11.09	11.12	11.12	11.16	11.01	10.96
120	10.80	10.81	10.86	10.88	10.90	10.94	10.97	10.99	11.06	11.02	11.02	11.04	11.04	11.06	11.07	11.08	11.11	11.12	11.16	11.01	10.96
130	10.79	10.79	10.85	10.85	10.88	10.92	10.95	10.97	10.99	10.99	11.01	11.01	11.03	10.99	11.03	11.07	11.08	11.11	11.16	11.01	10.96
140	10.76	10.78	10.83	10.84	10.88	10.89	10.94	10.97	10.97	10.98	10.99	11.00	11.02	10.97	11.03	11.05	11.07	11.10	11.16	11.01	10.96
150	10.75	10.76	10.82	10.85	10.88	10.91	10.93	10.99	10.96	11.02	11.04	11.03	11.02	11.00	11.04	11.05	11.07	11.10	11.16	11.01	10.96

Dissolved Oxygen (g m^{-3})

Depth (m)																					
0	10.52	10.31	10.36	10.23	9.62	9.52	9.35	8.99	8.95	9.16	9.31	9.44	9.74	9.20	10.01	10.01	10.26	10.36	10.96	11.02	11.00
10	10.47	10.28	10.31	10.16	9.69	9.52	9.52	8.95	8.96	9.26	9.27	9.51	9.73	9.29	10.06	9.95	10.37	10.43	11.08	11.05	11.12
20	10.33	10.25	10.23	10.14	9.56	9.43	9.64	8.95	8.77	9.22	9.27	9.45	9.84	9.08	10.12	9.83	10.48	10.56	11.05	11.15	10.87
30	10.23	10.22	10.27	10.07	9.48	9.50	9.49	8.61	8.78	9.21	8.52	9.30	9.75	9.09	10.06	9.74	10.25	10.27	10.89	11.01	10.99
40	10.13	10.10	10.14	10.08	9.38	9.39	9.47	8.84	8.95	9.08	8.94	8.86	9.26	9.28	9.87	9.71	10.17	10.11	10.89	10.92	10.84
50	10.00	9.96	9.99	10.03	9.05	9.28	9.33	8.66	8.68	8.71	8.77	8.87	9.11	9.00	9.39	9.70	10.12	9.88	10.67	10.90	10.92
60	9.91	10.06	9.93	9.73	9.15	8.97	9.15	8.61	8.62	8.63	8.72	8.76	9.00	8.93	8.83	9.28	10.23	9.84	10.67	10.84	11.07
70	9.82	9.95	9.83	9.54	8.79	8.89	9.02	8.53	8.48	8.57	8.76	8.82	8.96	8.78	8.90	8.45	9.67	9.60	10.67	10.68	10.89
80	9.88	9.83	9.82	9.51	8.66	8.85	8.85	8.34	8.47	8.41	8.62	8.49	8.89	8.78	8.62	8.42	9.34	9.39	10.78	10.88	10.90
90	9.78	9.71	9.71	9.33	8.69	8.67	8.75	8.29	8.29	8.40	8.54	8.53	8.70	8.59	8.66	7.89	8.47	8.36	10.67	10.73	10.66
100	9.82	9.69	9.65	9.30	8.49	8.46	8.65	7.99	8.21	8.01	8.36	8.23	8.58	8.51	8.13	7.66	8.56	8.20	10.79	10.67	10.64
110	9.73	9.62	9.47	9.21	8.40	8.38	8.38	8.02	8.04	7.95	8.22	8.24	8.41	8.33	8.20	7.74	8.40	7.87	10.66	10.70	10.62
120	9.79	9.38	9.37	9.08	8.34	8.33	8.38	7.88	7.84	7.72	8.02	8.01	8.24	8.12	7.74	7.69	8.30	7.92	10.61	10.76	10.66
130	9.65	9.35	9.29	9.00	8.24	8.26	8.27	7.81	7.91	7.71	7.58	8.09	8.01	8.19	7.74	7.54	7.95	7.75	10.52	10.55	10.42
140	9.61	9.38	9.10	8.94	8.22	8.21	8.14	7.75	7.86	7.61	7.58	7.72	7.66	8.15	7.34	7.35	7.94	7.74	10.50	10.75	10.40
150	9.65	9.13	9.02	8.69	7.96	7.82	7.89	7.45	7.25	7.35	7.25	7.25	7.32	7.50	7.18	7.39	7.58	7.55	10.46	10.54	10.37

Secchi depth

(m)	11	17.5	13	14.5	16	15.5	13.5	14.5	16	18.2	16.5	19	16	16	18.5	18	18.5	14.5	14	13	11

Lake Taupo Temperature, Dissolved Oxygen, and Secchi Depth Database. **2005-2006**
Mid-Lake site A for the period starting 17 August 2005

Temperature

Date	17/08/2005	31/08/2005	14/09/2005	29/09/2005	12/10/2005	25/10/2005	10/11/2005	1/12/2005	10/01/2006	2/02/2006	1/03/2006	12/04/2006	27/04/2006	9/05/2006	30/05/2006	27/06/2006	11/07/2006	25/07/2006	4/09/2006
Depth (m)																			
0	11.17	11.74	12.42	11.91	11.92	13.40	16.10	15.09	17.40	20.20	19.50	16.71	16.31	15.70	14.21	11.94	11.51	11.15	11.10
10	10.98	11.24	11.76	11.68	11.79	12.84	14.59	14.93	17.10	20.11	19.50	16.72	16.29	15.70	14.21	11.99	11.51	11.15	10.93
20	10.97	11.10	11.22	11.67	11.76	12.17	14.27	14.22	16.85	18.15	19.25	16.72	16.29	15.70	14.21	11.99	11.50	11.15	10.93
30	10.97	11.05	11.05	11.66	11.66	11.63	12.36	13.34	14.84	15.46	16.14	16.71	16.29	15.70	14.21	11.99	11.48	11.15	10.89
40	10.97	11.00	11.01	11.60	11.47	11.47	11.66	12.32	12.21	13.40	12.93	16.48	13.96	13.40	14.20	11.99	11.48	11.15	10.87
50	10.97	10.98	10.98	11.18	11.39	11.29	11.27	11.66	11.60	11.75	11.57	12.00	12.20	11.94	14.16	11.99	11.48	11.15	10.83
60	10.97	10.97	10.99	11.02	11.37	11.17	11.15	11.26	11.21	11.35	11.35	11.53	11.56	11.36	11.54	11.39	11.47	11.15	10.82
70	10.96	10.97	10.97	10.97	11.26	11.06	11.04	11.11	11.13	11.19	11.16	11.29	11.30	11.23	11.27	11.21	11.46	11.15	10.82
80	10.97	10.96	10.97	10.97	11.13	10.99	11.00	11.06	11.06	11.11	11.14	11.19	11.19	11.14	11.19	11.16	11.45	11.15	10.82
90	10.96	10.96	10.96	10.96	11.07	10.97	10.98	11.01	11.05	11.06	11.06	11.12	11.12	11.10	11.16	11.15	11.42	11.15	10.81
100	10.96	10.95	10.96	10.95	11.01	10.97	10.97	10.98	11.04	11.04	11.05	11.08	11.08	11.09	11.12	11.14	11.23	11.15	10.81
110	10.96	10.94	10.94	10.94	10.98	10.94	10.95	10.97	11.02	11.02	11.05	11.05	11.07	11.06	11.11	11.14	11.20	11.15	10.81
120	10.96	10.94	10.93	10.93	10.98	10.94	10.94	10.97	11.00	11.02	11.05	11.03	11.06	11.06	11.09	11.13	11.19	11.15	10.80
130	10.96	10.93	10.93	10.92	10.96	10.93	10.93	10.96	10.99	11.00	11.03	11.02	11.05	11.04	11.07	11.13	11.18	11.15	10.79
140	10.95	10.93	10.91	10.91	10.96	10.93	10.94	10.96	10.99	11.00	11.00	11.02	11.04	11.03	11.07	11.12	11.18	11.15	10.76
150	10.93	10.93	10.89	10.91	10.96	10.92	10.96	10.97	10.98	10.99	11.00	11.02	11.04	11.04	11.07	11.10	11.14	11.15	10.75

Dissolved Oxygen (g m^{-3})

Depth (m)																			
0	10.52	10.47	10.26	10.35	10.38	10.04	9.95	9.70	9.23	9.00	9.20	9.33	9.39	9.46	9.97	10.29	10.84	10.54	10.52
10	10.55	10.47	10.26	10.47	10.49	9.98	9.99	9.94	9.38	9.39	9.24	9.15	9.96	9.59	10.49	10.27	10.88	10.94	10.47
20	10.41	10.26	10.37	10.39	10.40	10.04	9.88	9.69	9.37	9.20	9.43	9.51	9.39	9.47	9.97	10.30	10.77	10.59	10.33
30	10.39	10.28	10.19	10.39	10.44	9.89	9.74	9.26	8.96	8.94	8.99	9.23	9.31	9.50	10.21	10.22	10.76	10.54	10.23
40	10.31	9.80	9.40	10.32	10.25	9.61	9.48	9.74	8.95	8.69	9.02	8.92	8.82	8.90	9.98	10.22	10.74	10.34	10.13
50	10.29	9.66	9.39	10.20	10.23	9.51	9.36	9.63	8.61	8.59	8.91	8.61	8.70	8.51	10.10	10.16	10.71	10.54	10.00
60	10.17	9.57	9.18	9.83	9.92	9.14	8.65	9.08	8.69	8.22	8.78	8.49	8.31	8.29	9.25	9.64	10.70	10.38	9.91
70	10.13	9.41	9.26	9.63	9.86	9.03	8.83	8.80	8.50	8.20	8.52	8.20	8.51	8.26	8.87	8.85	10.64	10.45	9.82
80	10.06	9.38	9.01	9.46	9.63	8.76	8.50	8.78	8.21	8.04	8.19	7.94	8.17	8.19	8.47	8.42	10.47	10.36	9.88
90	10.05	9.42	9.07	9.38	9.68	8.76	8.59	8.40	8.12	8.07	7.82	7.98	8.10	8.08	8.33	8.15	10.46	10.44	9.78
100	10.04	9.41	8.86	9.20	9.33	8.54	8.35	8.39	7.96	7.88	7.89	8.05	8.12	8.06	8.16	8.05	9.65	10.34	9.82
110	10.04	9.37	8.88	9.12	9.24	8.49	8.41	8.35	7.92	7.94	7.85	7.91	7.84	7.96	8.11	7.96	8.87	10.35	9.73
120	9.96	9.23	8.56	9.03	9.13	8.44	8.22	8.28	7.89	7.62	7.86	7.44	7.57	7.77	8.04	7.89	8.41	10.17	9.79
130	9.93	9.14	8.56	8.96	9.07	8.40	8.27	8.20	7.82	7.78	7.72	7.58	7.49	7.66	8.04	7.84	8.31	10.33	9.65
140	9.32	8.94	8.38	8.79	9.01	8.38	7.92	8.08	7.62	7.36	7.67	7.34	7.32	7.58	7.99	7.82	8.29	10.39	9.61
150	8.63	8.57	8.20	8.56	8.94	8.24	7.86	8.00	7.39	7.28	7.34	7.19	7.15	7.23	7.57	7.61	8.14	10.28	9.65

Secchi depth

(m)	13	13	13	14	14	15	17.5	19.3	19	15.5	15.3	15.8	17	17.5	18.2	15.2	13.5	12	11

Lake Taupo Temperature, Dissolved Oxygen, and Secchi Depth Database. **2004-2005**
Mid-Lake site A for the period starting 24 August 2004

Temperature

Date	24/08/2004	7/09/2004	21/10/2004	2/11/2004	22/11/2004	15/12/2004	11/01/2005	25/01/2005	9/02/2005	22/02/2005	10/03/2005	21/03/2005	14/04/2005	18/05/2005	9/06/2005	20/06/2005	20/07/2005	3/08/2005	17/08/2005	31/08/2005	14/09/2005
Depth (m)																					
0	10.92	10.70	11.75	12.94	15.31	14.17	16.97	19.27	20.73	20.05	19.25	19.34	17.92	14.33	12.98	12.67	11.46	11.12	11.17	11.74	12.42
10	10.83	10.66	11.61	12.89	15.15	14.10	16.01	18.05	20.19	19.73	19.24	19.17	17.96	14.31	12.99	12.47	11.31	11.11	10.98	11.24	11.76
20	10.83	10.66	11.60	12.49	13.69	13.89	15.83	16.72	18.05	18.80	19.23	18.81	17.95	14.24	12.98	12.43	11.31	11.10	10.97	11.10	11.22
30	10.83	10.66	11.59	11.65	13.17	13.79	13.37	14.55	14.65	14.02	14.92	14.59	15.13	14.13	12.98	12.42	11.30	11.11	10.97	11.05	11.05
40	10.83	10.66	11.59	11.28	11.61	13.59	12.39	13.12	12.83	12.36	13.06	12.62	12.92	13.88	12.98	12.44	11.30	11.10	10.97	11.00	11.01
50	10.83	10.65	11.58	10.93	11.09	11.35	11.33	11.89	11.75	11.49	11.75	11.64	12.00	11.47	12.97	12.42	11.28	11.11	10.97	10.98	10.98
60	10.83	10.66	11.15	10.75	10.97	11.03	11.04	11.23	11.12	11.00	11.16	11.20	11.33	11.18	12.57	11.54	11.28	11.10	10.97	10.97	10.99
70	10.83	10.66	10.78	10.72	10.77	10.88	10.86	10.98	10.90	10.87	10.92	10.96	10.99	10.97	11.13	11.07	11.26	11.11	10.96	10.97	10.97
80	10.83	10.65	10.74	10.64	10.73	10.80	10.81	10.91	10.83	10.82	10.88	10.94	10.88	10.93	10.98	11.00	11.21	11.10	10.97	10.96	10.97
90	10.82	10.61	10.72	10.62	10.69	10.73	10.75	10.80	10.75	10.80	10.80	10.81	10.82	10.89	10.95	10.93	10.98	11.10	10.96	10.96	10.96
100	10.83	10.58	10.71	10.61	10.68	10.70	10.74	10.81	10.80	10.78	10.80	10.82	10.78	10.90	10.90	10.91	10.94	11.10	10.96	10.95	10.96
110	10.83	10.56	10.67	10.60	10.64	10.67	10.69	10.72	10.73	10.75	10.74	10.76	10.76	10.87	10.89	10.87	10.93	11.08	10.96	10.94	10.94
120	10.83	10.56	10.66	10.58	10.64	10.66	10.68	10.73	10.76	10.76	10.76	10.79	10.76	10.88	10.87	10.86	10.89	10.99	10.96	10.94	10.93
130	10.82	10.55	10.64	10.57	10.61	10.63	10.66	10.69	10.71	10.71	10.72	10.73	10.74	10.81	10.84	10.86	10.88	10.97	10.96	10.93	10.93
140	10.82	10.53	10.61	10.57	10.61	10.61	10.65	10.68	10.74	10.73	10.75	10.77	10.74	10.82	10.80	10.86	10.88	10.93	10.95	10.93	10.91
150	10.79	10.47	10.56	10.58	10.60	10.62	10.67	10.67	10.70	10.70	10.71	10.72	10.72	10.77	10.78	10.85	10.87	10.90	10.93	10.93	10.89

Dissolved Oxygen (g m^{-3})

Depth (m)																					
0	10.7	10.7	10.4	10.1	9.5	9.9	9.4	8.95	8.64	8.74	8.77	8.89	9.12	9.75	10.12	10.15	10.7	10.7	10.52	10.47	10.26
10	10.5	10.5	10.1	10.2	9.6	9.8	9.5	8.87	8.75	8.78	8.77	8.87	9.01	9.75	10.03	10.12	10.5	10.5	10.55	10.47	10.26
20	10.5	10.5	10.3	10.0	9.5	9.8	9.5	8.79	8.73	8.59	8.72	8.85	9.04	9.66	9.97	10.17	10.5	10.5	10.41	10.26	10.37
30	10.4	10.4	10.1	9.9	9.5	9.7	9.2	8.72	8.68	8.62	8.01	8.34	8.37	9.55	9.97	10.03	10.4	10.4	10.39	10.28	10.19
40	10.4	10.3	10.2	9.9	9.5	9.7	9.2	8.80	8.76	8.68	8.48	8.39	8.66	9.49	9.88	9.99	10.4	10.3	10.31	9.80	9.40
50	10.3	10.3	10.0	9.6	9.4	9.3	9.0	8.54	8.45	8.36	8.16	8.17	8.34	9.01	9.87	9.93	10.3	10.3	10.29	9.66	9.39
60	10.3	10.2	9.9	9.5	9.1	9.4	8.9	8.50	8.41	8.37	8.14	8.22	8.21	8.66	9.69	9.05	10.3	10.2	10.17	9.57	9.18
70	10.2	10.2	9.7	9.3	9.1	9.3	8.8	8.40	8.36	8.32	8.04	8.18	8.21	8.56	8.90	8.72	10.2	10.2	10.13	9.41	9.26
80	10.2	10.1	9.6	9.2	9.0	9.2	8.7	8.29	8.24	8.27	8.04	8.13	8.19	8.22	8.70	8.33	10.2	10.1	10.06	9.38	9.01
90	10.1	10.0	9.4	9.1	8.8	9.1	8.6	8.18	8.12	8.13	8.03	8.11	8.27	8.07	8.39	8.23	10.1	10.0	10.05	9.42	9.07
100	10.1	10.0	9.4	9.0	8.8	9.0	8.5	8.13	7.86	7.93	7.89	7.90	7.99	7.90	8.27	8.06	10.1	10.0	10.04	9.41	8.86
110	9.9	9.9	9.3	9.0	8.8	8.9	8.4	8.07	7.84	7.81	7.82	7.83	7.82	7.75	8.16	7.99	9.9	9.9	10.04	9.37	8.88
120	10.0	9.9	9.3	8.9	8.6	8.8	8.4	8.02	7.78	7.71	7.73	7.81	7.66	7.78	8.08	7.70	10.0	9.9	9.96	9.23	8.56
130	10.0	9.9	9.3	8.7	8.6	8.7	8.3	8.00	7.76	7.71	7.68	7.78	7.69	7.77	8.03	7.57	10.0	9.9	9.93	9.14	8.56
140	9.9	9.9	9.2	8.7	8.4	8.5	8.1	7.83	7.59	7.50	7.36	7.48	7.56	7.69	7.94	7.42	9.9	9.9	9.32	8.94	8.38
150	9.8	9.7	9.0	8.6	8.2	8.3	7.9	7.51	7.54	7.46	7.35	7.43	7.47	7.67	7.75	7.36	9.8	9.7	8.63	8.57	8.20

Secchi depth

(m)	12.5	12	15	16	16	19.5	20	19.5	18	21.5	18.5	20	17.2	16	14.1	13.8	13	14	13	13	13

Lake Taupo Temperature, Dissolved Oxygen, and Secchi Depth Database. **2003-2004**
Mid-Lake site A for the period starting 14 July 2003

Temperature

Date	14/07/2003	31/07/2003	14/08/2003	26/08/2003	8/09/2003	7/10/2003	21/10/2003	19/11/2003	4/12/2003	18/12/2003	13/01/2004	26/02/2004	8/03/2004	31/03/2004	14/04/2004	10/05/2004	10/06/2004	13/07/2004	26/07/2004	24/08/2004	7/09/2004
Depth (m)																					
0	11.85	11.38	11.25	11.23	11.13	11.48	13.11	13.96	16.15	17.72	20.29	17.20	17.50	16.49	15.27	14.74	13.04	11.59	11.29	10.92	10.70
10	11.86	11.38	11.24	11.17	11.13	11.39	11.92	13.79	15.11	17.76	19.60	17.19	17.00	16.29	15.24	14.74	13.05	11.64	11.26	10.83	10.66
20	11.86	11.38	11.24	11.12	11.11	11.37	11.53	13.78	14.53	15.57	16.72	17.18	16.70	16.23	15.21	14.74	13.04	11.62	11.25	10.83	10.66
30	11.86	11.38	11.24	11.11	11.06	11.37	11.40	13.70	12.96	13.23	13.87	17.16	16.55	16.19	15.19	14.74	13.05	11.65	11.25	10.83	10.66
40	11.86	11.38	11.24	11.11	11.06	11.32	11.34	12.30	12.26	12.33	12.58	12.90	13.30	16.15	15.13	14.73	13.05	11.62	11.26	10.83	10.66
50	11.86	11.38	11.24	11.11	11.06	11.31	11.23	11.35	11.48	11.84	11.58	11.83	11.60	12.51	12.40	12.56	13.05	11.65	11.26	10.83	10.65
60	11.86	11.38	11.24	11.11	11.06	11.31	11.19	11.28	11.41	11.39	11.33	11.53	11.60	11.59	11.67	11.66	13.05	11.64	11.26	10.83	10.66
70	11.86	11.38	11.24	11.10	11.06	11.31	11.16	11.23	11.26	11.26	11.26	11.35	11.40	11.40	11.48	11.43	12.42	11.65	11.25	10.83	10.66
80	11.35	11.38	11.24	11.00	11.06	11.30	11.15	11.19	11.25	11.22	11.23	11.30	11.35	11.34	11.39	11.38	11.56	11.64	11.25	10.83	10.65
90	11.31	11.38	11.24	11.09	11.06	11.29	11.13	11.16	11.20	11.17	11.22	11.25	11.27	11.30	11.32	11.35	11.51	11.66	11.25	10.82	10.61
100	11.27	11.35	11.24	11.09	11.06	11.25	11.11	11.15	11.18	11.17	11.21	11.23	11.27	11.27	11.30	11.32	11.39	11.65	11.25	10.83	10.58
110	11.24	11.34	11.23	11.09	11.06	11.21	11.10	11.12	11.17	11.15	11.19	11.20	11.24	11.26	11.28	11.30	11.35	11.65	11.26	10.83	10.56
120	11.22	11.32	11.22	11.09	11.06	11.14	11.10	11.11	11.18	11.14	11.18	11.18	11.22	11.24	11.25	11.30	11.34	11.65	11.26	10.83	10.56
130	11.21	11.27	11.22	11.08	11.06	11.11	11.08	11.09	11.14	11.13	11.17	11.18	11.20	11.22	11.23	11.28	11.33	11.49	11.26	10.82	10.55
140	11.21	11.26	11.21	11.08	11.06	11.09	11.08	11.09	11.15	11.13	11.16	11.17	11.20	11.21	11.21	11.27	11.32	11.39	11.26	10.82	10.53
150	11.20	11.22	11.20	11.08	11.07	11.09	11.08	11.09	11.14	11.13	11.16	11.17	11.20	11.21	11.21	11.26	11.31	11.34	11.26	10.79	10.47

Dissolved Oxygen (g m^{-3})

Depth (m)																					
0	10.3	10.6	10.5	10.5	10.5	10.5	10.1	9.9	9.5	9.1	9.2	9.3	9.4	9.2	9.5	9.7	10.2	10.5	10.6	10.7	10.7
10	10.2	10.4	10.5	10.5	10.6	10.5	10.0	9.9	9.5	9.2	9.3	9.4	9.0	9.1	9.2	9.6	9.9	10.5	10.6	10.5	10.5
20	10.2	10.2	10.3	10.4	10.4	10.4	10.2	9.8	9.4	9.0	9.1	9.0	8.8	9.0	9.1	9.4	9.8	10.5	10.6	10.5	10.5
30	10.2	9.9	10.1	10.3	10.1	10.1	10.0	9.5	9.2	9.2	9.1	8.9	8.5	9.0	8.8	9.3	9.5	10.3	10.3	10.4	10.4
40	10.1	9.9	10.0	10.0	9.8	10.0	9.7	9.3	9.0	9.1	8.7	8.4	8.0	8.9	8.8	9.2	9.5	10.1	10.1	10.4	10.3
50	10.0	9.0	9.9	9.9	9.8	9.8	9.4	9.0	8.7	8.8	8.5	8.1	7.9	8.2	8.2	8.6	9.4	9.8	9.9	10.3	10.3
60	9.9	8.8	9.8	9.7	9.6	9.7	9.2	8.9	8.6	8.4	8.2	8.0	7.7	8.0	8.0	8.2	9.4	9.9	9.8	10.3	10.2
70	9.9	8.7	9.8	9.6	9.6	9.6	9.1	8.7	8.5	8.3	8.1	7.9	7.6	8.0	7.8	7.9	9.1	9.6	9.7	10.2	10.2
80	8.7	8.6	9.7	9.5	9.5	9.6	8.9	8.6	8.4	8.1	8.0	7.9	7.5	8.0	7.7	7.9	8.5	9.7	9.6	10.2	10.1
90	8.5	8.5	9.7	9.5	9.5	9.5	8.9	8.6	8.3	8.1	8.0	7.9	7.5	7.9	7.6	7.8	8.0	9.5	9.5	10.1	10.0
100	8.2	8.4	9.6	9.5	9.5	9.4	8.8	8.6	8.2	7.9	7.8	7.8	7.4	7.8	7.5	7.7	7.7	9.5	9.4	10.1	10.0
110	8.2	8.1	9.6	9.4	9.5	9.3	8.8	8.4	8.2	7.9	7.8	7.7	7.3	7.7	7.4	7.6	7.6	9.4	9.4	9.9	9.9
120	8.0	8.0	9.5	9.4	9.5	9.3	8.7	8.4	8.1	7.8	7.7	7.5	7.1	7.6	7.3	7.4	7.5	9.4	9.3	10.0	9.9
130	8.0	7.9	9.5	9.4	9.4	9.1	8.7	8.3	8.0	7.8	7.5	7.3	7.0	7.5	7.2	7.3	7.4	9.1	9.2	10.0	9.9
140	7.8	7.8	9.5	9.3	9.4	9.0	8.5	8.2	7.9	7.5	7.4	7.3	6.9	7.4	7.0	7.3	7.3	8.3	9.2	9.9	9.9
150	7.7	7.6	9.3	9.3	9.4	8.9	8.5	8.0	7.7	7.3	7.2	7.1	6.8	7.1	6.8	7.1	7.3	8.0	9.2	9.8	9.7

Secchi depth

(m)	14.5	14	13.5	13	12.5	13	17	16	18.5	17.5	19	17	15	16	15	18	13.5	12	11	12.5	12

Lake Taupo Temperature, Dissolved Oxygen, and Secchi Depth Database. **2003-2004**
Additional site B (Kuratau Basin) for the period starting 14 July 2003

Temperature

Date Depth (m)	14/07/2003	31/07/2003	14/08/2003	26/08/2003	8/09/2003	7/10/2003	21/10/2003	19/11/2003	4/12/2003	18/12/2003	13/01/2004	26/02/2004	8/03/2004	31/03/2004	14/04/2004	10/05/2004	10/06/2004	13/07/2004	26/07/2004	24/08/2004	7/09/2004
0	11.82	11.32	11.38	11.36	11.13	11.70	13.31	13.79	15.65	17.08	20.25	16.83	17.63	15.92	15.10	14.72	13.02	11.43	11.26	10.92	10.85
10	11.80	11.29	11.22	11.17	11.11	11.44	12.28	13.49	15.00	16.43	19.73	16.72	16.56	15.90	15.02	14.68	12.95	11.40	11.20	10.77	10.59
20	11.79	11.29	11.22	11.14	11.07	11.40	11.71	13.33	13.81	15.28	16.73	16.58	16.51	15.89	15.00	14.64	12.84	11.41	11.20	10.73	10.58
30	11.79	11.29	11.21	11.13	11.03	11.35	11.46	12.22	12.37	13.38	13.74	16.16	16.40	15.88	14.99	14.47	12.71	11.41	11.20	10.72	10.57
40	11.79	11.29	11.21	11.13	11.02	11.34	11.38	11.67	11.90	12.91	12.48	15.75	15.53	15.53	14.18	14.07	12.67	11.41	11.19	10.72	10.57
50	11.79	11.29	11.21	11.13	11.02	11.33	11.28	11.40	11.57	11.65	11.62	12.97	12.55	12.89	12.48	12.48	12.66	11.41	11.19	10.72	10.56
60	11.78	11.29	11.21	11.13	11.01	11.25	11.23	11.31	11.37	11.33	11.40	11.88	11.64	11.69	11.72	11.78	12.57	11.40	11.19	10.72	10.56
70	11.78	11.29	11.21	11.12	11.01	11.12	11.15	11.24	11.25	11.27	11.28	11.55	11.47	11.49	11.51	11.47	12.51	11.41	11.18	10.72	10.56
80	11.77	11.29	11.16	11.12	11.01	11.06	11.09	11.18	11.21	11.25	11.20	11.38	11.41	11.37	11.43	11.38	12.27	11.37	11.18	10.72	10.51
90	11.35	11.29	11.04	11.11	11.01	11.02	11.08	11.13	11.13	11.19	11.16	11.32	11.35	11.32	11.37	11.31	11.77	11.26	11.17	10.71	10.45
100	11.27	11.29	10.91	11.08	11.01	11.02	11.05	11.10	11.11	11.16	11.14	11.28	11.33	11.26	11.30	11.24	11.65	11.24	11.17	10.66	10.38

Dissolved Oxygen (g m^{-3})

Depth (m)	14/07/2003	31/07/2003	14/08/2003	26/08/2003	8/09/2003	7/10/2003	21/10/2003	19/11/2003	4/12/2003	18/12/2003	13/01/2004	26/02/2004	8/03/2004	31/03/2004	14/04/2004	10/05/2004	10/06/2004	13/07/2004	26/07/2004	24/08/2004	7/09/2004
0	10.7	10.9	10.8	10.6	10.6	10.4	10.5	10.1	9.8	9.1	9.2	9.3	9.5	8.8	10.5	11.4	12.3	10.6	10.5	10.5	10.8
10	10.5	11.0	10.6	10.6	10.5	10.4	10.4	10.3	9.9	9.3	9.2	9.1	9.0	9.0	9.5	10.2	10.7	10.6	10.5	10.4	10.7
20	10.3	11.3	10.4	10.2	10.2	10.2	10.1	9.9	9.6	9.4	9.2	9.0	8.9	8.9	9.2	9.9	10.1	10.1	10.5	10.5	10.7
30	10.2	11.2	10.1	9.9	10.1	9.9	10.0	9.6	9.3	9.1	9.0	9.0	8.7	8.8	8.9	9.4	9.7	9.8	10.3	10.4	10.6
40	10.1	11.2	9.9	9.8	9.9	9.6	9.7	9.2	8.9	9.1	8.8	8.7	8.2	8.7	8.5	9.1	9.6	9.6	10.0	10.3	10.5
50	10.0	10.9	9.8	9.6	9.8	9.6	9.4	9.0	8.8	8.7	8.5	8.2	7.9	8.2	7.9	8.5	9.3	9.5	9.8	10.2	10.3
60	9.9	10.7	9.7	9.5	9.7	9.4	9.0	8.8	8.6	8.3	8.2	8.1	7.7	8.0	7.6	8.0	9.2	9.3	9.6	10.1	10.3
70	9.9	10.4	9.7	9.5	9.7	9.3	8.9	8.7	8.6	8.3	8.1	7.9	7.6	7.8	7.3	7.7	8.9	9.2	9.6	10.1	10.2
80	9.8	10.3	9.4	9.4	9.6	9.1	8.7	8.6	8.4	7.9	7.8	7.8	7.4	7.6	7.1	7.4	8.7	9.1	9.4	10.0	10.1
90	9.2	10.1	9.2	9.3	9.6	9.0	8.7	8.5	8.3	7.9	7.8	7.7	7.3	7.6	7.0	7.5	8.3	8.7	9.5	9.9	10.1
100	8.3	10.0	9.2	9.3	9.6	8.9	8.6	8.2	7.9	7.9	7.6	7.4	7.3	7.3	6.8	7.0	8.1	8.1	9.4	9.8	10.0

Secchi depth

	14/07/2003	31/07/2003	14/08/2003	26/08/2003	8/09/2003	7/10/2003	21/10/2003	19/11/2003	4/12/2003	18/12/2003	13/01/2004	26/02/2004	8/03/2004	31/03/2004	14/04/2004	10/05/2004	10/06/2004	13/07/2004	26/07/2004	24/08/2004	7/09/2004
(m)	12	13	13	11.5	11	9.5	15	17	17	15	16	13.5	5	11	14	15.5	12	11	10	10	11

Lake Taupo Temperature, Dissolved Oxygen, and Secchi Depth Database. 2003-2004
Additional site C (Western Bays) for the period starting 14 July 2003

Temperature

Date Depth (m)	14/07/2003	31/07/2003	14/08/2003	26/08/2003	8/09/2003	7/10/2003	21/10/2003	19/11/2003	4/12/2003	18/12/2003	13/01/2004	26/02/2004	8/03/2004	31/03/2004	14/04/2004	10/05/2004	10/06/2004	13/07/2004	26/07/2004	24/08/2004	7/09/2004
0	11.86	11.43	11.56	11.31	11.32	11.85	13.29	15.10	15.79	17.00	20.17	16.90	18.43	16.37	15.41	14.98	13.16	11.58	11.51	10.97	11.14
10	11.80	11.36	11.26	11.21	11.13	11.24	11.93	13.84	15.29	16.33	18.89	16.69	17.02	16.35	15.18	14.80	13.08	11.61	11.32	10.94	10.73
20	11.80	11.34	11.25	11.14	11.09	11.17	11.62	13.76	14.31	15.26	17.11	16.34	16.45	16.35	15.15	14.76	13.07	11.61	11.30	10.90	10.71
30	11.80	11.32	11.25	11.14	11.08	11.14	11.52	13.63	12.99	13.46	13.74	14.66	15.33	15.95	15.15	14.75	13.07	11.61	11.31	10.90	10.71
40	11.80	11.31	11.25	11.14	11.08	11.14	11.50	11.91	12.03	12.88	12.25	12.56	13.64	13.21	15.14	14.73	13.07	11.60	11.31	10.89	10.70
50	11.80	11.31	11.25	11.14	11.07	11.13	11.46	11.42	11.43	11.64	11.57	11.63	11.64	11.68	12.68	12.57	12.80	11.61	11.30	10.90	10.70
60	11.80	11.31	11.25	11.14	11.07	11.13	11.38	11.31	11.30	11.31	11.36	11.53	11.48	11.45	11.76	11.73	11.68	11.60	11.30	10.89	10.70
70	11.80	11.31	11.25	11.14	11.07	11.12	11.21	11.27	11.28	11.26	11.28	11.39	11.37	11.34	11.54	11.48	11.44	11.61	11.30	10.89	10.70
80	11.79	11.31	11.25	11.14	11.07	1.10	11.13	11.20	11.25	11.22	11.25	11.31	11.35	11.32	11.37	11.39	11.37	11.58	11.30	10.89	10.70
90	11.60	11.29	11.25	11.14	11.07	11.04	11.07	11.14	11.21	11.19	11.21	11.26	11.33	11.29	11.30	11.32	11.33	11.61	11.30	10.89	10.70
100	11.28	11.27	11.24	11.14	11.07	11.03	11.07	11.11	11.19	11.12	11.19	11.23	11.32	11.25	11.29	11.31	11.32	11.61	11.30	10.89	10.70
Dissolved Oxygen (g m^{-3})																					
Depth (m)																					
0	10.3	10.7	10.3	10.4	10.4	11.4	10.1	9.8	9.5	9.2	9.2	9.3	9.3	9.4	10.4	10.3	10.6	10.6	11.0	10.4	10.7
10	10.3	10.8	10.3	10.3	10.4	11.0	10.1	9.9	9.9	9.1	9.2	9.1	9.0	9.2	9.5	9.8	10.1	10.6	10.5	10.4	10.4
20	10.1	10.3	10.1	10.1	10.2	10.8	9.9	9.9	9.5	9.2	9.1	9.2	9.1	9.0	9.1	9.7	9.9	10.6	10.2	10.3	10.4
30	10.1	10.0	9.9	9.9	10.0	10.1	9.6	9.6	9.3	9.1	8.8	8.6	8.6	8.9	8.9	9.4	9.7	10.3	9.9	10.2	10.4
40	10.0	10.0	9.8	9.7	9.9	9.7	9.4	9.4	9.0	9.1	8.8	8.4	8.4	8.3	8.7	9.2	9.6	9.9	9.8	10.1	10.3
50	9.9	9.9	9.6	9.6	9.7	9.7	9.3	9.2	8.8	8.8	8.5	8.2	8.0	8.0	8.2	8.7	9.3	9.6	9.6	10.1	10.2
60	9.8	9.6	9.6	9.5	9.6	9.5	9.2	9.0	8.5	8.5	8.2	8.0	7.9	8.0	7.8	8.2	8.6	9.5	9.5	10.1	10.2
70	9.8	9.5	9.5	9.4	9.5	9.4	9.1	8.8	8.5	8.3	8.1	7.9	7.8	7.9	7.5	8.0	8.2	9.4	9.5	10.0	10.1
80	9.7	9.5	9.5	9.4	9.5	9.3	8.8	8.8	8.3	8.2	7.9	7.8	7.8	7.8	7.4	7.8	8.0	9.3	9.4	10.0	10.0
90	9.6	9.1	9.4	9.3	9.4	9.2	8.7	8.6	8.4	7.9	7.8	7.8	7.7	7.7	7.3	7.6	7.9	9.2	9.2	9.9	10.0
100	8.8	8.8	9.0	9.3	9.4	9.1	8.7	8.5	8.3	7.9	7.7	7.6	7.7	7.5	7.3	7.5	7.8	9.1	9.3	9.9	10.0
Secchi depth																					
(m)	14	12	14.5	13	12	12.5	12	17.2	17	19	17.5	14	13	12.5	16.5	16	14	12.5	11	10	12

Lake Taupo Temperature, Dissolved Oxygen, and Secchi Depth Database. **2002-2003**
Mid-Lake site A for the period starting 1 July 2002

Temperature

Date	1/07/2002	17/07/2002	31/07/2002	29/08/2002	18/09/2002	9/10/2002	13/11/2002	28/11/2002	18/12/2002	30/01/2003	13/02/2003	17/03/2003	3/04/2003	28/04/2003	15/05/2003	12/06/2003	14/07/2003	31/07/2003	14/08/2003	26/08/2003	8/09/2003
Depth (m)																					
0	12.13	11.44	11.20	11.10	11.38	11.60	12.58	14.12	15.00	17.84	19.31	18.55	19.05	16.76	15.67	13.59	11.85	11.38	11.25	11.23	11.13
10	12.12	11.44	11.20	10.90	11.33	11.60	12.55	14.02	14.78	17.59	19.19	18.43	18.70	16.73	15.57	13.56	11.86	11.38	11.24	11.17	11.13
20	12.11	11.44	11.20	10.90	11.28	11.40	12.50	12.91	14.48	17.08	18.10	18.37	18.59	16.73	15.56	13.55	11.86	11.38	11.24	11.12	11.11
30	12.11	11.44	11.20	10.80	11.02	11.30	12.38	12.41	14.26	16.13	15.50	16.77	17.02	16.72	15.57	13.55	11.86	11.38	11.24	11.11	11.06
40	12.11	11.44	11.20	10.90	10.97	11.30	12.16	11.98	12.67	12.69	12.85	13.44	13.31	12.80	15.53	12.22	11.86	11.38	11.24	11.11	11.06
50	12.11	11.44	11.20	10.90	10.96	11.20	12.00	11.54	11.87	12.03	12.14	12.03	12.30	11.96	12.20	11.82	11.86	11.38	11.24	11.11	11.06
60	12.10	11.44	11.20	10.80	10.94	11.20	11.72	11.22	11.64	11.70	11.68	11.60	11.81	11.62	11.61	11.52	11.86	11.38	11.24	11.11	11.06
70	12.10	11.44	11.20	10.80	10.93	11.20	11.51	11.09	11.31	11.41	11.33	11.39	11.52	11.34	11.36	11.38	11.86	11.38	11.24	11.10	11.06
80	11.97	11.44	11.20	10.90	10.92	11.10	11.32	10.98	11.17	11.25	11.25	11.27	11.31	11.27	11.27	11.27	11.35	11.38	11.24	11.00	11.06
90	11.49	11.43	11.20	10.90	10.91	11.10	11.13	10.95	11.06	11.15	11.16	11.16	11.20	11.17	11.22	11.21	11.31	11.38	11.24	11.09	11.06
100	11.39	11.41	11.20	10.90	10.90	11.10	11.05	10.92	11.04	11.11	11.10	11.13	11.18	11.15	11.20	11.20	11.27	11.35	11.24	11.09	11.06
110	11.32	11.37	11.20	10.90	10.89	11.00	11.05	10.90	11.04	11.09	11.08	11.10	11.13	11.13	11.16	11.17	11.24	11.34	11.23	11.09	11.06
120	11.29	11.32	11.20	10.90	10.87	11.00	11.01	10.87	11.00	11.06	11.06	11.09	11.13	11.13	11.15	11.15	11.22	11.32	11.22	11.09	11.06
130	11.25	11.27	11.20	10.90	10.85	10.90	10.99	10.85	10.98	11.04	11.04	11.08	11.09	11.10	11.12	11.12	11.21	11.27	11.22	11.08	11.06
140	11.23	11.26	11.20	10.80	10.83	10.90	10.97	10.83	10.97	11.03	11.03	11.09	11.09	11.09	11.12	11.11	11.21	11.26	11.21	11.08	11.06
150	11.23	11.26	11.20	10.80	10.81	10.90	10.96	10.82	10.97	11.03	11.03	11.07	11.08	11.09	11.11	11.11	11.20	11.22	11.20	11.08	11.07

Dissolved Oxygen (g m^{-3})

Depth (m)																					
0	10.3	10.4	9.7	10.5	10.5	10.3	10.2	9.8	9.6	9.1	8.9	9.0	8.8	9.2	9.5	10.0	10.3	10.6	10.5	10.5	10.5
10	10.3	10.7	9.5	10.4	10.7	10.3	10.2	10.0	9.7	9.1	8.9	8.9	8.8	9.2	9.2	9.7	10.2	10.4	10.5	10.5	10.6
20	10.3	10.7	9.4	10.3	10.6	10.2	10.2	10.1	9.6	9.2	8.9	8.8	8.6	9.1	9.3	9.4	10.2	10.2	10.3	10.4	10.4
30	10.2	10.7	9.4	10.3	10.5	10.2	10.2	10.1	9.6	9.1	8.8	8.5	8.3	8.9	9.2	9.3	10.2	9.9	10.1	10.3	10.1
40	10.2	10.6	9.4	10.2	10.4	10.2	10.1	9.7	9.5	9.2	8.8	8.4	8.0	8.4	9.1	9.0	10.1	9.9	10.0	10.0	9.8
50	10.2	10.6	9.4	10.2	10.3	10.1	10.1	9.7	9.3	9.1	8.6	8.2	7.8	8.2	8.2	8.2	10.0	9.0	9.9	9.9	9.8
60	10.1	10.5	9.4	10.2	10.2	10.1	10.0	9.5	9.1	8.9	8.4	8.0	7.7	8.1	8.1	8.1	9.9	8.8	9.8	9.7	9.6
70	10.1	10.5	9.3	10.1	10.2	10.0	9.9	9.5	8.8	8.8	8.4	7.8	7.6	8.0	8.0	8.0	9.9	8.7	9.8	9.6	9.6
80	10.0	10.3	9.4	10.1	10.2	10.1	9.7	9.4	8.7	8.7	8.3	7.8	7.5	7.9	7.8	7.9	8.7	8.6	9.7	9.5	9.5
90	9.7	10.3	9.4	10.1	10.1	10.1	9.5	9.3	8.7	8.7	8.2	7.8	7.4	7.8	7.5	7.6	8.5	8.5	9.7	9.5	9.5
100	8.6	10.1	9.4	10.1	10.0	9.8	9.4	9.1	8.6	8.6	8.1	7.7	7.3	7.7	7.2	7.5	8.2	8.4	9.6	9.5	9.5
110	8.3	9.8	9.3	9.9	9.9	9.8	9.4	9.1	8.4	8.4	8.0	7.6	7.2	7.6	7.1	7.4	8.2	8.1	9.6	9.4	9.5
120	8.1	8.8	9.3	9.9	9.9	9.8	9.3	9.0	8.3	8.3	7.8	7.4	7.0	7.5	7.1	7.2	8.0	8.0	9.5	9.4	9.5
130	8.0	8.5	9.3	9.9	9.9	9.7	9.2	9.0	8.3	8.2	7.7	7.2	6.9	7.4	7.0	7.0	8.0	7.9	9.5	9.4	9.4
140	7.8	8.1	9.3	9.9	9.9	9.4	9.0	8.8	8.2	8.0	7.4	7.1	6.8	7.2	6.8	6.7	7.8	7.8	9.5	9.3	9.4
150	7.8	8.1	9.3	9.8	9.8	9.4	8.9	8.7	8.1	7.9	7.3	6.9	6.5	6.9	6.7	6.5	7.7	7.6	9.3	9.3	9.4

Secchi depth

(m)	16	15.5	12	9.5	12	15.5	18	12.7	13.5	18	19	15	13.5	14	16.5	11	14.5	14	13.5	13	12.5

Lake Taupo Temperature, Dissolved Oxygen, and Secchi Depth Database. **2002-2003**
Additional site B (Kuratau Basin) for the period starting 1 July 2002

Temperature

Date	1/07/2002	17/07/2002	31/07/2002	29/08/2002	18/09/2002	9/10/2002	13/11/2002	28/11/2002	18/12/2002	30/01/2003	13/02/2003	17/03/2003	3/04/2003	28/04/2003	15/05/2003	12/06/2003	14/07/2003	31/07/2003	14/08/2003	26/08/2003	8/09/2003
Depth (m)																					
0	12.13	11.48	11.3	11	11.08	11.70	11.98	13.82	15.16	16.76	18.87	18.74	19.09	16.73	15.79	13.24	11.82	11.32	11.38	11.36	11.13
10	12.09	11.49	11.1	10.8	11.05	11.30	11.94	13.67	15.08	16.75	18.46	18.54	18.82	16.66	15.49	13.02	11.8	11.29	11.22	11.17	11.11
20	12.09	11.48	11.1	10.8	11.03	11.20	11.9	12.79	13.86	16.53	17.71	18.45	18.49	16.62	15.47	12.79	11.79	11.29	11.22	11.14	11.07
30	12.09	11.48	11.1	10.8	11.03	11.20	11.8	12.31	13.4	14.33	16.2	14.87	15.32	16.2	15.41	11.83	11.79	11.29	11.21	11.13	11.03
40	12.08	11.48	11.1	10.8	11.02	11.20	11.68	11.75	13.18	12.98	13.89	12.03	13.25	13.46	13.2	11.62	11.79	11.29	11.21	11.13	11.02
50	11.97	11.49	11.1	10.8	10.91	11.20	11.44	11.44	12.91	12.1	12.59	12.06	12	12.28	12.09	11.51	11.79	11.29	11.21	11.13	11.02
60	11.93	11.49	11.1	10.8	10.9	11.10	11.26	11.27	12.27	11.69	11.75	11.58	11.58	11.7	11.71	11.38	11.78	11.29	11.21	11.13	11.01
70	11.87	11.48	11.1	10.8	10.89	11.10	11.11	11.17	11.58	11.37	11.4	11.36	11.35	11.4	11.4	11.29	11.78	11.29	11.21	11.12	11.01
80	11.78	11.48	11.1	10.8	10.89	11.00	11	11.03	11.51	11.23	11.3	11.24	11.25	11.25	11.28	11.27	11.77	11.29	11.16	11.12	11.01
90	11.37	11.46	11.1	10.7	10.87	11.00	10.93	10.96	11.39	11.14	11.17	11.13	11.15	11.18	11.21	11.26	11.35	11.29	11.04	11.11	11.01
100	11.28	11.3	11	10.7	10.85	11.00	10.91	10.92	11.2	11.09	11.12	11.13	11.12	11.12	11.18	11.25	11.27	11.29	10.91	11.08	11.01
110			10.7	10.7		10.90															

Dissolved Oxygen (g m^{-3})

Depth (m)																					
0	10.3	10.4	9.9	10.4	10.4	10.4	10.3	9.9	9.6	9.3	9.4	8.9	8.9	9.7	9.4	10	10.7	10.9	10.8	10.6	10.6
10	10.3	10.8	9.7	10.3	10.5	10.5	10.3	10	9.7	9.3	9.3	8.9	8.8	9.6	9.4	10	10.5	11	10.6	10.6	10.5
20	10.2	10.6	9.6	10.3	10.5	10.3	10.3	9.9	9.5	9.2	9.3	8.8	8.5	9.5	9.3	9.6	10.3	11.3	10.4	10.2	10.2
30	10.2	10.6	9.6	10.2	10.5	10.3	103	9.9	9.6	9.2	9.2	8.2	8.1	9.4	8.8	9.2	10.2	11.2	10.1	9.9	10.1
40	10.1	10.5	9.6	10.2	10.4	10.2	10.2	9.5	9.4	9.1	9	8.2	8	8.8	8.5	8.8	10.1	11.2	9.9	9.8	9.9
50	10.1	10.5	9.6	10.1	10.3	10.1	10.1	9.5	9.4	8.9	8.8	8	7.7	8.3	7.9	8.5	10	10.9	9.8	9.6	9.8
60	9.8	10.4	9.6	10.1	10.2	10.1	9.9	9.4	9.2	8.6	8.6	7.8	7.6	8.3	7.8	8.3	9.9	10.7	9.7	9.5	9.7
70	9.7	10.4	9.5	10	10.1	9.8	9.8	9.4	9	8.4	8.4	7.7	7.4	8.2	7.7	8.2	9.9	10.4	9.7	9.5	9.7
80	9.5	10.3	9.5	10	10.1	9.7	9.7	9	8.6	8.3	8.3	7.3	7.3	8	7.7	8.1	9.8	10.3	9.4	9.4	9.6
90	9.1	10.3	9.5	10	10	9.7	9.5	9	8.6	8.2	8	7.2	7.1	7.7	7.5	7.7	9.2	10.1	9.2	9.3	9.6
100	8.7	9.8	9.6	9.9	9.9	9.7	9.2	9	8.4	7.7	7.6	7	7	7.6	7.1	7.5	8.3	10	9.2	9.3	9.6
110			9.2	9.8		9.4															

Secchi depth

(m)	16	12.5	10.5	8	11	16	14	12.7	14	18	11	14	12.8	13.5	15.5	12	12	13	13	11.5	11

Lake Taupo Temperature, Dissolved Oxygen, and Secchi Depth Database. 2002-2003
Additional site C (Western Bays) for the period starting 1 July 2002

Temperature

Date	1/07/2002	17/07/2002	31/07/2002	29/08/2002	18/09/2002	9/10/2002	13/11/2002	28/11/2002	18/12/2002	30/01/2003	13/02/2003	17/03/2003	3/04/2003	28/04/2003	15/05/2003	12/06/2003	14/07/2003	31/07/2003	14/08/2003	26/08/2003	8/09/2003
Depth (m)																					
0	12.22	11.52	11.6	11.4	11.24	12.10	12.56	13.98	15.12	17.61	19.58	19.04	18.15	17.1	15.8	13.65	11.86	11.43	11.56	11.31	11.32
10	12.15	11.5	11.2	10.9	11.23	11.30	12.5	13.45	14.21	17.49	18.95	18.45	18.58	16.82	15.54	13.62	11.8	11.36	11.26	11.21	11.13
20	12.14	11.49	11.2	10.9	11.16	11.30	12.38	12.63	13.31	17.48	17.41	18.29	18.3	16.77	15.52	13.59	11.8	11.34	11.25	11.14	11.09
30	12.14	11.49	11.2	10.8	11.06	11.20	12.33	12.42	12.73	14.31	14.19	14.81	14.61	16.76	15.51	13.59	11.8	11.32	11.25	11.14	11.08
40	12.13	11.49	11.2	10.8	11.02	11.20	11.75	12.2	11.98	12.36	12.79	12.88	12.73	13.62	13.07	13.59	11.8	11.31	11.25	11.14	11.08
50	12.13	11.49	11.2	10.8	11.02	11.20	11.28	11.98	11.53	12	11.98	11.86	12.1	12.08	12.14	13.54	11.8	11.31	11.25	11.14	11.07
60	11.92	11.49	11.2	10.8	11	11.10	11.12	11.37	11.33	11.61	11.68	11.49	11.71	11.56	11.71	13.28	11.8	11.31	11.25	11.14	11.07
70	11.55	11.49	11.2	10.8	10.99	11.10	11.08	11.21	11.15	11.29	11.3	11.35	11.37	11.35	11.4	11.8	11.8	11.31	11.25	11.14	11.07
80	11.5	11.49	11.2	10.8	10.95	11.10	11.03	11.04	11.12	11.19	11.19	11.25	11.22	11.24	11.27	11.45	11.79	11.31	11.25	11.14	11.07
90	11.47	11.49	11.2	10.8	10.94	11.00	11	10.98	11.1	11.11	11.15	11.2	11.18	11.18	11.22	11.35	11.6	11.29	11.25	11.14	11.07
100	11.45	11.49	11.2	10.8	10.92	11.00	10.97	10.96	11.08	11.08	11.13	11.2	11.15	11.15	11.17	11.23	11.28	11.27	11.24	11.14	11.07

Dissolved Oxygen (g m^{-3})

Depth (m)																					
0	10.4	10.5	9.7	10.3	10.5	10.4	10.2	9.9	9.6	9.1	9.5	9.9	8.9	9.4	9.3	10	10.3	10.7	10.3	10.4	10.4
10	10.4	10.8	9.5	10.2	10.7	10.4	10.3	9.7	9.6	9	9.3	9.7	8.8	9.2	9.1	9.6	10.3	10.8	10.3	10.3	10.4
20	10.4	10.8	9.5	10.2	10.7	10.4	10.3	9.9	9.7	9	9.3	9	8.8	9.2	9	9.3	10.1	10.3	10.1	10.1	10.2
30	10.3	10.7	9.4	10.1	10.6	10.4	10.2	9.9	9.6	8.7	9	8.4	8.3	9	8.8	9.1	10.1	10	9.9	9.9	10
40	10.3	10.5	9.4	10	10.5	10.3	10.1	9.7	9.5	8.7	9	8.4	8.1	8.5	8.3	9.3	10	10	9.8	9.7	9.9
50	10.2	10.5	9.4	10	10.4	10	9.9	9.7	9.2	8.6	8.7	8.1	7.9	8.2	7.8	9.2	9.9	9.9	9.6	9.6	9.7
60	10	10.5	9.4	10	10.4	10	9.7	9.6	9.1	8.5	8.5	8.1	7.9	8.2	7.8	9.9	9.8	9.6	9.6	9.5	9.6
70	9.6	10.5	9.4	9.9	10.3	9.9	9.7	9.5	9	8.4	8.4	7.9	7.8	8	7.7	9.7	9.8	9.5	9.5	9.4	9.5
80	8.8	10.5	9.3	9.9	10.2	9.9	9.5	9	8.8	8.3	8.3	7.6	7.7	8	7.5	9.4	9.7	9.5	9.5	9.4	9.5
90	8.7	10.4	9.3	9.9	10.1	9.8	9.5	9.1	8.7	8.1	8.3	7.5	7.6	7.9	7.3	9.2	9.6	9.1	9.4	9.3	9.4
100	8.6	10.2	9.3	10	10	9.6	9.3	9.1	8.7	8	8.1	7.3	7.4	7.8	7.2	9.1	8.8	8.8	9	9.3	9.4

Secchi depth

(m)	14	12.5	12	8	12	19	16	15.5	13.5	18.5	19	15	14.5	14.5	17	11	14	12	14.5	13	12

Lake Taupo Temperature, Dissolved Oxygen, and Secchi Depth Database. 2001-2002

Mid-Lake site A for the period starting 2 July 2001

Temperature

Date	2/07/01	25/07/01	13/08/01	3/09/01	25/09/01	25/10/01	12/11/01	10/12/01	20/12/01	8/01/02	22/01/02	6/03/02	4/04/02	22/04/02	5/05/02	19/06/02	1/07/02	17/07/02	31/07/02	29/08/02	18/09/02	9/10/02
Depth (m)																						
0	12.11	11.26	11.15	10.96	11.58	12.97	14.23	15.47	17.92	18.37	19.4	18.69	17.45	17.05	15.51	12.57	12.13	11.44	11.2	11.1	11.38	11.60
10	12.04	11.26	11.12	10.98	11.57	12.91	14.16	15.51	16.60	18.07	18.8	18.69	17.38	16.64	15.54	12.57	12.12	11.44	11.2	10.9	11.33	11.60
20	12.00	11.26	11.12	10.95	11.56	12.90	13.37	15.52	15.46	17.62	18.05	18.68	17.18	16.61	15.52	12.57	12.11	11.44	11.2	10.9	11.28	11.40
30	11.99	11.26	11.11	10.94	11.52	12.89	12.85	14.52	13.79	13.5	14.8	15.3	16.83	16.56	15.5	12.56	12.11	11.44	11.2	10.8	11.02	11.30
40	11.98	11.26	11.11	10.94	11.04	12.00	11.87	13.01	12.41	12.43	13.1	12.42	12.9	13.35	15.39	12.56	12.11	11.44	11.2	10.9	10.97	11.30
50	11.98	11.26	11.11	10.94	10.96	11.50	11.57	11.80	11.70	11.61	12.06	11.73	12.09	11.93	11.92	12.56	12.11	11.44	11.2	10.9	10.96	11.20
60	11.95	11.26	11.10	10.94	10.92	11.13	11.24	11.27	11.32	11.38	11.52	11.43	11.51	11.53	11.49	12.53	12.1	11.44	11.2	10.8	10.94	11.20
70	11.76	11.26	11.09	10.94	10.91	11.01	11.13	11.13	11.22	11.24	11.25	11.27	11.3	11.3	11.33	11.98	12.1	11.44	11.2	10.8	10.93	11.20
80	11.51	11.26	11.08	10.92	10.90	10.96	11.03	11.05	11.16	11.16	11.17	11.2	11.24	11.25	11.27	11.35	11.97	11.44	11.2	10.9	10.92	11.10
90	11.45	11.26	11.08	10.91	10.90	10.95	11.01	11.02	11.12	11.13	11.15	11.17	11.19	11.22	11.28	11.27	11.49	11.43	11.2	10.9	10.91	11.10
100	11.41	11.26	11.08	10.91	10.90	10.94	10.99	11.00	11.08	11.12	11.14	11.16	11.17	11.2	11.38	11.25	11.39	11.41	11.2	10.9	10.9	11.10
110	11.39	11.26	11.08	10.91	10.90	10.92	10.97	10.99	11.07	11.1	11.13	11.13	11.14	11.18	11.27	11.24	11.32	11.37	11.2	10.9	10.89	11.00
120	11.36	11.26	11.08	10.91	10.89	10.92	10.95	10.97	11.04	11.1	11.12	11.13	11.14	11.17	11.26	11.21	11.29	11.32	11.2	10.9	10.87	11.00
130	11.35	11.26	11.07	10.90	10.89	10.91	10.94	10.96	11.04	11.09	11.1	11.13	11.13	11.15	11.24	11.2	11.25	11.27	11.2	10.9	10.85	10.90
140	11.34	11.26	11.07	10.90	10.89	10.90	10.94	10.96	11.04	11.08	11.1	11.13	11.13	11.14	11.23	11.19	11.23	11.26	11.2	10.8	10.83	10.90
150	11.33	11.26	11.07	10.90	10.89	10.90	10.94	10.96	11.03	11.08	11.1	11.12	11.13	11.14	11.19	11.9	11.23	11.26	11.2	10.8	10.81	10.90

Dissolved Oxygen (g m^{-3})

Depth (m)																						
0	9.2	10.2	9.6	10.6	10.4	9.9	9.5	9.4	9.1	9.1	9.0	8.7	8.8	9.4	10.5	10.2	10.3	10.4	9.7	10.5	10.5	10.3
10	9.1	10.5	9.6	10.7	10.4	9.9	9.8	9.5	8.9	9.0	8.9	8.7	8.9	9.3	9.5	10.2	10.3	10.7	9.5	10.4	10.7	10.3
20	9.4	9.4	9.6	10.6	10.4	10.0	9.4	9.5	9.0	9.0	9.1	8.7	8.8	9.3	9.5	10.2	10.3	10.7	9.4	10.3	10.6	10.2
30	9.8	9.2	9.6	10.6	10.4	10.1	9.4	9.1	8.8	9.0	9.1	8.4	8.7	9.2	9.4	10.2	10.2	10.7	9.4	10.3	10.5	10.2
40	9.8	9.1	9.6	10.6	10.0	9.7	8.9	9.1	8.6	8.8	9.0	8.4	8.3	8.7	9.3	10.1	10.2	10.6	9.4	10.2	10.4	10.2
50	9.6	8.9	9.6	10.6	9.9	9.5	9.0	8.7	8.6	8.7	8.7	8.2	8.2	8.3	8.6	10.1	10.2	10.6	9.4	10.2	10.3	10.1
60	9.4	8.9	9.5	10.5	9.8	9.3	8.7	8.6	8.5	8.6	8.6	8.2	8.1	8.1	8.3	10.0	10.1	10.5	9.4	10.2	10.2	10.1
70	9.5	9.0	9.4	10.4	9.7	9.3	8.8	8.7	8.5	8.6	8.5	8.2	8.0	8.0	8.2	9.6	10.1	10.5	9.3	10.1	10.2	10.0
80	7.7	8.9	9.4	10.4	9.7	9.2	8.6	8.4	8.5	8.6	8.4	8.1	7.9	7.9	8.2	8.5	10.0	10.3	9.4	10.1	10.2	10.1
90	7.8	8.9	9.4	10.4	9.6	9.5	8.8	8.5	8.5	8.6	8.2	8.1	7.8	7.8	8.0	8.3	9.7	10.3	9.4	10.1	10.1	10.1
100	7.5	8.6	9.3	10.4	9.6	9.2	8.6	8.4	8.3	8.5	8.1	8.0	7.8	7.8	7.5	8.2	8.6	10.1	9.4	10.1	10.0	9.8
110	7.4	8.7	9.3	10.4	9.6	9.2	8.6	8.4	8.3	8.4	8.1	8.0	7.7	7.7	7.3	8.1	8.3	9.8	9.3	9.9	9.9	9.8
120	6.9	8.5	9.3	10.3	9.5	9.0	8.4	8.4	8.3	8.2	8.1	7.9	7.7	7.6	7.2	8.0	8.1	8.8	9.3	9.9	9.9	9.8
130	6.9	8.5	9.3	10.2	9.5	9.0	8.4	8.4	8.3	8.2	8.2	7.9	7.6	7.5	7.3	7.9	8.0	8.5	9.3	9.9	9.9	9.7
140	6.8	8.3	9.2	10.2	9.5	8.6	8.2	8.2	8.1	8.0	8.1	7.8	7.1	7.8	7.3	7.8	7.8	8.1	9.3	9.9	9.9	9.4
150	6.4	8.2	9.2	10.2	9.3	8.5	8.1	8.1	7.9	7.8	7.9	7.6	7.0	7.2	7.3	7.7	7.8	8.1	9.3	9.8	9.8	9.4

Secchi depth

(m)	12	14.5	13.5	17.5	11	14.5	15.5	16	13	13	15	14.5	19	22	16.4	17	16	15.5	12	9.5	12	15.5

Lake Taupo Temperature, Dissolved Oxygen, and Secchi Depth Database.
Additional site B (Kuratau Basin) for the period starting 8 January 2002 on

2001-2002

Temperature

Date Depth (m)	8/01/2002	22/01/2002	6/03/2002	4/04/2002	22/04/2002	5/05/2002	19/06/2002	1/07/2002	17/07/2002	31/07/2002	29/08/2002	18/09/2002
0	18.1	18.8	18.64	17.38	16.84	15.12	12.45	12.13	11.48	11.3	11	11.08
10	17.55	18.45	18.58	17.35	16.61	15.14	12.44	12.09	11.49	11.1	10.8	11.05
20	15.72	17.4	18.56	17.1	16.6	15.05	12.44	12.09	11.48	11.1	10.8	11.03
30	13.74	13.9	15.07	16.74	16.4	14.75	12.43	12.09	11.48	11.1	10.8	11.03
40	12.62	12.73	13.08	14.3	13.4	14.4	12.24	12.08	11.48	11.1	10.8	11.02
50	11.92	11.98	11.91	12.77	12.12	14.07	12.11	11.97	11.49	11.1	10.8	10.91
60	11.31	11.41	11.5	12.03	11.53	12.96	11.73	11.93	11.49	11.1	10.8	10.9
70	11.21	11.25	11.24	11.5	11.32	12.2	11.49	11.87	11.48	11.1	10.8	10.89
80	11.15	11.19	11.21	11.29	11.24	11.97	11.38	11.78	11.48	11.1	10.8	10.89
90	11.1	11.13	11.15	11.2	11.18	11.69	11.3	11.37	11.46	11.1	10.7	10.87
100	11.1	11.12	11.12	11.19	11.15	11.39	11.22	11.28	11.3	11	10.7	10.85
110										10.7	10.7	

Dissolved Oxygen (g m^{-3})

Depth (m)												
0	8.7	8.8	9.3	9.3	9.3	10.9	10.4	10.3	10.4	9.9	10.4	10.4
10	8.6	9	9.1	9.2	9.3	9.5	10.3	10.3	10.8	9.7	10.3	10.5
20	8.8	9	9.1	9.2	9.2	9.4	10.2	10.2	10.6	9.6	10.3	10.5
30	8.8	8.9	8.6	9.1	9.2	9.3	10.2	10.2	10.6	9.6	10.2	10.5
40	8.7	8.7	8.7	8.9	8.5	9.1	10.1	10.1	10.5	9.6	10.2	10.4
50	8.7	8.4	8.5	8.6	8.2	9	10	10.1	10.5	9.6	10.1	10.3
60	8.7	8.3	8.4	8.4	8	8.6	9	9.8	10.4	9.6	10.1	10.2
70	8.7	8.3	8.3	8.3	7.9	8.1	8.7	9.7	10.4	9.5	10	10.1
80	8.7	8.2	8.1	8.1	7.8	7.9	8.4	9.5	10.3	9.5	10	10.1
90	8.2	8.1	7.9	7.7	7.7	7.8	8.2	9.1	10.3	9.5	10	10
100	8	7.6	7.5	7.7	7.5	7.7	7.8	8.7	9.8	9.6	9.9	9.9
110	8				6.2					9.2	9.8	

Secchi depth

Depth (m)	13.5	12	14.5	19.5	19	13.2	15	16	12.5	10.5	8	11

Lake Taupo Temperature, Dissolved Oxygen, and Secchi Depth Database. **2001-2002**
Additional site C (Western Bays) for the period starting 8 January 2002 on

Temperature

Date Depth (m)	8/01/2002	22/01/2002	6/03/2002	4/04/2002	22/04/2002	5/05/2002	19/06/2002	1/07/2002	17/07/2002	31/07/2002	29/08/2002	18/09/2002	9/10/2002
0	18.72	18.82	18.68	17.47	16.88	15.6	12.58	12.22	11.52	11.6	11.4	11.24	12.10
10	17.41	18.46	18.47	17.24	11.63	15.64	12.56	12.15	11.5	11.2	10.9	11.23	11.30
20	16.95	18.21	18.32	17.16	16.58	15.64	12.56	12.14	11.49	11.2	10.9	11.16	11.30
30	14	13.77	15.9	17.12	16.5	15.61	12.56	12.14	11.49	11.2	10.8	11.06	11.20
40	13.14	12.01	12.98	13.17	13.02	12.26	12.56	12.13	11.49	11.2	10.8	11.02	11.20
50	11.97	11.5	12.13	12.11	11.87	11.57	12.56	12.13	11.49	11.2	10.8	11.02	11.20
60	11.44	11.26	11.59	11.57	11.47	11.37	11.9	11.92	11.49	11.2	10.8	11	11.10
70	11.26	11.17	11.36	11.38	11.32	11.29	11.36	11.55	11.49	11.2	10.8	10.99	11.10
80	11.18	11.16	11.25	11.32	11.26	11.24	11.28	11.5	11.49	11.2	10.8	10.95	11.10
90	11.15	11.14	11.18	11.21	11.23	11.21	11.23	11.47	11.49	11.2	10.8	10.94	11.00
100	11.12	11.11	11.18	11.19	11.19	11.19	11.22	11.45	11.49	11.2	10.8	10.92	11.00
110	11.11	11.1			11.16	11.15				11.2	10.8		10.90
120										11.2	10.8		10.90

Dissolved Oxygen (g m^{-3})

Depth (m)	8/01/2002	22/01/2002	6/03/2002	4/04/2002	22/04/2002	5/05/2002	19/06/2002	1/07/2002	17/07/2002	31/07/2002	29/08/2002	18/09/2002	9/10/2002
0	8.6	8.9	9.3	9.4	9.3	10.6	10.3	10.4	10.5	9.7	10.3	10.5	10.4
10	8.4	8.9	9	9.1	9.2	9.5	10.2	10.4	10.8	9.5	10.2	10.7	10.4
20	8.9	8.9	9	9.1	9.2	9.5	10.2	10.4	10.8	9.5	10.2	10.7	10.4
30	8.6	8.9	8.8	9.1	9.1	9.4	10.1	10.3	10.7	9.4	10.1	10.6	10.4
40	8.6	8.5	8.6	8.6	8.5	8.9	10.1	10.3	10.5	9.4	10	10.5	10.3
50	8.5	8.2	8.5	8.5	8.1	8.6	10	10.2	10.5	9.4	10	10.4	10
60	8.6	8.1	8.5	8.2	7.9	8.3	9.7	10	10.5	9.4	10	10.4	10
70	8.6	8.1	8.2	8.2	7.8	8.2	9.1	9.6	10.5	9.4	9.9	10.3	9.9
80	8.7	8.1	8.1	8	7.7	8	8.4	8.8	10.5	9.3	9.9	10.2	9.9
90	8.6	8.1	8.1	7.9	7.7	7.9	8	8.7	10.4	9.3	9.9	10.1	9.8
100	8.7	8.1	8.1	7.9	7.6	7.8	7.7	8.6	10.2	9.3	10	10	9.6
110	8.5	7.9			7.6	7.7				9.3	10		9.7
120	8.5	7.7								9.1	9.9		9.6

Secchi depth

	8/01/2002	22/01/2002	6/03/2002	4/04/2002	22/04/2002	5/05/2002	19/06/2002	1/07/2002	17/07/2002	31/07/2002	29/08/2002	18/09/2002	9/10/2002
Depth (m)	14.5	15.5	16	19	18.5	15.6	16	14	12.5	12	8	12	19

Lake Taupo Temperature, Dissolved Oxygen, and Secchi Depth Database. 2000-2001

For the period starting 11 July 2000

Temperature

Date Depth (m)	**11-7-00**	**04-8-00**	**21-8-00**	**11-9-00**	**28-9-00**	**25-10-00**	**13-11-00**	**06-12-00**	**03-1-01**	**15-1-01**	**20-2-01**	**01-3-01**	**19-3-01**	**09-4-01**	**11-4-01**	**10-5-01**	**29-5-01**	**02-7-01**	**25-7-01**	**13-8-01**
0	11.87	11.32	11.19	11.80	12.47	14.04	13.27	15.73	18.16	18.98	20.47	20.87	19.01	16.99	16.99	15.78	13.62	12.11	11.26	11.15
10	11.87	11.32	11.15	11.46	11.52	13.03	13.09	15.06	17.37	18.51	19.37	20.71	19.05	16.87	16.99	15.78	13.74	12.04	11.26	11.12
20	11.86	11.32	11.14	11.33	11.36	11.99	12.98	14.15	15.46	14.79	18.08	18.98	19.06	16.78	16.97	15.78	13.78	12.00	11.26	11.12
30	11.86	11.33	11.14	11.30	11.33	11.83	12.80	13.31	13.61	13.63	16.06	15.95	16.46	15.82	16.84	15.73	13.79	11.99	11.26	11.11
40	11.86	11.33	11.14	11.27	11.31	11.60	12.36	12.49	12.73	12.81	13.39	13.36	13.05	13.13	13.87	13.19	13.80	11.98	11.26	11.11
50	11.86	11.33	11.14	11.22	11.30	11.49	12.10	12.16	12.21	12.27	12.67	12.58	12.42	12.35	12.68	12.42	13.80	11.98	11.26	11.11
60	11.64	11.33	11.15	11.18	11.27	11.42	11.69	11.78	11.76	11.87	12.01	12.01	11.84	11.81	11.89	11.90	11.92	11.95	11.26	11.10
70	11.42	11.33	11.15	11.15	11.24	11.39	11.41	11.53	11.64	11.67	11.77	11.79	11.67	11.67	11.69	11.69	11.61	11.76	11.26	11.09
80	11.31	11.33	11.15	11.14	11.20	11.38	11.29	11.40	11.47	11.55	11.56	11.63	11.55	11.54	11.54	11.52	11.54	11.51	11.26	11.08
90	11.22	11.33	11.15	11.13	11.17	11.33	11.26	11.36	11.43	11.46	11.50	11.55	11.49	11.46	11.48	11.47	11.46	11.45	11.26	11.08
100	11.21	11.32	11.15	11.13	11.14	11.33	11.21	11.32	11.38	11.39	11.43	11.50	11.43	11.41	11.43	11.42	11.42	11.41	11.26	11.08
110	11.19	11.32	11.15	11.13	11.06	11.29	11.19	11.28	11.36	11.36	11.40	11.46	11.41	11.37	11.39	11.40	11.38	11.39	11.26	11.08
120	11.19	11.31	11.15	11.13	11.04	11.27	11.19	11.27	11.33	11.34	11.39	11.44	11.39	11.33	11.35	11.38	11.35	11.36	11.26	11.08
130	11.18	11.26	11.15	11.12	11.02	11.23	11.17	11.26	11.30	11.32	11.37	11.43	11.37	11.32	11.34	11.36	11.33	11.35	11.26	11.07
140	11.16	11.18	11.14	11.12	11.01	11.18	11.15	11.25	11.30	11.31	11.35	11.40	11.35	11.31	11.32	11.34	11.31	11.34	11.26	11.07
150	11.15	11.18	11.14	11.12	11.01	11.15	11.15	11.25	11.32	11.31	11.33	11.41	11.34	11.31	11.32	11.34	11.31	11.33	11.26	11.07

Dissolved Oxygen (g m^{-3})

Depth (m)	11-7-00	04-8-00	21-8-00	11-9-00	28-9-00	25-10-00	13-11-00	06-12-00	03-1-01	15-1-01	20-2-01	01-3-01	19-3-01	09-4-01	11-4-01	10-5-01	29-5-01	02-7-01	25-7-01	13-8-01
0	9.0	9.0	9.2	9.3	9.1	8.9	8.2	8.7	8.2	8.0	8.0	8.2	8.4	8.3	8.4	8.2	8.7	9.2	10.2	9.6
10	9.0	9.0	9.4	9.5	8.7	8.8	8.4	8.3	8.3	8.6	8.0	8.5	8.3	8.3	8.2	8.0	8.5	9.1	10.5	9.6
20	9.0	9.1	9.4	9.5	8.7	9.1	8.4	8.5	8.4	8.1	8.2	8.6	8.6	8.4	7.9	7.9	8.4	9.4	9.4	9.6
30	9.0	9.1	9.6	9.5	8.7	8.9	8.4	8.5	8.5	8.2	8.0	8.3	8.0	8.0	8.0	7.8	8.4	9.8	9.2	9.6
40	9.0	9.1	9.6	9.5	9.1	8.7	8.2	8.2	8.4	7.9	8.1	8.1	7.6	7.8	7.6	7.7	8.3	9.8	9.1	9.6
50	9.0	9.1	9.6	9.5	9.1	8.5	8.2	8.2	8.2	8.1	7.9	7.8	7.6	7.5	7.4	7.5	8.3	9.6	8.9	9.6
60	9.0	9.1	9.7	9.5	8.7	8.4	8.0	7.9	8.0	7.5	7.7	7.4	6.8	7.2	7.2	7.5	7.2	9.4	8.9	9.5
70	8.9	9.1	9.7	9.5	8.7	8.3	7.9	7.8	7.9	7.4	7.6	7.2	6.8	7.1	7.4	7.3	7.0	9.5	9.0	9.4
80	7.8	9.0	9.7	9.5	8.7	8.2	7.6	7.6	7.8	7.5	7.4	7.0	6.5	6.9	7.3	7.3	7.0	7.7	8.9	9.4
90	7.4	8.9	9.7	9.5	8.7	8.2	7.6	7.6	7.7	7.5	7.4	6.9	6.5	6.9	7.1	7.1	7.0	7.8	8.9	9.4
100	7.2	8.7	9.7	9.5	8.7	8.0	7.5	7.6	7.6	7.3	7.2	6.8	6.6	6.8	7.0	7.0	6.9	7.5	8.6	9.3
110	7.1	8.3	9.7	9.5	8.7	8.0	7.5	7.5	7.6	7.2	7.1	6.7	6.5	6.8	7.0	7.0	6.7	7.4	8.7	9.3
120	6.9	7.9	9.7	9.5	8.2	8.1	7.4	7.4	7.5	7.1	7.0	6.5	6.5	6.7	6.8	6.9	6.6	6.9	8.5	9.3
130	6.9	7.3	9.7	9.5	8.5	8.1	7.4	7.3	7.4	7.0	7.0	6.5	6.5	6.6	6.7	6.6	6.5	6.9	8.5	9.3
140	6.9	7.1	9.7	9.5	8.6	8.0	7.3	7.2	7.2	6.9	6.8	6.4	6.5	6.4	6.4	6.7	6.3	6.8	8.3	9.2
150	6.8	7.4	9.7	9.3	8.5	7.9	7.3	7.1	7.1	6.6	6.5	6.3	6.4	6.3	6.3	6.6	6.1	6.4	8.2	9.2

Secchi depth

Depth (m)	11-7-00	04-8-00	21-8-00	11-9-00	28-9-00	25-10-00	13-11-00	06-12-00	03-1-01	15-1-01	20-2-01	01-3-01	19-3-01	09-4-01	11-4-01	10-5-01	29-5-01	02-7-01	25-7-01	13-8-01
	11	12	15	12	13	11	12	17	17	18	17	14.5	17	13.5	13.5	17	14.5	12	14.5	13.5

Lake Taupo Temperature, Dissolved Oxygen, and Secchi Depth Database. **1999-2000**

For the period starting 13 July 1999

Temperature																			
Date	**13-7-99**	**6-8-99**	**3-9-99**	**29-9-99**	**18-10-99**	**19-12-99**	**18-1-00**	**12-4-00**	**4-5-00**	**25-5-00**	**20-6-00**	**11-7-00**	**4-8-00**	**21-8-00**	**11-9-00**	**28-9-00**	**25-10-00**	**13-11-00**	**6-12-00**
Depth (m)																			
0	12.0	11.8	11.8	11.5	12.8	16.56	18.63	17.41	15.82	14.22	12.28	11.87	11.32	11.19	11.80	12.47	14.04	13.27	15.73
10	12.0	11.4	11.3	11.5	12.7	16.40	18.35	17.25	15.77	14.28	12.28	11.87	11.32	11.15	11.46	11.52	13.03	13.09	15.06
20	12.0	11.4	11.2	11.5	12.4	15.96	17.22	17.21	15.76	14.31	12.28	11.86	11.32	11.14	11.33	11.36	11.99	12.98	14.15
30	12.0	11.4	11.1	11.4	11.6	15.23	14.94	16.65	15.75	14.28	12.27	11.86	11.33	11.14	11.30	11.33	11.83	12.86	13.31
40	12.0	11.3	11.1	11.2	11.4	12.16	13.29	12.55	13.64	14.22	12.26	11.86	11.33	11.14	11.27	11.31	11.60	12.36	12.49
50	12.0	11.3	11.1	11.1	11.3	11.64	11.91	11.67	12.14	12.53	12.26	11.86	11.33	11.14	11.22	11.30	11.49	12.10	12.16
60	12.0	11.3	11.0	11.1	11.1	11.35	11.45	11.39	11.56	11.56	12.21	11.85	11.33	11.15	11.18	11.27	11.42	11.69	11.78
70	12.0	11.3	11.0	11.0	11.1	11.25	11.31	11.29	11.36	11.34	11.58	11.64	11.33	11.15	11.15	11.24	11.39	11.41	11.53
80	11.4	11.3	11.0	11.0	11.0	11.18	11.21	11.23	11.24	11.23	11.32	11.42	11.33	11.15	11.14	11.20	11.38	11.29	11.40
90	11.3	11.3	11.0	11.0	11.0	11.16	11.17	11.20	11.21	11.20	11.24	11.31	11.33	11.15	11.13	11.17	11.33	11.26	11.36
100	11.2	11.2	11.0	11.0	11.0	11.14	11.14	11.17	11.17	11.15	11.17	11.22	11.32	11.15	11.13	11.14	11.33	11.21	11.32
110	11.2	11.2	11.0	11.0	11.0	11.12	11.12	11.15	11.14	11.12	11.16	11.21	11.32	11.15	11.13	11.06	11.29	11.19	11.28
120	11.2	11.1	11.0	11.0	11.0	11.10	11.09	11.13	11.12	11.10	11.14	11.19	11.31	11.15	11.13	11.04	11.27	11.19	11.27
130	11.1	11.1	11.0	11.0	11.0	11.08	11.08	11.11	11.10	11.09	11.12	11.18	11.26	11.15	11.12	11.02	11.23	11.17	11.26
140	11.1	11.1	11.0	11.0	11.0	11.07	11.07	11.09	11.09	11.09	11.10	11.16	11.18	11.14	11.12	11.01	11.18	11.15	11.25
150	11.1	11.0	11.0	10.9	11.0	11.10	11.06	11.09	11.09	11.07	11.10	11.15	11.18	11.14	11.12	11.01	11.15	11.15	11.25
Dissolved Oxygen (g m^{-3})																			
Depth (m)																			
0	10.5	10.1	9.2	9.5	8.9	8.3	7.9	9.2	8.7	8.5	8.1	9.0	9.0	9.2	9.3	9.1	8.9	8.2	8.7
10	10.7	10.2	9.8	9.8	8.9	8.6	7.9	9.2	8.6	8.3	8.3	9.0	9.0	9.4	9.5	8.7	8.8	8.4	8.3
20	10.7	9.9	9.8	9.9	8.9	8.7	8.1	9.2	8.8	8.5	8.7	9.0	9.1	9.4	9.5	8.7	9.1	8.4	8.5
30	10.6	10.0	9.8	9.7	8.9	8.7	8.3	9.0	8.8	8.5	8.6	9.0	9.1	9.6	9.5	8.7	8.9	8.4	8.5
40	10.6	9.7	9.5	9.6	8.8	8.7	8.1	8.3	8.2	8.6	8.6	9.0	9.1	9.6	9.5	9.1	8.7	8.2	8.2
50	10.4	9.9	9.5	9.3	8.6	8.7	8.0	8.0	7.9	8.2	8.6	9.0	9.1	9.6	9.5	9.1	8.5	8.2	8.2
60	10.4	9.8	9.4	9.2	8.6	8.6	8.0	8.0	7.9	7.7	8.7	9.0	9.1	9.7	9.5	8.7	8.4	8.0	7.9
70	10.3	9.7	9.3	9.0	8.6	8.7	8.0	8.0	7.8	7.7	8.4	8.9	9.1	9.7	9.5	8.7	8.3	7.9	7.8
80	10.3	9.0	9.2	9.0	8.5	8.5	7.9	7.9	7.7	7.6	7.6	7.8	9.0	9.7	9.5	8.7	8.2	7.6	7.6
90	8.1	8.6	9.2	9.0	8.6	8.5	7.7	7.9	7.8	7.4	7.4	7.4	8.9	9.7	9.5	8.7	8.2	7.6	7.6
100	7.9	7.3	9.2	8.9	8.6	8.5	8.3	7.7	7.6	7.4	7.3	7.2	8.7	9.7	9.5	8.7	8.0	7.5	7.6
110	7.5	7.1	9.1	8.9	8.6	8.3	8.1	7.7	7.6	7.6	7.4	7.1	8.3	9.7	9.5	8.7	8.0	7.5	7.5
120	7.4	6.8	9.1	8.9	8.3	8.4	8.1	7.7	7.4	7.5	7.3	6.9	7.9	9.7	9.5	8.2	8.1	7.4	7.4
130	7.3	6.7	9.0	8.8	7.9	8.2	8.0	7.5	7.4	7.5	7.3	6.9	7.3	9.7	9.5	8.5	8.1	7.4	7.3
140	7.1	6.7	8.9	8.7	7.5	8.1	8.0	7.5	7.2	7.4	7.2	6.9	7.1	9.7	9.5	8.6	8.0	7.3	7.2
150	6.9	6.4	8.9	8.6	7.5	8.0	7.5	7.2	6.8	7.0	6.9	6.8	7.4	9.7	9.3	8.5	7.9	7.3	7.1
Secchi depth																			
Depth (m)	16	14.5	10	10	14.9	18	19.1	15	14	14	14	11	12	15	12	13	11	12	17

Lake Taupo Temperature, Dissolved Oxygen, and Secchi Depth Database. **1998-1999**

For the period starting 28 July 1998

Temperature																		
Date	**28-7-98**	**22-8-98**	**29-9-98**	**1-11-98**	**26-11-98**	**22-12-98**	**12-2-99**	**3-3-99**	**14-4-99**	**30-4-99**	**19-5-99**	**1-6-99**	**17-6-99**	**13-7-99**	**6-8-99**	**3-9-99**	**29-9-99**	**18-10-99**
Depth (m)																		
0	11.4	11.5	12.9	13.6	18.4	18.5	20.1	20.9	18.3	16.4	14.4	14.2	13.0	12.0	11.8	11.8	11.5	12.8
10	11.6	11.3	11.9	13.2	15.6	16.7	20.1	19.8	18.3	16.4	14.4	14.1	13.4	12.0	11.4	11.3	11.5	12.7
20	11.6	11.3	11.5	12.7	15.4	15.7	20.1	19.8	18.3	16.4	14.5	14.1	13.4	12.0	11.4	11.2	11.5	12.4
30	11.6	11.3	11.3	12.4	12.7	14.5	14.9	15.1	18.1	16.0	14.5	14.1	13.4	12.0	11.4	11.1	11.4	11.6
40	11.6	11.3	11.2	12.4	12.1	12.7	13.2	13.1	12.9	13.1	14.5	13.9	13.4	12.0	11.3	11.1	11.2	11.4
50	11.6	11.3	11.1	12.2	11.8	11.8	12.1	12.1	11.9	12.2	13.1	13.0	13.4	12.0	11.3	11.1	11.1	11.3
60	11.6	11.3	11.1	11.7	11.5	11.5	11.6	11.8	11.6	12.0	11.8	12.0	12.1	12.0	11.3	11.0	11.1	11.1
70	11.6	11.1	11.0	11.2	11.3	11.3	11.4	11.5	11.4	11.8	11.3	11.4	11.5	12.0	11.3	11.0	11.0	11.1
80	10.6	10.9	11.0	11.1	11.2	11.2	11.2	11.4	11.3	11.2	11.2	11.3	11.3	11.4	11.3	11.0	11.0	11.0
90	10.6	10.9	10.9	11.1	11.1	11.1	11.1	11.3	11.2	11.1	11.1	11.2	11.2	11.3	11.3	11.0	11.0	11.0
100	10.5	10.8	10.9	11.0	11.1	11.1	11.1	11.3	11.2	11.1	11.1	11.1	11.2	11.2	11.2	11.0	11.0	11.0
110	10.5	10.5	10.9	11.0	11.0	11.1	11.1	11.2	11.2	11.1	11.1	11.1	11.1	11.2	11.2	11.0	11.0	11.0
120	10.5	10.5	10.9	11.0	11.0	11.0	11.0	11.2	11.2	11.1	11.1	11.1	11.1	11.2	11.1	11.0	11.0	11.0
130	10.5	10.5	10.7	11.0	11.0	11.1	11.1	11.1	11.1	11.1	11.0	11.1	11.1	11.1	11.1	11.0	11.0	11.0
140	10.5	10.5	10.7	10.9	11.0	11.1	11.1	11.1	11.1	11.1	11.0	11.1	11.0	11.1	11.1	11.0	11.0	11.0
150	10.5	10.5	10.7	10.9	11.0	11.1	11.1	11.1	11.1	11.1	11.0	11.1	11.0	11.1	11.0	11.0	10.9	11.0
Dissolved Oxygen (g m^{-3})																		
Depth (m)																		
0	10.6	10.6	10.6	10.4	9.6	9.7	9.0	8.6	9.1	9.5	9.9	10.0	10.4	10.5	10.1	9.2	9.5	8.9
10	10.5	10.5	10.7	10.7	9.9	10.1	9.0	8.7	9.2	9.5	10.5	10.4	10.3	10.7	10.2	9.8	9.8	8.9
20	10.4	10.4	10.6	10.7	9.8	10.2	8.9	8.7	9.1	9.6	10.4	10.4	10.4	10.7	9.9	9.8	9.9	8.9
30	10.4	10.3	10.5	10.6	10.1	10.2	9.9	9.5	9.1	9.6	10.1	10.7	10.5	10.6	10.0	9.8	9.7	8.9
40	10.3	10.3	10.3	10.4	10.0	10.1	9.9	9.2	9.1	9.1	10.0	10.4	10.4	10.6	9.7	9.5	9.6	8.8
50	10.3	10.2	10.2	10.2	9.8	9.9	9.6	8.9	9.0	8.7	9.2	9.6	10.4	10.4	9.9	9.5	9.3	8.6
60	10.3	10.1	10.1	10.0	9.7	9.7	9.5	8.8	8.9	8.7	8.7	9.4	9.0	10.4	9.8	9.4	9.2	8.6
70	10.3	9.5	9.9	9.6	9.5	9.5	9.4	8.7	8.7	8.6	8.3	9.1	8.9	10.3	9.7	9.3	9.0	8.6
80	8.6	8.2	9.5	9.1	9.2	9.3	9.2	8.6	8.6	8.4	8.2	9.1	8.6	10.3	9.0	9.2	9.0	8.5
90	8.5	7.9	9.3	8.8	9.1	9.1	9.1	8.4	8.6	8.0	7.8	8.8	8.5	8.1	8.6	9.2	9.0	8.6
100	8.3	7.4	8.9	8.5	9.1	8.9	8.9	8.3	8.6	8.0	7.7	8.5	8.2	7.9	7.3	9.2	8.9	8.6
110	8.3	7.4	8.5	8.3	8.8	8.9	8.7	8.2	8.5	8.0	7.5	8.2	8.1	7.5	7.1	9.1	8.9	8.6
120	8.2	7.4	7.7	8.0	8.6	8.8	8.3	7.9	8.3	7.9	7.4	8.2	8.0	7.4	6.8	9.1	8.9	8.3
130	8.2	7.4	7.6	7.8	8.4	8.6	8.1	7.7	8.1	7.7	7.3	8.1	7.7	7.3	6.7	9.0	8.8	7.9
140	8.1	7.4	7.4	7.6	8.2	8.4	7.9	7.5	7.9	7.5	7.2	7.8	7.4	7.1	6.7	8.9	8.7	7.5
150	8.1	7.4	7.4	7.6	8.0	8.2	7.7	7.3	7.7	7.3	7.0	7.5	7.3	6.9	6.4	8.9	8.6	7.5
Secchi depth																		
Depth (m)	10.0	10.5	10.4	13.5	15.0	14.5	12.5	14.3	13.0	12.2	15.0	15.0	15.0	16.0	14.5	10.0	10.0	14.9

Lake Taupo Temperature, Dissolved Oxygen, and Secchi Depth Database. **1997-1998**
For the period starting 16 September 1997

Temperature												
Date	**16-9-97**	**11-10-97**	**28-10-97**	**02-12 -97**	**21-1 -98**	**04-3-98**	**24-3-98**	**26-3-98**	**07-4-98**	**29-5-98**	**28-7-98**	**22-8-98**
Depth (m)												
1	10.8	11.8	12.2	14.5	17.7	20.0	19.3	18.6	17.7	14.2	11.4	11.49
10	10.5	11.4	12.0	13.7	17.6	19.9	18.6	18.6	17.7	14.3	11.6	11.32
20	10.5	11.1	11.5	13.6	16.5	19.7	18.5	18.5	17.7	14.0	11.6	11.27
30	10.5	10.8	11.5	13.1	14.3	16.4	18.0	18.1	17.5	13.1	11.6	11.27
40	10.5	10.6	11.4	12.5	12.0	13.3	13.0	12.6	13.7	12.0	11.6	11.27
50	10.5	10.5	11.1	11.5	11.2	12.0	11.9	11.7	11.5	11.2	11.6	11.26
60	10.5	10.5	11.1	11.0	11.0	11.5	11.1	11.1	11.0	10.9	11.6	11.26
70	10.5	10.5	10.8	10.8	10.8	11.0	10.7	10.8	10.8	10.8	11.6	11.12
80	10.5	10.5	10.7	10.7	10.7	10.8	10.6	10.7	10.6	10.6	10.6	10.90
90	10.5	10.5	10.6	10.6	10.6	10.7	10.5	10.6	10.6	10.6	10.6	10.86
100	10.5	10.5	10.5	10.5	10.6	10.7	10.5	10.6	10.6	10.6	10.5	10.82
110	10.5	10.5	10.4	10.5	10.6	10.6	10.5	10.5	10.5	10.6	10.5	10.5
120	10.5	10.5	10.5	10.5	10.5	10.6	10.5	10.5	10.5	10.5	10.5	10.5
130	10.5	10.5	10.5	10.5	10.5	10.6	10.5	10.5	10.5	10.5	10.5	10.5
140	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5
150	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5
Dissolved Oxygen (g m^{-3})												
Depth (m)												
1	10.55	10.37	10.68	9.89	9.27	9.17	9.43	9.10	9.14	9.92	10.60	10.64
10	10.52	10.51	10.22	9.86	9.38	9.19	9.53	9.07	9.10	9.88	10.46	10.50
20	10.50	10.46	10.24	9.86	9.46	9.22	9.61	8.95	9.07	9.87	10.40	10.36
30	10.29	10.46	10.00	9.74	9.81	9.30	9.78	8.97	9.09	9.68	10.35	10.27
40	10.31	10.39	9.96	9.66	9.85	9.32	9.73	9.47	9.32	9.40	10.32	10.26
50	10.27	10.36	9.89	9.47	9.53	9.16	9.55	9.45	9.34	9.26	10.30	10.20
60	10.16	10.31	9.77	9.44	9.37	9.17	9.30	9.47	9.30	9.18	10.28	10.10
70	10.08	10.24	9.76	9.19	9.30	9.11	9.21	9.38	9.24	9.20	10.25	9.54
80	10.06	10.15	9.85	9.04	9.13	9.04	9.14	9.30	9.13	9.12	8.58	8.15
90	10.03	10.09	9.33	9.00	9.10	8.93	9.03	9.24	9.05	9.08	8.52	7.90
100	9.99	10.06	9.23	8.96	9.01	8.89	8.39	9.16	8.97	8.94	8.34	7.36
110	9.96	10.02	9.03	8.87	8.89	8.83	8.38	8.98	8.94	8.78	8.26	7.36
120	9.91	10.00	8.96	8.87	8.84	8.75	8.38	8.87	8.88	8.69	8.21	7.36
130	9.86	9.92	8.76	8.84	8.68	8.63	8.38	8.38	8.79	8.41	8.21	7.36
140	9.82	9.87	8.76	8.71	8.45	8.30	8.38	8.38	8.58	8.41	8.14	7.36
150	9.56	9.69	8.76	8.65	8.38	8.22	8.38	8.38	8.40	8.41	8.14	7.36
Secchi depth data (m)												
Depth (m)	12.0	13.7	12.5	14.5	14.7	11.5	13.5	13.5	13.5	15.5	10.0	10.5

Lake Taupo Temperature, Dissolved Oxygen, and Secchi Depth Database. 1996-1997

For the period starting 3 September 1996

Temperature																		
Date	**3-9-96**	**17-9-96**	**27-9-96**	**17-10-96**	**24-10-96**	**6-11-96**	**28-11-96**	**11-12-96**	**23-12-96**	**8-1-97**	**29-1-97**	**26-3-97**	**2-4-97**	**15-4-97**	**20-5-97**	**29-5-97**	**7-7-97**	**29-7-97**
Depth (m)																		
1	10.5	10.7	12.5	13.3	12.6	13.5	13.6	14.8	16.3	17.9	17.8	17.7	17.3	16.7	14.1	14.2	11.7	10.9
10	10.4	10.6	11.6	12.0	12.3	13.6	13.6	14.8	15.3	16.8	17.6	17.6	17.3	16.7	14.0	14.1	11.7	11.0
20	10.3	10.4	11.1	11.9	12.3	13.4	13.3	14.4	15.1	16.5	17.4	17.2	17.2	16.7	14.0	14.1	11.7	11.0
30	10.3	10.3	11.0	11.8	12.3	13.3	13.3	14.2	15.0	15.6	14.8	16.6	17.2	16.7	12.6	14.1	11.7	11.0
40	10.3	10.3	10.5	11.7	11.9	11.7	11.6	12.7	13.5	13.0	13.4	13.8	14.5	14.0	11.5	14.0	11.7	11.0
50	10.4	10.3	10.4	11.5	11.6	10.8	10.9	12.5	12.4	11.9	11.8	12.4	11.5	11.9	11.0	12.1	11.7	11.0
60	10.3	10.3	10.4	10.9	11.1	10.6	10.9	11.7	11.3	11.2	10.9	11.2	10.9	11.1	10.5	11.8	11.7	11.0
70	10.3	10.3	10.3	10.6	10.6	10.5	10.5	11.7	10.7	10.8	10.7	10.7	10.6	10.9	10.5	11.1	11.7	11.0
80	10.3	10.3	10.3	10.5	10.5	10.4	10.4	11.1	10.6	10.6	10.6	10.5	10.5	10.7	10.5	10.8	10.9	11.0
90	10.3	10.3	10.3	10.4	10.4	10.4	10.4	10.4	10.5	10.5	10.4	10.5	10.5	10.6	10.5	10.6	10.8	10.9
100	10.3	10.3	10.3	10.3	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.5	10.5	10.5	10.5	10.6	10.7
110	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.4	10.4	10.4	10.4	10.4	10.4	10.5	10.5	10.5	10.5	10.6
120	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.4	10.4	10.4	10.4	10.4	10.4	10.5	10.5	10.5	10.5	10.5
130	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.4	10.4	10.4	10.4	10.4	10.4	10.5	10.5	10.5	10.5	10.5
140	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.4	10.3	10.3	10.3	10.4	10.4	10.5	10.5	10.5	10.5	10.5
150	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.4	10.4	10.5	10.4	10.4	10.5	10.5
Dissolved Oxygen (g m^{-3})																		
Depth (m)																		
1	8.81	9.08	10.03	9.78	10.32	9.96	9.99	10.03	9.10	8.71	8.80	9.70	9.40	9.06	9.09	9.3	9.9	10.53
10	9.17	9.17	10.43	9.85	10.27	9.84	9.87	9.97	9.30	8.70	8.80	9.30	9.25	8.95	9.10	9.2	9.8	10.42
20	9.14	8.98	10.32	9.84	10.15	9.80	9.80	9.90	9.30	8.70	8.70	8.93	8.94	8.91	9.06	9.2	9.8	10.45
30	8.98	8.95	10.16	9.84	9.89	9.79	9.81	9.76	9.30	8.80	9.10	8.80	8.82	8.87	9.01	9.2	9.8	10.43
40	8.90	8.93	9.98	9.80	9.89	9.73	9.77	9.70	9.30	9.00	8.90	8.78	8.79	8.82	8.94	9.1	9.8	10.46
50	8.78	8.87	9.69	9.76	9.80	9.29	9.35	9.10	9.30	8.80	8.90	8.51	8.58	8.65	8.86	9.1	9.7	10.40
60	8.73	8.80	9.54	9.67	9.67	9.19	9.14	9.04	9.15	8.60	8.70	8.49	8.56	8.71	8.70	9.0	9.7	10.36
70	8.74	8.80	9.45	9.56	9.44	9.14	9.09	9.03	9.07	8.60	8.60	8.47	8.52	8.71	8.64	8.9	9.7	10.34
80	8.70	8.77	9.37	9.42	9.33	9.03	9.01	9.01	9.00	8.60	8.50	8.36	8.46	8.69	8.48	8.5	8.6	10.34
90	8.63	8.70	9.24	9.29	9.30	8.99	8.96	8.92	8.98	8.60	8.50	8.30	8.45	8.63	8.32	8.3	8.2	10.24
100	8.59	8.61	9.11	9.22	9.21	8.94	8.93	8.88	8.95	8.60	8.40	8.27	8.40	8.54	8.29	8.2	8.1	8.70
110	8.48	8.49	9.13	9.15	9.20	8.90	8.87	8.80	8.89	8.50	8.30	8.18	8.29	8.48	8.27	8.1	8.0	8.02
120	8.44	8.33	9.07	8.91	8.98	8.77	8.74	8.73	8.85	8.40	8.20	8.08	8.20	8.41	8.22	8.1	8.0	8.05
130	8.19	8.27	9.07	8.83	8.98	8.71	8.69	8.69	8.66	8.30	8.30	7.96	8.02	8.20	8.19	8.1	7.9	8.09
140	8.39	8.35	9.05	8.89	8.89	8.62	8.65	8.60	8.33	8.20	8.20	7.40	7.60	7.87	7.97	7.8	7.4	7.79
150	8.81	8.84	8.98	8.49	8.94	8.48	8.43	8.47	8.25	8.10	8.10	7.40	7.50	7.71	7.88	7.7	7.2	7.13
Secchi depth data (m)																		
Secchi d	13.1	14..2	11.2	12.6	13.4	14.9	14.1	14.7	17.7	15.1	15.2	15.3	16.0	17.7	14.6	14.5	12.5	13.5

Lake Taupo Temperature, Dissolved Oxygen, and Secchi Depth Database. **1995-1996**

For the period starting 12 September 1995

Temperature															
Date	**12-9-95**	**25-9-95**	**30-10-95**	**24-11-95**	**06-12-95**	**12-1-96**	**31-1-96**	**13-2-96**	**29-2-96**	**20-3-96**	**28-3-96**	**18-4-96**	**19-5-96**	**14-6-96**	**9-7-96**
Depth (m)															
1	10.7		13.7		17.7	21.1	21.7	22.7	20.5	18.2	16.8	17.7	14.8	12.2	11.2
10	10.7		11.9		16.2	20.7	20.7	21.0	20.1	18.2	16.7	17.4	14.8	12.2	11.2
20	10.7		11.4		15.3	18.1	18.5	20.6	20.0	18.2	16.6	17.3	14.8	12.1	11.2
30	10.7		11.2		12.4	14.8	13.5	15.1	15.5	18.1	13.7	17.0	14.8	12.1	11.2
40	10.7		10.9		11.4	12.4	12.3	12.2	11.9	12.3	12.4	12.6	14.7	12.0	11.2
50	10.7		10.8		11.0	11.5	11.6	11.6	11.3	11.4	11.6	11.4	11.6	11.2	11.2
60	10.7		10.7		10.7	11.0	11.2	11.0	11.0	11.1	11.4	11.1	11.1	10.9	11.2
70	10.7		10.5		10.6	10.9	10.8	10.8	10.8	10.9	11.6	11.1	10.9	10.8	11.2
80	10.5		10.5		10.6	10.9	10.7	10.7	10.7	10.8	11.2	10.9	10.8	10.8	11.2
90	10.4		10.5		10.6	10.7	10.7	10.7	10.7	10.7	11.3	10.8	10.7	10.8	10.8
100	10.4		10.5		10.5	10.6	10.6	10.7	10.7	10.7	10.9	10.8	10.7	10.7	10.8
110	10.4		10.5		10.5	10.5	10.6	10.7	10.7	10.6	10.8	10.8	10.7	10.7	10.8
120	10.4		10.5		10.5	10.5	10.5	10.6	10.6	10.6	10.7	10.7	10.7	10.7	10.8
130	10.4		10.5		10.5	10.5	10.5	10.7	10.6	10.6	10.7	10.7	10.7	10.7	10.8
140	10.4		10.5		10.5	10.5	10.5	10.6	10.6	10.6	10.7	10.7	10.7	10.7	10.8
150	10.4		10.5		10.5	10.5	10.5	10.6	10.6	10.6	10.6	10.7	10.7	10.7	10.8
160	10.4		*		10.5	10.5	10.5	*	*	*	*	*	*	*	*
Dissolved oxygen (g m^{-3})															
Depth (m)															
1	9.6		10.3		9.5	8.5	8.5	8.1	8.2	8.4	8.7	8.6	9.0	9.2	9.3
10	9.6		10.5		9.9	8.7	8.5	8.1	8.2	8.3	8.7	8.6	9.0	9.2	9.1
20	9.6		10.6		10.0	9.1	9.1	8.2	8.1	8.3	8.8	8.6	8.9	9.2	9.1
30	9.6		10.7		10.5	9.7	10.1	9.2	9.0	8.1	9.0	8.4	8.9	9.1	9.0
40	9.7		10.7		10.5	10.1	10.2	9.5	9.1	8.7	8.8	8.7	8.9	9.0	8.9
50	9.6		10.3		10.3	9.9	9.9	9.0	9.0	8.6	8.6	8.4	8.7	8.4	8.8
60	9.5		10.3		10.0	9.6	8.9	8.7	8.8	8.5	8.5	8.4	8.5	8.1	8.7
70	9.4		10.2		10.0	9.6	8.9	8.6	8.6	8.5	8.5	8.4	8.3	7.9	8.7
80	9.4		10.2		9.9	9.6	8.8	8.5	8.5	8.4	8.3	8.4	8.3	7.8	8.6
90	9.0		10.1		9.8	9.5	8.8	8.4	8.4	8.3	8.2	8.3	8.2	7.7	8.1
100	9.0		10.0		9.7	9.4	8.8	8.3	8.3	8.3	8.2	8.3	8.1	7.7	7.5
110	9.0		9.9		9.6	9.4	8.8	8.1	8.3	8.2	8.1	7.9	7.8	7.6	7.3
120	8.8		9.9		9.4	9.3	8.3	8.1	8.3	8.1	8.3	7.9	7.8	7.5	7.1
130	8.8		9.8		9.3	9.2	8.3	7.9	8.2	7.8	8.3	7.8	7.8	7.5	7.1
140	8.7		9.6		9.1	8.9	7.9	7.6	8.2	7.5	8.0	7.6	7.7	7.4	7.0
150	8.7		9.2		8.9	8.7	7.9	7.6	8.0	7.4	7.8	7.4	7.5	7.4	7.0
Secchi depth															
Depth (m)	11.9	11.9	13.0	13.6	15.1	16.3	15.7	17.8	18.4	14.1	14.6	14.4	14.7	14.4	12.9

Lake Taupo Temperature, Dissolved Oxygen, and Secchi Depth Database. 1994-1995
Started 27 October 1994

Temperature

Date	**27-10-94**	**21-11-94**	**01-12-94**	**13-12 -94**	**27-12 -94**	**13-1 -95**	**25-1 -95**	**09-2 -95**	**26-2 -95**	**08-3 -95**	**24-3-95**	**12-4-95**	**19-4-95**	**04-5-95**	**21-5-95**	**08-6-95**	**14-7-95**	**30-7-95**
	Depth (m)																	
1	11.7	12.8	15.7	17.5	17.8	18.6	19.9	20.6	20.9	20.9	18.5	19.4	18.4	17.0	15.0	13.4	11.3	10.8
10	11.5	12.6	14.2	16.4	17.3	18.4	19.9	20.0	19.9	19.8	18.4	18.6	18.2	16.9	15.0	13.5	11.3	10.8
20	11.5	12.6	13.2	15.5	16.9	18.0	17.8	19.6	19.9	19.7	18.4	18.4	18.2	16.8	15.0	13.4	11.3	10.8
30	11.3	12.6	13.0	13.2	13.3	15.9	15.6	15.0	15.0	15.1	18.4	15.7	16.5	14.6	15.0	13.4	11.3	10.8
40	10.9	12.6	12.1	12.5	12.2	13.1	13.3	12.9	13.0	12.8	12.7	13.0	12.5	12.2	12.7	13.3	11.3	10.8
50	10.9	12.4	11.4	11.7	11.6	12.0	11.8	11.9	11.9	11.8	12.0	11.8	11.6	11.3	11.7	12.8	11.2	10.8
60	10.8	11.8	10.7	11.1	*	11.4	11.5	11.4	11.1	11.2	11.3	11.3	11.1	11.2	11.3	11.7	11.2	10.8
70	10.7	10.9	10.6	10.8	*	*	11.2	11.0	10.9	10.9	11.0	10.9	10.9	10.9	11.0	11.2	11.2	10.8
80	10.6	10.7	10.5	10.7	*	*	11.0	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	11.0	10.9	10.8
90	10.5	10.6	10.5	10.6	*	*	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.8	10.8	10.8	10.8
100	10.5	10.5	10.5	10.5	*	*	10.7	10.6	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.8	10.7	10.8
110	10.5	10.5	10.4	10.4	*	*	10.6	10.6	10.6	10.6	10.7	10.7	10.7	10.7	10.7	10.8	10.7	10.8
120	10.4	10.4	10.4	10.4	*	*	10.6	10.5	10.6	10.6	10.6	10.7	10.7	10.7	10.7	10.8	10.7	10.8
130	10.4	10.4	10.4	10.3	*	*	10.5	10.5	10.6	10.6	10.6	10.6	10.7	10.7	10.7	10.8	10.7	10.8
140	10.4	10.3	10.4	10.3	*	*	10.5	10.5	10.6	10.6	10.6	10.6	10.7	10.6	10.7	10.8	10.7	10.8
150	10.3	10.3	10.3	10.3	*	*	10.5	10.5	10.6	10.6	10.6	10.6	10.6	10.6	10.7	10.8	10.7	10.8
160	10.3	10.3	10.3	10.3	*	*	10.5	10.5	10.6	10.6	10.6	10.6	10.6	10.7	*	10.7	*	*
	Dissolved oxygen (g m^{-3})																	
	Depth (m)																	
1	10.5	9.6	9.8	9.2	9.0	8.0	8.9	8.4	8.5	8.5	8.7	*	9.2	9.3	9.0	9.0	9.6	9.6
10	10.6	9.4	10.3	9.4	10.6	10.4	10.2	8.5	8.4	8.0	*	*	9.3	9.1	8.8	9.1	9.6	9.5
20	10.8	9.4	10.3	9.4	11.0	10.5	11.5	8.5	8.4	8.0	*	*	9.2	9.0	8.8	9.1	9.4	9.4
30	10.7	9.4	10.2	9.7	12.5	11.2	11.4	9.8	9.6	9.7	*	*	9.3	9.2	8.7	9.0	9.4	9.3
40	10.5	9.3	10.1	9.6	12.5	11.9	12.0	9.7	9.4	9.7	*	*	9.7	9.3	8.6	9.0	9.3	9.3
50	10.4	9.3	9.9	9.5	12.6	11.9	12.0	9.4	9.4	9.5	*	*	9.5	9.2	8.5	8.8	9.2	9.3
60	10.4	9.4	9.9	9.5	*	10.3	11.9	9.4	9.3	9.4	*	*	9.5	9.2	8.5	8.3	9.2	9.2
70	10.4	*	9.8	9.5	*	*	11.7	9.3	9.3	9.3	*	*	9.5	9.2	8.4	8.3	9.2	9.2
80	10.4	*	9.8	9.5	*	*	11.6	9.3	8.9	9.1	*	*	9.0	9.2	8.3	8.3	8.5	9.1
90	10.4	*	9.7	9.5	*	*	11.4	9.2	8.8	9.0	*	*	8.7	9.0	8.1	7.9	8.3	9.0
100	10.2	*	9.6	9.4	*	*	11.3	9.0	8.6	8.8	*	*	8.6	8.6	8.0	7.6	7.8	8.9
110	10.3	*	9.7	9.3	*	*	11.1	9.0	8.3	8.7	*	*	8.3	8.2	8.0	7.5	7.4	8.8
120	10.2	*	9.4	9.2	*	*	10.9	8.7	8.2	8.4	*	*	8.2	7.9	7.8	7.1	7.2	8.6
130	9.8	*	9.2	9.0	*	*	10.6	8.5	7.9	8.3	*	*	8.0	7.7	7.6	7.0	7.2	8.4
140	9.8	*	8.9	9.0	*	*	10.5	8.3	7.6	8.1	*	*	8.0	7.5	7.4	7.0	7.1	8.4
150	9.9	*	8.6	8.7	*	*	10.4	8.3	7.3	7.9	*	*	7.5	7.3	7.0	7.0	7.1	8.3
160	*	*	8.5	8.5	*	*	10.0	8.2	7.5	7.7	*	*	6.6	7.2	*	6.8	*	*
Secchi depth																		
Depth (m)	11.7	11.4	12.5	12.9	15.6	17.8	15.7	17.0	16.5	17.1	14.7	15.7	16.1	15.1	14.3	15.0	12.5	15.7

* = missing or invalid data

Appendix 4. Nutrient data

Includes accumulated 10-m tube data since 1994. Blank cells represent missing data.

For completeness, 10-m tube data collected from the Kuratau Basin (site B) and Western Bays (site C) from January 2002 to December 2004 are included as separate sheets following the mid-lake data from site A for those years.

In the spring/autumn profile data, two different analytical methods are used to measure particulate nitrogen:

1. a wet digestion method involving high temperature refluxing in digestion mixture [persulphate / sulphuric acid / Selenium catalyst] for 3 hours followed by colorimetric determination of the nitrogen as the ammoniacal form; and

2. a CHN combustion method which converts all nitrogen compounds to N_2 gas in a furnace at ~1000°C to be measured in a thermal conductivity detector.

Particulate nitrogen analysed by the wet digestion method may not include some refractory nitrogen components which may be detected by the CHN combustion furnace method. Consequently the PN value from the CHN combustion furnace method should always be greater than or equal to the PN value obtained by the wet digestion method. Occasionally they are reported as less than the wet digestion method value in which case the wet digestion value should be regarded as correct. The cause of this difference is unknown but may be associated with the presence of low molecular weight organic nitrogen compounds lost during the drying step before combustion. The PN values for the time series data are all from wet digestion method analyses and hence are directly comparable with the profile data.

Low level NH_4-N results are likely to be subject to interference from low molecular weight

From February 2002, DRP, NO_3-N, and NH_4-N were measured on a Lachat Flow Injection Analysis (FIA) system but using essentially the same chemistry as previously used on the Technical Auto-Analyzer system. The reported detection limits for these nutrients remains the same at 0.5 mg m^{-3} for DRP and NO_3-N, and 1 mg m^{-3} for NH_4-N, however, the greater precision of the FIA system provides confidence in reporting results to a lower level as an indication of likely absolute values near zero. Such values are provided as an indication only and the true value should be expressed as less than the detection limit. TN and TP values are the sum of all N and P components, excluding Urea-N which is part of the DON component. All analytical values ‘on-the-day’ are used wherever possible or <DL = DL/2 for summation in TN and TP. See Appendix 1 for discussion on detection limits.

The DON value for 5/08/2000 was corrected from 12 to 43.5 in March 2006. This was a transcription error from the original analytical result sheet.

From October 2009, chlorophyll *a* concentrations collected by van Dorne sampler from a depth of 50 m have been included in the data set as an indication of the biomass in the DCM. However, because the DCM moves up and down during the year, the fixed depth samples from 50 m may not always be in the centre of DCM.

Lake Taupo cumulative database of 10m tube sample data from October1994 to September 2002.
Samples collected from central lake site.

Date Collected	Temp. °C	Secchi m	DRP mg m^{-3}	DOP mg m^{-3}	PP mg m^{-3}	TP mg m^{-3}	NH$_4$-N mg m^{-3}	NO$_3$-N mg m^{-3}	DON mg m^{-3}	PN mg m^{-3}	TN mg m^{-3}	Chlorophyll *a* mg m^{-3}	PC mg m^{-3}
27/10/1994	11.7	11.7	1.2	0.7	2.5	4.4	1.1	0.2	56	16.6	73.4	1.16	
24/11/1994	12.8	11.4	0.5	2.7	1.7	4.8	1.7	1.0	51	12.6	66.5	0.41	
1/12/1994	15.7	12.5	0.6	2.4	2.4	5.4	2.2	1.2	56	18.5	78.0	0.41	
13/12/1994	17.5	12.9	0.8	4.2	1.4	6.4	<0.2	0.9	51	9.3	60.8	0.24	
28/12/1994	17.8	15.6	0.5	1.7	1.9	4.1	1.1	1.3	51	16.7	69.6	0.41	
13/01/1995	18.6	17.8	0.1	2.2	1.6	3.8	<0.2	0.8	53	11.6	64.9	0.22	
24/01/1995	19.9	15.7	0.2	2.1	1.2	3.6	<0.2	0.8	57	13.3	71.0	0.25	
10/02/1995	20.6	17.0	0.3	2.2	1.2	3.6	<0.2	1.5	62	10.2	73.3	0.32	
27/02/1995	20.9	16.5	0.4	<0.5	2.5	2.8	1.9	1.5	71	16.5	90.8	0.35	
9/03/1995	20.9	17.1	0.4	1.7	1.7	3.7	0.2	0.7	55	11.6	67.5	0.28	
24/03/1995	18.5	14.7			1.9	1.9				13.0		0.37	
12/04/1995	19.4	15.7	0.2	1.4	1.7	3.2	0.3	0.7	51	17.3	69.6	0.57	
19/04/1995	18.4	16.1	2.8	1.5	1.4	5.7	4.0	0.9	71	14.1	90.0	0.92	
4/05/1995	17.0	15.1	1.4	1.1	3.0	5.5	1.4	2.3	76	24.7	104.4	0.96	
21/05/1995	15.0	14.3	1.2	0.9	2.2	4.3	0.4	2.1	50	29.2	81.8	0.98	
8/06/1995	13.4	15.0	0.7	0.4	1.8	2.9	0.2	0.6	54	15.4	70.2	1.05	
14/07/1995	11.3	12.5	0.3	2.5	1.7	4.5	0.3	2.1	53	15.0	70.8	1.32	
30/07/1995	10.8	15.7	0.7	0.7	1.9	3.3	<0.2	4.6	35	17.3	57.3		
13/08/1995			0.5	0.4	1.9	2.8	<0.2	4.6	39	14.2	57.4	0.99	
12/09/1995	10.7	11.9	0.5	2.2	2.2	4.9	1.0	40.9	177	19.1	237.6	1.37	
25/09/1995	11.5	11.9	<0.2	0.7	2.1	2.8	<0.2	0.1	84	17.6	101.6	0.64	
30/10/1995	13.0	13.0	<0.2	2.4	1.9	4.3	<0.2	<0.1	56	14.7	70.4	0.93	
24/11/1995	13.7	13.6	0.8	1.8	1.6	4.3	1.9	<0.1	59	12.6	73.3	0.29	
6/12/1995	17.7	15.1	2.2	0.4	1.2	3.9	1.7	<0.1	58	11.3	70.8	0.20	
12/01/1996	21.1	16.3	2.6	0.6	1.2	4.4	3.6	<0.1	64	10.1	77.8	0.24	
31/01/1996	21.7	15.7	1.3	1.6	1.3	4.2	4.2	<0.1	59	11.9	75.5	0.29	
13/02/1996	22.7	17.8	2.1	3.3	1.2	6.6	7.4	<0.1	81	10.4	98.9	0.15	
29/02/1996	20.5	18.4	1.9	2.2	1.2	5.3	4.2	<0.1	61	10.8	76.3	0.31	
20/03/1996	18.2	14.1	0.8	2.2	1.4	4.5	5.4	<0.1	76	14.2	95.3	0.56	
28/03/1996	16.8	14.6	1.3	1.8	1.4	4.5	4.7	<0.1	91	12.6	108.3	0.81	
18/04/1996	17.7	14.4	0.8	2.2			4.3	<0.1	61			0.41	
19/05/1996	14.8	14.7	0.8	3.0			6.8	<0.1	59			0.70	
14/06/1996	12.2	14.4	1.6	3.2			5.7	<0.1	71				
19/06/1996	12.2	14.4	1.0	1.2			4.0	<0.1	49			0.70	
9/07/1996	11.2	12.9	3.0		1.9		4.0	<0.1	47	11.3		0.80	
3/09/1996	10.5	13.1	0.7	2.0	3.0	5.7	2.5	0.2	52	17.0	71.7	1.03	
18/09/1996	10.7	14.2	1.3	1.2	2.4	4.9	2.1	0.2	42	14.0	58.3	0.75	
30/09/1996	12.5	11.2	0.9	1.6	1.8	4.3	3.3	0.2	58	11.0	72.5	0.28	
17/10/1996	13.3	12.6	0.6	2.1	2.6	5.3	2.9	2.5	64	19.0	88.4	0.59	
24/10/1996	12.6	13.4	0.7	2.3	2.2	5.2	2.4	0.4	64	15.0	81.8	0.47	
6/11/1996	13.5	14.9	0.8	2.6	2.2	5.6	3.2	1.0	64	17.0	85.2	0.45	
28/11/1996	13.6	14.1	0.4	1.9	2.4	4.7	2.6	0.4	49	20.0	72.0	0.90	
11/12/1996	14.8	14.7	1.3	1.7	1.3	4.3	6.2	0.8	98	17.0	122.0	0.33	
23/12/1996	16.3	17.7	1.3	1.1			5.2	0.3	46			0.23	
8/01/1997	17.9	15.1	0.7	1.7	1.9	4.3	2.0	0.6	50	15.0	67.6	0.33	
29/01/1997	17.8	15.2	0.7	1.8	1.6	4.1	1.9	0.4	54	17.0	73.3	0.21	
26/03/1997	17.7	15.3	0.6	1.7	2.1	4.4	2.4	1.8	57	19.0	80.2	0.46	
2/04/1997	17.3	16.0	0.9	1.3	1.6	3.8	1.7	0.3	51	16.0	69.0	0.69	
15/04/1997	16.7	17.7	0.7	2.5	1.5	4.7	3.2	0.8	57	12.0	73.0	0.40	
1/05/1997	15.6	16.0	0.6				1.7	0.1				0.58	
21/05/1997	14.2	14.6	1.0	8.8	1.7	11.5	4.5	0.3	92	15.0	111.8	1.05	
29/05/1997	14.3	14.5	1.1	1.1			3.3	1.0	51			0.89	
7/07/1997	11.6	12.5	0.6	0.9			4.7	2.1	53			0.90	
29/07/1997	10.9	13.5	0.5	1.6			1.5	2.1	39			1.13	
2/09/1997	10.6	14.1	1.4	1.1	1.7	4.2	7.0	1.8	47.0	13.1	68.9	1.08	
16/09/1997	10.6	12.0	0.5	1.1			1.3	0.7	35			2.16	
11/10/1997	11.6	13.7	2.4	2.8	1.7	6.9	4.8	0.9	63.3	16.2	85.2	1.14	
29/10/1997	12.1	12.5	0.7	1.9	1.9	4.5	1.3	7.3	32	19.0	59.6	1.49	
2/12/1997	14.5	14.5	0.2	2.3			3.2	1.7	55			0.83	
21/01/1998	17.7	14.7	1.4	1.1	1.2	3.7	2.8	1.5	46.0	10.0	60.3	0.48	
4/03/1998	20.0	11.5	1.5	1.7	2.6	5.8	6.4	4.0	76.0	19.8	106.2	0.58	
24/03/1998	19.3	13.5	1.0	1.4	1.8	3.2	2.1	1.1	48.0	13.2	64.4	1.25	
7/04/1998	17.7	13.5	0.9	1.4	1.8	4.1	1.9	2.5	52.0	13.7	70.1	1.04	
29/05/1998	14.2	15.5	1.0	1.9	1.9	4.8	5.0	3.5	51.0	16.4	75.9	1.36	
28/07/1998	11.4	10.0	1.2	1.0	3.1	5.3	2.1	1.4	45.0	26.0	74.5	1.19	
29/09/1998	12.9	10.5	1.5	1.0			2.2	0.5	41.0	20.3	64.0	0.70	
8/10/1998	12.9	10.4	1.5	<1			2.4	2.4	46.0	37.6	88.4	1.00	
1/11/1998	13.6	13.5	0.6	1.3	2.6	4.5	2.4	<0.5	36.0	15.2	53.6	0.90	
26/11/1998	18.4	15.0	1.3	2.6	2.1	6.0	9.6	1.6	42.0	16.4	69.6	0.61	
22/12/1998	18.5	14.5	1.1	0.4	2.5	4.0	2.7	1.1	36.0	17.7	61.5	0.25	
12/02/1999	20.1	12.5	0.8	2.8	1.7	5.3	4.0	1.6	39.0	11.4	56.0	0.60	165
3/03/1999	20.9	14.3	0.6	2.9	2.0	5.5	1.6	1.1	40.0	16.8	59.5	0.82	203
14/04/1999	18.3	13.0	0.6	<1	1.8	2.4	3.0	<0.5	41.0	19.0	61.6	1.20	250
30/04/1999	16.4	12.2	1.1	1.5	1.7	4.3	2.1	<0.5	38.0	19.6	60.2	0.94	198
19/05/1999	14.4	15.0	0.8	<1	1.5	5.1	1	<1	46.0	16.2	63.7	1.2	166
8/06/1999	14.1	14.5	1.0	<1	3.9	4.9	1	<1	48.0	25.4	74.9	1.1	
18/06/1999	13.0	15.0	0.8	<1	2.0	5.0	2	5	42.0	16.5	65.5	1.7	
20/07/1999	12.0	16.0	0.5	<1	3.1	3.6	1	<1	45.0	28.3	74.3	1.0	
9/08/1999	11.5	14.5	1.3	1.7	2.3	5.3	4	8	45.0	18.4	75.4	1.7	
6/09/1999	11.1	10.0	<0.5	2.5	2.1	5.1	2	1	60	16.2	79.2	0.5	
29/09/1999	11.5	10.0	0.7	1	4	5.7	3	1	54	32.6	90.6	1.8	
18/10/1999	12.7	14.9	0.5	3	2.5	6	<1	<1	41	19.4	60.4	0.4	
20/12/1999	16.4	18.0	0.7	2.3	5	8	4	2	39	38	83	1.6	
18/01/2000	17.6	19.1	0.9	2	2	4	5	2	52	18.5	70.5	0.6	
12/04/2000	17.3	15.0	0.8	3	2	5	1	1	61	22	83	0.8	
4/05/2000	15.8	14.0	1	3	2	5	1	2	48	17	68	1.3	
25/05/2000	14.3	14.0	1	4	1	6	2	<1	55	17	65	0.6	
20/06/2000	12.3	14.0	<1	4	0	4.0	2	2	52	16	72.0	1.7	194
11/07/2000	11.9	11.0	<1	4	3	7.0	3	2	46	22.5	73.5	1.65	198
5/08/2000	11.3	12.0	2	2	3	7.0	1	3.5	43.5	19.5	66.0	2.5	154
22/08/2000	11.2	15.0	2	2	2	6.0	2	4	49	16.5	71.5	1.65	159
12/09/2000	11.5	12.0	2	5	3.5	10.5	2	<1	63	23.5	88.5	1	148
29/09/2000	11.5	13.0	2	4	2	8.0	1	1	54	21	77.0	1.15	237
26/10/2000	13.1	11.0	0.8	4.2	3	8.0	1.0	0.4	41.6	25	68.0	1.3	237
14/11/2000	13.1	12.0	<1	4	2	6.0	1	<1	41	14.5	56.5	0.9	171
7/12/2000	15.1	17.0	2	2	1.55	5.6	7	4	63	14.75	88.8	0.6	166
4/01/2001	18.0	14.5	<1	2	1.5	3.5	1	<1	40	11	52.0	0.5	127
16/01/2001	19.0	18.0	0.5	2.5	1.5	4.5	1	0.5	53.5	13	68.0	0.5	119
21/02/2001	20.5	17.0	0.9	1.1	1.5	3.5	<1	0.5	46.5	12.5	59.5	0.6	191
2/03/2001	20.7	14.5	<1	2	2	4.0	2	<1	53	18	73.0	0.9	193
20/03/2001	19.0	17.0	<1	3	1.4	4.4	<1	<1	46	14.25	60.3	0.9	154
9/04/2001	17.0	13.5	0.8	1.2	2.15	4.2	<1	3	62	19.45	84.5	1.05	199
8/05/2001	15.8	17.0	0.8	3.2	1.7	5.7	2	<1	61	23	86.0	1.1	248
30/05/2001	13.6	14.5	1.5	1.5	2	5.0	1	<1	57	12	70.0	1.4	203
2/07/2001	12.1	12.0	<1	3	2.3	5.3	1	1	50	18.3	70.3	1.5	156
25/07/2001	11.3	14.5	2	1	2.65	5.7	<1	6	45	19.75	70.8	2.2	188
13/08/2001	11.2	13.5	1	1	2.85	4.9	1	<1	41	21.9	63.9	2.1	225
3/09/2001	10.2	17.5	1	1	2.6	4.6	<1	<1	37	19	56.0	1.7	203
25/09/2001	11.6	11.0	1.1	0.9	2.8	4.8	1	<1	56	24.5	81.5	0.9	283
25/10/2001	13.0	14.5	0.8	1.2	2.4	4.4	<1	<1	46	19.4	65.4	1.1	246
12/11/2001	14.3	15.5	0.7	<1 (0.3)	5.15	6.2	<1 (0.5)	<0.5 (0)	34	35.0	69.5	1.7	403
10/12/2001	15.5	16.0	1.0	2	2.55	5.6	<1 (0.9)	<0.5 (0.1)	48	17.6	65.6	0.5	228
20/12/2001	17.0	13.0	0.6	2.7	2.05	5.4	1.3	<0.5 (0.1)	48	14.85	64.2	0.5	204
8/01/2002	18.3	13.0	<0.5 (0.3)	2	2.2	4.2	<1 (0)	<0.5	50	17.15	67.2	0.8	247
22/01/2002	19.3	15.0	<0.5 (0)	7	2.25	9.3	<1 (0)	<0.5	40	20.35	60.4	0.9	188
6/03/2002	18.7	14.5	1.2	0.8	2.05	4.1	<1 (0)	<0.5 (0.4)	74	17.7	91.7	1.7	227
4/04/2002	17.4	19.0	0.6	3	1.45	5.1	1.1	<0.5 (0.1)	46	10.7	57.8	0.8	138
17/04/2002	17.4	22.0	<0.5 (0)	3	1.65	4.7	<1 (0.5)	0.5	47	13.1	60.6	0.9	157
22/04/2002	17.05	22.0	-	-	-	-	-	-	-	-	-	-	-
5/05/2002	15.5	16.4	0.7	1			3.1	0.7	48			1	
16/05/2002			0.9	1.1	1.5	3.5	<1	<0.5	49	15.1	64.1	0.7	153
19/06/2002	12.6	17.0	1.2	1.8	1.9	4.9	<1 (0.5)	1.4	43.6	15.8	60.8	1.1	165
1/07/2002	12.1	16.0	1.2	1.8	1.8	4.8	<1 (0.9)	1.7	37.3	14.3	53.3	1.5	214
17/07/2002	11.4	15.5	2.3	2.7	1.7	6.7	2.3	7.8	41.9	14.6	66.6	1.5	154
31/07/2002	11.2	12.0	2.3	2.7	2.5	7.5	<1 (0.9)	5.9	177.2	16.7	199.8	2.2	193
29/08/2002	11.1	9.5	1.6	1.4	3.1	6.1	<1 (0)	<0.5 (0)	90	23	113.0	2.6	196
5/09/2002		6.7	-	-	-	-	-	-	-	-	-	-	-

▨ Special repeat analyses.
Detection limit <0.1 mg m^{-3}

Detection limits prior to 14 April 1999 were

	DL
DRP	0.2 mg m^{-3}
NH4-N	0.5 mg m^{-3}
NO3-N	0.5 mg m^{-3}

Values reported less than the DL
were special estimates of low samples.

Detection limits from 14 April 1999 on are

	DL
DRP	0.5 mg m^{-3}
NH4-N	1 mg m^{-3}
NO3-N	1 mg m^{-3}

Values reported less than the DL
were special estimates of low samples.

New LACHAT Flow Injection Analysis
Detection limits from 1 Dec 2001 on are

	DL
DRP	0.5 mg m^{-3}
NH4-N	1 mg m^{-3}
NO3-N	0.5 mg m^{-3}

High precision and confidence in the FIA
results allow estimates below the nominal DL.
Data in brackets are given as an indication

of the likely absolute concentration

Lake Taupo cumulative database of 10 m tube sample data from June 2000 on
Samples collected from Mid Lake (Site A)

Date Collected	Temp. ºC	Secchi (m)	DRP (mg m^{-3})	DOP (mg m^{-3})	PP (mg m^{-3})	TP (mg m^{-3})	NH$_4$-N (mg m^{-3})	NO$_3$-N (mg m^{-3})	DON (mg m^{-3})	PN (mg m^{-3})	TN (mg m^{-3})	Chlorophyll *a* (mg m^{-3})	PC (mg m^{-3})
20/06/2000	12.3	14.0	<1	4	0	4.0	2	2	52	16	72.0	1.7	193.5
11/07/2000	11.9	11.0	<1	4	3	7.0	3	2	46	22.5	73.5	1.65	198
5/08/2000	11.3	12.0	2	2	3	7.0	1	3.5	43.5	19.5	36.0	2.5	153.5
22/08/2000	11.2	15.0	2	2	2	6.0	2	4	49	16.5	71.5	1.65	158.5
12/09/2000	11.5	12.0	2	5	3.5	10.5	2	<1	63	23.5	88.5	1	148
29/09/2000	11.5	13.0	2	4	2	8.0	1	1	54	21	77.0	1.15	236.5
26/10/2000	13.1	11.0	0.8	4.2	3	8.0	1.0	0.4	41.6	25	68.0	1.3	237
14/11/2000	13.1	12.0	<1	4	2	6.0	1	<1	41	14.5	56.5	0.9	171
7/12/2000	15.1	17.0	2	2	1.55	5.6	7	4	63	14.75	88.8	0.6	165.5
4/01/2001	18.0	14.5	<1	2	1.5	3.5	1	<1	40	11	52.0	0.5	127
16/01/2001	19.0	18.0	0.5	2.5	1.5	4.5	1	0.5	53.5	13	68.0	0.5	118.5
21/02/2001	20.5	17.0	0.9	1.1	1.5	3.5	<1	0.5	46.5	12.5	59.5	0.6	190.5
2/03/2001	20.7	14.5	<1	2	2	4.0	2	<1	53	18	73.0	0.9	193
20/03/2001	19.0	17.0	<1	3	1.4	4.4	<1	<1	46	14.25	60.3	0.9	154
9/04/2001	17.0	13.5	0.8	1.2	2.15	4.2	<1	3	62	19.45	84.5	1.05	199
8/05/2001	15.8	17.0	0.8	3.2	1.7	5.7	2	<1	61	23	86.0	1.1	248
30/05/2001	13.6	14.5	1.5	1.5	2	5.0	1	<1	57	12	70.0	1.4	203
2/07/2001	12.1	12.0	<1	3	2.3	5.3	1	1	50	18.3	70.3	1.5	155.5
25/07/2001	11.3	14.5	2	1	2.65	5.7	<1	6	45	19.75	70.8	2.2	188
13/08/2001	11.2	13.5	1	1	2.85	4.9	1	<1	41	21.9	63.9	2.1	225
3/09/2001	10.2	17.5	1	1	2.6	4.6	<1	<1	37	19	56.0	1.7	203
25/09/2001	11.6	11.0	1.1	0.9	2.8	4.8	1	<1	56	24.5	81.5	0.9	283
25/10/2001	13.0	14.5	0.8	1.2	2.4	4.4	<1	<1	46	19.4	65.4	1.1	246
12/11/2001	14.3	15.5	1.0	2	2.55	5.6	0.9	0.1	48	17.6	66.6	0.5	227.5
10/12/2001	15.5	16.0	1.0	2	2.55	5.6	0.9	0.1	48	17.6	66.6	0.5	227.5
20/12/2001	17.0	13.0	0.6	2.7	2.05	5.4	1.3	0.1	48	14.85	64.3	0.5	203.5
8/01/2002	18.3	13.0	0.3	2	2.2	4.5	0	<1	50	17.15	67.2	0.8	246.5
22/01/2002	19.3	15.0	0	7	2.25	9.3	0	<1	40	20.35	60.4	0.9	188
6/03/2002	18.7	14.5	1.2	0.8	2.05	4.1	0.0	0.4	74	17.7	92.1	1.7	226.5
4/04/2002	17.4	19.0	0.6	3	1.45	5.1	1.1	0.1	46	10.7	57.9	0.8	138
17/04/2002	17.4	22.0	0.0	3	1.65	4.7	0.5	0.5	47	13.1	61.1	0.9	157
5/05/2002	15.5	16.4	0.7	1			3.1	0.7	48			1	
19/06/2002	12.6	17.0	1.2	1.8	1.9	4.9	0.5	1.4	43.6	15.8	61.3	1.1	165.0
1/07/2002	12.1	16.0	1.2	1.8	1.8	4.8	0.9	1.7	37.3	14.3	54.2	1.5	214
17/07/2002	11.4	15.5	2.3	2.7	1.7	6.7	2.3	7.8	41.9	14.6	66.6	1.5	153.5
31/07/2002	11.2	12.0	2.3	2.7	2.5	7.5	0.9	5.9	177.2	16.7	200.7	2.2	193

Date Collected	Temp. ºC	Secchi (m)	DRP (mg m^{-3})	DOP (mg m^{-3})	PP (mg m^{-3})	TP (mg m^{-3})	NH_4-N (mg m^{-3})	NO_3-N (mg m^{-3})	DON (mg m^{-3})	PN (mg m^{-3})	TN (mg m^{-3})	Chlorophyll *a* (mg m^{-3})	PC (mg m^{-3})
29/08/2002	11.1	9.5	1.6	1.4	3.1	6.1	0.0	0	90	23	113.0	2.6	196
18/09/2002	11.4	12	1.3	1.7	2	5.0	0	0.3	47	13	60.3	0.9	196.5
9/10/2002	11.6	15.5	1.3	2.7	2.1	6.1	2.9	0	29	12	43.9	0.6	159.5
13/11/2002	12.6	18	0.9	1.1	2.4	4.4	1.7	1.3	41	14.0	58.0	0.7	158.5
28/11/2002	14.1	12.7	0.7	2.3	2.7	5.7	0.1	0.0	43.0	22.0	65.1	0.7	201.5
18/12/2002	15.0	13.5	0.6	1.8	2.5	4.9	0.2	0.1	47.0	14.0	61.3	0.4	123.0
30/01/2003	17.8	18	0.4	3.6	1.9	5.9	0.4	0.1	56.5	12.0	69.0	0.7	166.0
13/02/2003	19.3	19	0.5	2.5	1.6	4.6	0.0	0.4	43.6	8.0	52.0	0.5	146.0
17/03/2003	18.5	15	0.8	2.2	1.7	4.7	<1	0.4	45.6	13.0	59.0	1.0	212
3/04/2003	19.3	13.5	1.1	2.9	1.8	5.8	<1	0.5	78.5	17.7	96.7	1.1	234.5
28/04/2003	16.7	14	0.3	3.7	1.9	5.9	<1	0.3	73.7	15.6	89.6	1.5	208.5
15/05/2003	15.6	16.5	0.1	3.9	2.2	6.2	0.3	0.3	50.4	19.5	70.5	1.4	228.5
12/06/2003	13.5	11	1.3	2.7	2.2	6.2	0.3	0.4	40.3	13.7	54.7	1.3	111.0
14/07/2003	11.8	14.5	2.2	1.8	2.6	6.6	1.1	1.1	34.8	18.0	55.0	1.8	102.0
31/07/2003	11.4	14	2.4	1.6	2.4	6.4	1.3	3.7	46.0	16.7	67.7	2.0	89.5
14/08/2003	11.2	13.5	1.8	2.2	3.1	7.1	0.7	0.2	46.1	21.1	68.1	2.9	91.5
26/08/2003	11.2	13	3.0	1.0	4.0	8.0	1.0	0.2	42.8	21.7	65.7	2.9	135.5
8/09/2003	11.1	12.5	2.6	0.4	3.3	6.3	0.4	0.2	45.2	17.4	63.2	1.5	199.5
7/10/2003	11.4	13.0	2.6	1.6	2.8	7.0	0.3	0.2	54.5	17.8	72.8	1.2	157.5
21/10/2003	13.0	17.0	2.0	1.0	2.3	5.3	0.1	1.3	39.6	14.0	55.0	0.6	146.0
19/11/2003	13.9	16.0	1.7	1.3	2.8	5.8	0.3	0.1	45.6	20.0	66.0	0.8	148.0
4/12/2003	16.0	18.5	1.6	2.4	1.8	5.8	0.2	0.1	53.7	13.4	67.4	0.3	106.5
18/12/2003	17.7	17.5	1.1	3.9	3.1	8.1	0.0	0.0	49.0	20.6	69.6	0.4	151.5
13/01/2004	20.3	19.0	0.5	3.5	1.6	5.6	0.0	0.3	52.0	12.5	64.8	0.4	127.0
26/02/2004	17.2	17.0	1.4	1.7	1.6	4.7	0.0	0.1	40.9	15.5	56.5	0.7	139.0
8/03/2004	17.5	15.0	0.6	2.4	2.0	5.0	0.4	0.1	42.5	12.4	55.4	0.6	177.5
31/03/2004	16.4	16.0	0.8	5.2	1.9	7.9	0.2	0.2	78.6	11.5	90.5	1.2	159.5
14/04/2004	15.3	15.0	1.0	3.0	2.4	6.4	0.1	0.3	46.6	16.0	63.0	1.3	187.5
10/05/2004	14.7	18.0	0.6	4.4	1.8	6.8	0.1	0.2	64.7	16.8	81.8	1.2	215.0
10/06/2004	13.6	13.5	0.9	2.1	2.1	5.1	0.0	0.6	63.4	17.8	81.8	1.0	371.5
13/07/2004	11.6	12.0	1.8	3.2	2.4	7.4	0.3	4.5	37.2	19.4	61.4	1.6	193.3
26/07/2004	11.3	11.0	1.6	2.4	3.0	7.0	0.5	2.4	38.1	23.4	64.4	2.7	196.0
24/08/2004	10.9	12.5	0.8	3.2	2.7	6.7	0.0	0.5	58.5	18.6	77.6	2.3	181.5
7/09/2004	10.7	12.0	0.6	2.4	2.7	5.7	0.0	0.1	40.9	15.5	56.5	1.4	162.5
21/10/2004	11.6	15.0	1.0	3.0	2.0	6.0	0.0	0.0	33.0	13.0	46.0	0.7	185.0
2/11/2004	12.9	16.0	1.0	3.0	1.9	5.9	2.2	0.8	62.0	14.7	79.7	0.6	147.0
22/11/2004	15.1	16.0	0.7	2.3	2.1	5.1	0.1	0.2	49.7	16.4	66.4	0.4	195.0
15/12/2004	14.1	19.5	0.7	3.3	2.2	6.2	0.0	0.2	45.8	14.7	60.7	0.2	127.5

Date Collected	Temp. ºC	Secchi (m)	DRP (mg m^{-3})	DOP (mg m^{-3})	PP (mg m^{-3})	TP (mg m^{-3})	NH_4-N (mg m^{-3})	NO_3-N (mg m^{-3})	DON (mg m^{-3})	PN (mg m^{-3})	TN (mg m^{-3})	Chlorophyll *a* (mg m^{-3})	PC (mg m^{-3})
11/01/2005	16.0	20	0.4	2.6	1.4	4.4	0	0.1	42.9	12.5	55.5	0.2	137
25/01/2005	19.3	19.5	0.5	2.5	1.5	4.5	0.0	0.1	54.9	14.5	69.5	0.3	131.0
9/02/2005	20.7	18	2.2	0.8	1.4	4.4	0.5	0.0	38.5	12.7	51.7	0.2	136.0
22/02/2005	20.0	21.5	0.8	5.2	1.7	7.7	1.5	0.5	58.0	15.8	75.8	0.2	159.0
10/03/2005	19.3	18.5	0.2	2.8	1.4	4.4	1.8	0.2	34.0	14.5	50.5	0.4	158.0
21/03/2005	19.3	20	0.8	3.2	1.2	5.2	0.5	0.1	43.4	10.0	54.0	0.5	140.0
14/04/2005	17.9	17.2	0.9	2.1	1.6	4.6	0.8	0.2	54.0	14.0	69.0	0.7	177.0
18/05/2005	14.3	16	0.8	2.2	1.9	4.9	0.0	0.5	46.5	13.9	60.9	1.3	177.5
9/06/2005	13.0	14.1	0.6	3.4	2.2	6.2	0.1	1.6	41.3	17.4	60.4	1.3	140.5
20/06/2005	12.7	13.8	0.6	3.4	2.0	6.0	0.1	1.0	39.9	18.5	59.5	1.2	158.5
20/07/2005	11.5	13	3.9	6.1	2.5	12.5	0.8	0.8	97.4	19.1	118.1	2.1	169
3/08/2005	11.1	14	2.6	1.4	2.3	6.3	2.0	1.4	61.6	20.3	85.3	1.2	116
17/08/2005	11.2	13	3.1	1	3.2	7.3	0.3	2.1	49.6	26.4	78.4	1.7	172.5
31/08/2005	11.7	13	2	1	2.4	5.4	<1	1	69	22.2	92.2	1.3	330
14/09/2005	12.4	13	1	1	2.5	4.5	<1	<1	60	19.9	79.9	0.8	243
29/09/2005	11.9	14	1	1	2.4	4.4	<1	<1	67	18	85	0.8	253.5
12/10/2005	11.9	14	0.7	2.3	2.7	5.7	0.0	0.7	56.3	23.2	80.2	0.8	301
25/10/2005	13.4	15	0.8	4.2	1.8	6.8	0.6	0.7	54.7	16.8	72.8	0.6	193
10/11/2005	16.3	17.5	1.2	3.8	1.5	6.5	0.2	0.1	52.7	15.6	68.6	0.5	160
1/12/2005	15.1	19.3	0.6	2.4	1.4	4.4	0	0.3	39.7	16.1	56.1	0.4	141
10/01/2006	17.4	19	1	2	1.4	4.4	0.1	1	49.9	17.8	68.8	0.5	167
2/02/2006	20.2	15.5	1.1	8.9	1.5	11.5	0.0	0.0	54	18	72	1.1	193.5
1/03/2006	19.5	15.3	0.3	7.7	1.6	9.6	0.0	1.3	38.7	18.5	58.5	0.9	160.5
12/04/2006	16.7	15.8	0.6	2.4	1.6	4.6	0.0	0.0	43	20.4	63.4	1.0	230
27/04/2006	16.3	17	1.0	2	1.6	4.6	0.1	0.0	52.9	17.6	70.6	1.1	196.5
9/05/2006	15.7	17.5	0.7	2.3	1.6	4.6	0.7	0.1	46.2	17.2	64.2	0.9	233
30/05/2006	14.2	18.2	0.8	2.2	1.6	4.6	1.8	0.9	61.3	16.6	80.6	1.3	233
27/06/2006	11.9	15.2	0.8	3.2	1.9	5.9	0.8	1.3	61.9	23.2	87.2	2	243
11/07/2006	11.5	13.5	1.4	5.6	2.3	9.3	0.2	1.7	93.1	21	116	1.7	209
25/07/2006	11.1	12	1.0	0	2.1	3.1	0.9	7.4	48.7	17.6	74.6	2.8	192
4/09/2006	11.1	11	1.8	1.2	2.5	5.5	0.0	0.6	31.4	24.5	56.5	2.8	218
26/09/2006	11.9	17.5	1.0	0.8	2.3	4.1	0.0	0.1	39.9	18.6	58.6	0.8	347
18/10/2006	11.7	13	0.8	1.2	2.5	4.5	0.0	0.3	35.7	18.2	54.2	0.9	227.5
1/11/2006	12.4	14.5	0.3	2.7	2.4	5.4	0.0	0.0	41	19.4	60.4	0.8	203
5/12/2006	14.7	16	0.0	3	2	5	0.0	0.0	52	20.2	72.2	0.7	186
19/12/2006	15.6	15.5	0.2	1.8	1.8	3.8	1.0	0.1	48.9	15.4	65.4	0.7	150
9/01/2007	16.5	13.5	0.5	1.5	1.6	3.6	0.9	0.4	60.7	15	77	0.3	207
25/01/2007	18.5	14.5	0.6	0	1.6	2.2	1.5	0.5	59	18.6	79.6	0.3	212
8/02/2007	19.3	16	0.6	0	1.6	2.2	0.4	0.5	58.1	16.8	75.8	0.4	156
21/02/2007	19.6	18.2	0.4	0	1.8	2.2	0.8	0.5	68.3	24.4	94	0.3	182
21/03/2007	18.6	16.5	1.1	0	2.1	3.2	1.8	1.3	47.2	22.1	72.4	0.8	175
3/04/2007	18.0	19	0.9	6.1	1.8	8.8	0.6	0.3	66.9	23.8	91.6	0.7	
19/04/2007	16.5	16	0.9	3.1	2.7	6.7	2.4	1.0	69.6	29.2	102.2	0.6	193

Date Collected	Temp. ºC	Secchi (m)	DRP (mg m^{-3})	DOP (mg m^{-3})	PP (mg m^{-3})	TP (mg m^{-3})	NH$_4$-N (mg m^{-3})	NO$_3$-N (mg m^{-3})	DON (mg m^{-3})	PN (mg m^{-3})	TN (mg m^{-3})	Chlorophyll *a* (mg m^{-3})	PC (mg m^{-3})
8/05/2007	19.3	16	1.1	3.9	1.2	6.2	0.3	0.4	63.3	17.8	81.8	1.2	169
22/05/2007	15.2	18.5	0.7	2.3	1.3	4.3	2.0	0.5	53.5	15.4	71.4	0.8	201
14/06/2007	13.6	18	0.6	2.4	1.8	4.8	4.0	0.8	65.2	21.8	91.8	1	159
27/06/2007	12.4	18.5	0.8	0.2	3.6	4.6	2.1	1.4	45.5	25.8	74.8	1.2	162
18/07/2007	11.4	14.5	1.1	1.9	2.9	5.9	1.3	1.0	44.7	37.8	84.8	1.7	
8/08/2007	11.1	14	1.1	1.9	2.8	5.8	2.0	2.2	46.8	28.2	79.2	1.3	229
23/08/2007	11.0	13	0.8	2.2	2.5	5.5	0.4	0.4	39.2	30.3	70.3	2.2	202
11/09/2007	11.0	11	1	4	3.3	8.3	0	1	67	34.7	102.7	1.4	324
9/10/2007	12.1	15	1	1	2.6	4.6	1.4	1.5	59.1	23.8	85.8	0.8	184
30/10/2007	12.8	16	1.1	0.9	2.4	4.4	1.2	0.6	64.2	30.5	96.5	0.7	253
15/11/2007	13.5	14	1.8	2.2	2.1	6.1	1.8	0.3	53.9	24.8	80.8	0.5	262
4/12/2007	16.6	15	0.9	2.1	2	5	0.9	0.6	40.5	20.6	62.6	0.3	196
20/12/2007	17.4	17.5	1.1	2.9	1.1	5.1	0.2	0.4	44.4	17	62	0.6	112
17/01/2008	21.1	22.5	1	4	1.5	6.5	0.9	0.4	62.7	24.5	88.5	0.3	230
31/01/2008	19.8	21.5	0.5	1.5	1.3	3.3	1.5	0.3	75.2	17.6	94.6	0.3	190
14/02/2008	19.9	25	0.3	1.7	1.6	3.6	1.4	0.7	75.9	19.8	97.8	0.4	138
27/02/2008	19.3	22	0.1	1.9	1.6	3.6	0.7	0.2	70.1	20	91	0.4	143
13/03/2008	18.8	22	1	1	1.2	3.2	1.2	0.6	56.2	19.6	77.6	0.5	147
26/03/2008	19.3	19	1	0	0.9	1.9	0.4	0.5	63.1	17.1	81.1	0.5	160
17/04/2008	17.8	20.5	1.2	0.8	1.3	3.3	1.1	1	51.9	14.2	68.2	0.8	189
7/05/2008	15.7	16	0.7	2.3	1.5	4.5	1.3	0.3	60.4	21.1	83.1	0.6	189
22/05/2008	14.7	17	0.2	1.8	1.5	3.5	0.4	0.4	71.2	23.6	95.6	0.7	191
5/06/2008	13.6	15	1.3	0.7	1.6	3.6	1	2.1	29.9	17.5	50.5	1	177
19/06/2008	12.9	16.5	0.5	1.5	1.6	3.6	2	0.7	34.3	29.2	66.2	1.2	259
1/07/2008	12.0	14	0.9	2.1	2.15	5.15	0.6	0.7	50.7	34.6	86.6	1.7	242
15/07/2008	11.4	13	1.3	1.7	2.7	5.7	0.0	0.9	38.1	26.5	65.5	1.9	193
7/08/2008	11.1	12.5	1.8	1.2	3.4	6.4	0.0	0.7	25.3	28.8	54.8	3.0	119
20/08/2008	10.7	12.5	1.3	1.7	2.1	5.1	0.7	0.6	24.7	25	51	1.5	179
4/09/2008	11.0	13	0.6	3.4	2	6	1.0	0.0	50	21.5	72.5	1.1	217
16/09/2008	11.3	14.5	1.4	2.6	2.1	6.1	2.2	0.5	28.3	24.3	55.3	0.7	202
14/10/2008	12.6	12.2	0.5	2.5	2.6	5.6	0.5	0.0	45.5	27.1	73.1	0.6	203
4/11/2008	13.4	12	1.0	4	2.5	7.5	3.2	0.5	35.3	28.5	67.5	0.9	140
26/11/2008	15.7	10	1.1	1.9	2.4	5.4	0.4	0.0	47.6	27.6	75.6	1	217
22/12/2008	18.8	12	0.3	1.7	2.3	4.3	1.8	0.0	53.2	35.2	90.2	0.6	245
13/01/2009	19.7	13	1.4	1.6	2.1	5.1	0.3	1.4	61.3	29.4	92.4	0.5	266
28/01/2009	20.9	18	0.4	4.6	1.8	6.8	0.0	3.8	52.2	27.6	83.6	0.3	204
11/02/2009	21.4	22	0.1	4.9	1.6	6.6	4.1	0.5	49.4	25.6	79.6	0.4	185.5
25/02/2009	20.5	20	0.5	2.5	1.6	4.6	2.7	0.4	37.9	21.3	62.3	0.5	186.5
26/03/2009	18.0	18.5	1.1	1.9	2.7	5.7	0.0	1.3	56.7	25.1	83.1	0.6	285
15/04/2009	16.6	18	1.5	2.5	3.4	7.4	1.1	0.7	60.8	22.7	85.3	0.8	240
7/05/2009	15.0	16	1.4	4.6	2.3	8.3	1.3	1.1	56.6	21.7	80.7	1.3	223
27/05/2009	13.0	15	1.2	4.8	1.5	7.5	0.0	0.6	58.4	16.7	75.7	1.2	190
18/06/2009	11.6	16	1.9	0.1	1.7	3.7	0.7	1.7	45.6	23.5	71.5	1.5	201
6/07/2009	10.9	15	2.8	1.2	2.4	6.4	0.1	8.1	46.8	23.4	78.4	1.6	190
13/08/2009	10.43	12	1.9	2.1	2.7	6.7	0.6	0.5	46.9	31.4	79.4	1.9	230
7/09/2009	10.56	15	4.2	0	2.9	7.1	0.1	0.6	54.3	32.3	87.3	1.5	301

Date Collected	Temp. ºC	Secchi (m)	DRP (mg m^{-3})	DOP (mg m^{-3})	PP (mg m^{-3})	TP (mg m^{-3})	NH_4-N (mg m^{-3})	NO_3-N (mg m^{-3})	DON (mg m^{-3})	PN (mg m^{-3})	TN (mg m^{-3})	Chlorophyll *a* (mg m^{-3})	Chl-a at 50m (mg m^{-3})	PC (mg m^{-3})
19/10/2009	11.72	13	4.2	0	2.7	6.9	0.5	1.1	42.4	23.4	67.4	0.6	0.8	282.5
12/11/2009	13.00	12.5	1.2	2.8	2.4	6.4	1.0	0.3	33.7	19.5	54.5	0.7	0.8	249
17/12/2009	16.99	15	0.9	2.1	1.4	4.4	0.0	0.7	58.3	21	80.0	0.7	0.8	239.5
13/01/2010	17.89	14.5	0.6	1.4	1.8	3.8	0.0	1.0	47	21.6	69.6	0.6	1.2	306.5
2/02/2010	19.23	16	0.7	2.3	1.7	4.7	0.0	0.1	55.9	28.3	84.3	0.8	1.2	274.5
18/02/2010	20.45	17	1.1	1.9	3.9	6.9	1.3	2.3	102.4	85.4	191.4	0.9	1.1	530
10/03/2010	20.10	19	0.8	2.2	1.3	4.3	0.0	4	58	19.1	81.1	0.4	0.9	158.5
8/04/2010	17.40	21.5	0.8	2.2	1.7	4.7	0.0	1.2	58.8	26	86.0	0.7	1.3	231
28/04/2010	16.38	19	1.2	1.8	2.5	5.5	0.3	1.1	61	39.6	101.6	0.9	1.3	262
20/05/2010	15.09	19.5	1.9	1.1	2.1	5.1	7.6	2.5	66.9	25.1	102.1	0.9	0.8	248
3/06/2010	14.11	14.5	0.9	2.1	1.8	4.8	1.1	0.1	44.8	13.7	59.7	1.1	0.7	141.5
23/06/2010	12.23	14	1.1	1.9	2.4	5.4	1.1	0.8	46.1	22.1	70.1	1.1	0.7	196.5
13/07/2010	11.31	14.5	1.5	7.5	2.3	11.3	0.9	1.0	52.1	27.9	81.9	1.7	0.8	217
10/08/2010	11.01	12.8	1.7	1.3	2.6	5.6	0.9	1.0	30.1	29.7	61.7	1.9	2.0	225
24/08/2010	10.92	11	1.6	1.4	1.5	4.5	0.6	0.5	30.9	34.5	66.5	2.4	2.5	244.5
13/09/2010	11.37	10.5	1.1	0.9	3.3	5.3	1.3	0.3	28.4	33.7	63.7	1.6	1.6	342.5
5/10/2010	11.90	10.8	3.1	0	2.5	5.6	2.0	2.3	28.7	22.8	55.8	0.9	1.6	269
26/10/2010	13.00	12.5	1.7	1.3	2.4	5.4	0.9	0.9	34.2	18.2	54.2	0.8	1.7	237
10/11/2010	13.98	11.5	0.8	2.2	2.3	5.3	0.5	0.3	59.2	21.1	81.1	0.7	1.8	250.5
25/11/2010	16.14	14.2	1.4	2.6	1.7	5.7	2.9	1.4	41.7	18	64.0	0.4	2.0	184.5
8/12/2010		15.5	1.2	2.8	1.8	5.8	1.8	0.6	43.6	18.3	64.3	0.4	0.9	181
21/12/2010	18.41	17	0.8	3.2	1.8	5.8	5.7	0.4	66.9	41.4	114.4	0.4	0.9	259.5
11/01/2011	19.81	11	0.8	1.2	1.9	3.9	1.8	0.5	48.7	27.1	78.1	0.5	0.4	281.5
27/01/2011	19.69	17	1.0	1	1.7	3.7	1.4	0.7	45.9	21.5	69.5	0.4	0.7	178.5
17/02/2011	20.61	12	0.9	1.1	2.1	4.1	0.5	0.5	57	23.6	81.6	0.5	0.7	224
1/03/2011	20.41	19	0.5	2.5	1.5	4.5	0.7	0.9	48.4	19.9	69.9	0.6	0.3	150.5
15/03/2011	20.07	15	3.0	0	1.4	4.4	0.2	2.7	50.1	21.6	74.6	0.5	0.6	179.5
13/04/2011	17.62	17	3.1	0	1.5	4.6	0.0	0.8	64.2	24.7	89.7	0.8	0.6	223
10/05/2011	15.53	16.5	1.4	2.6	1.5	5.5	0.9	0.9	74.2	17.5	93.5	0.7	0.7	207
31/05/2011	14.05	17	1.2	0.8	1.6	3.6	0.3	0.8	44.9	22.5	68.5	0.9	0.6	166.5
22/06/2011	12.95	14	0.4	1.6	2	4	1.1	0.4	42.5	22	66	1.0	0.9	190.5
5/07/2011	12.13	13	1.0	1	1.8	3.8	0.0	0.2	41.8	28.8	70.8	1.3	1.2	233
9/08/2011	11.10	16	1.8	1.2	2.3	5.3	3.4	5.0	75.6	24.7	108.7	1.7	1.9	346
24/08/2011	10.86	9	1.6	1.4	2.8	5.8	1.0	0.2	86.8	39.2	127.2	1.6	2.1	311
7/09/2011	11.22	16	0.6	3.4	1.8	5.8	2.0	1.1	44.9	23.2	71.2	0.8	1.4	198
28/09/2011	10.96	13	1.0	2	2.9	5.9	2.0	0.8	59.2	32.1	94.1	1.2	1.5	341
26/10/2011	13.00	14	0.6	3.4	1.7	5.7	0.7	0.0	42.3	25.5	68.5	0.5	1.2	227
8/11/2011	14.12	14	1.1	2.9	1.2	5.2	1.3	3.0	60.7	13.3	78.3	0.4	1.0	210
22/11/2011	14.57	18	1.1	1.9	2.1	5.1	1.2	0.0	44.8	28.1	74.1	0.7	0.9	202
8/12/2011	16.80	18.5	0.9	2.1	1.7	4.7	3.3	0.8	58.9	27.3	90.3	0.6	1.0	292
22/12/2011	18.22	13	0.6	0.4	1.6	2.6	2.0	2.4	63.6	22.9	90.9	0.5	0.9	323
12/01/2012	19.15	16.5	1.3	0.7	1.8	3.8	4.9	0.3	53.8	42.8	101.8	0.4	1.0	304
26/01/2012	19.02	15	0.9	2.1	1.4	4.4	3.7	0.5	41.8	29.4	75.4	0.5	0.9	245
16/02/2012		16	0.6	1.4	1.6	3.6	2.5	0.7	55.8	22.5	81.5	0.6	0.8	235
7/03/2012	18.17	16	0.7	1.3	1.6	3.6	0.8	1.0	54.2	24.5	80.5	0.6	1.2	230
10/04/2012	16.78	17	0.9	1.1	2.5	4.5	1.9	2.3	54.8	26.5	85.5	0.8	1.0	221
7/05/2012	15.06	17	0.8	2.2	1.5	4.5	2.7	0.8	73.5	20.1	97.1	0.7	1.0	235
30/05/2012	13.41	17	3.3	1.7	2.2	7.2	3.4	0.9	59.7	31.6	95.6	1.1	0.8	200
14/06/2012	12.64	14	2.0	3	1.8	6.8	2.6	0.1	54.3	30.1	87.1	1.0	0.8	218
2/07/2012	11.63	15.5	2.3	0	1.7	4	2.8	2.3	91.9	22.5	119.5	1.2	1.8	215

Date Collected	Temp. ºC	Secchi (m)	DRP (mg m^{-3})	DOP (mg m^{-3})	PP (mg m^{-3})	TP (mg m^{-3})	NH_4-N (mg m^{-3})	NO_3-N (mg m^{-3})	DON (mg m^{-3})	PN (mg m^{-3})	TN (mg m^{-3})	Chlorophyll *a* (mg m^{-3})	Chl-a at 50m (mg m^{-3})	PC (mg m^{-3})
18/07/2012	11.44	17	2.2	1.5	2.1	5.8	2.3	1.3	54.4.	34.5	38.1	1.3	1.7	284
1/08/2012	10.85	17	3.7	1.3	1.9	6.9	0.8	8.8	56.4	22.3	88.3	1.5	1.5	140
17/08/2012	11.06	14	2.2	1.6	2.5	6.3	2.6	1.8	48.6	28.2	81.2	1.4	1.2	190
29/08/2012			1.4	2.6	1.8	5.8	4.9	1.7	56.4	30.6	93.6	1.3	1.0	252
20/09/2012	11.14	13	3.4	0	4.0	7.4	0.6	0.4	53	39.0	93	1.1	1.6	576

Lake Taupo cumulative database of 10 m tube sample data
Samples collected from Kuratau Basin (Site B)

Date Collected	Temp.	Secchi	DRP	DOP	PP	TP	NH_4-N	NO_3-N	DON	PN	TN	Chlorophyll *a*	PC
	ºC	m	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}
8/01/2002	18.1	13.5	0.4	2	2.2	4.6	0.4	1.3	48	16.7	66.4	0.9	233
22/01/2002	18.8	12	0.9	2	2.6	5.5	0.9	0.3	41	19.9	62.1	0.9	221
6/03/2002	18.6	14.5	0.3	2	2.3	4.6	1.4	0.5	73	18.3	93.2	0.9	207
4/04/2002	17.4	19.5	0.6	2	1.5	4.1	0.4	0.1	40	11.2	51.7	0.9	162
17/04/2002	16.8	19	0.0	3	1.6	4.6	0.5	0.1	45	12.3	57.9	0.9	143
5/05/2002	15.1	13.2	0.3	1.1			1.6	0.4	40			0.9	
19/06/2002	12.5	15	1.0	1	2.2	4.2	0.4	0.8	48.2	17.4	66.8	1.5	182
1/07/2002	12.1	16	1.5	1.5	1.8	4.8	0.8	1.7	41.5	14.2	58.2	1.6	146
17/07/2002	11.5	12.5	1.8	2.2	2	6	0.8	5.1	51.1	16.1	73.1	1.5	156.5
31/07/2002	11.3	10.5	2.0	3	2.5	7.5	1.5	2.2	81.5	18.5	103.7	2.6	194.5
29/08/2002	11.0	8	1.2	4.8	3.3	9.3	0	0.2	184.0	22.9	207.1	2.3	221
18/09/2002	11.1	11	1.9	2.1	2.1	6.1	0.4	0.6	43.4	14	58.4	1.1	149
9/10/2002	11.7	16	1.4	1.6	1.7	4.7	4.4	0.2	19.6	11.7	35.9	0.5	149
13/11/2002	12.0	14	1	3	2.5	6.5	0.3	0	35	15.2	50.5	1.8	478
28/11/2002	13.8	12.7	0.9	2.9	2	5.8	0	0	40	16.7	56.7	0.7	203.5
18/12/2002	15.2	14	0.6	1.4	2.1	4.1	0	0.1	36	11.2	47.3	0.4	143
30/01/2003	16.8	18	0.5	2.5	1.7	4.7	<1	0.8	43	12.1	55.9	0.6	148.5
13/02/2003	18.8	11	0.7	1.3	1.6	3.6	0.4	0.2	45	9.3	54.9	0.7	131
17/03/2003	18.7	14	0.5	3.5	2	6	<1	0.7	49	16.3	66.0	1.0	208
3/04/2003	19.0	12.8	0.6	3.4	2.1	6.1	<1	0.1	50	19.6	69.7	1.1	239.5
28/04/2003	16.7	13.5	0.6	3.4	1.6	5.6	<1	0.2	57	13.1	70.3	1.4	218.5
15/05/2003	15.7	15.5	0.4	3.6	1.8	5.8	<1	0.2	63	13.5	76.7	1.7	229.5
12/06/2003	12.5	12	1.7	1.3	2.2	5.2	0.1	2.8	39.1	13.9	55.9	1.3	
14/07/2003	11.8	12	1.7	2.3	2.2	6.2	0.9	1.9	39.4	15.9	58.1	1.7	96.5
31/07/2003	11.3	13	2.1	1.9	2.7	6.7	1.2	2.0	43.8	18.0	65.0	2.1	108.5
14/08/2003	11.4	13	1.8	2.2	3.3	7.3	0.3	0.3	33	22.3	55.9	2.5	112.0
26/08/2003	11.3	11.5	3.1	0.9	4.0	8	0.4	0.1	37	22.4	59.9	3.1	148.0
8/09/2003	11.1	11	2.5	1.5	3.3	7.3	0.4	0.1	36	23.5	60.0	1.4	196.5
7/10/2003	11.7	9.5	2.3	1.7	3.0	7.0	0.0	0.1	49.9	20.5	70.5	1.2	185.5
21/10/2003	13.2	15.0	2.2	0.8	2.7	5.7	0.3	0.2	38.5	14.9	53.9	0.8	155.5
19/11/2003	13.8	17.0	1.6	2.4	2.4	6.4	0.0	0.1	51.0	14.6	65.7	0.6	139.5
4/12/2003	15.6	17.0	1.8	2.2	1.8	5.8	0.2	0.1	44.7	13.5	58.5	0.4	126.5
18/12/2003	17.0	15.0	0.5	3.5	1.9	5.9	0.0	0.2	56.0	12.4	68.6	0.5	145.5
13/01/2004	20.3	16.0	0.4	4.6	1.8	6.8	0.0	0.2	54.0	13.7	67.9	0.5	125.0

Date Collected	Temp. ºC	Secchi (m)	DRP (mg m^{-3})	DOP (mg m^{-3})	PP (mg m^{-3})	TP (mg m^{-3})	NH_4-N (mg m^{-3})	NO_3-N (mg m^{-3})	DON (mg m^{-3})	PN (mg m^{-3})	TN (mg m^{-3})	Chlorophyll *a* (mg m^{-3})	PC (mg m^{-3})
26/02/2004	16.8	13.5	1.1	1.9	1.8	4.8	0.6	0.1	42.3	15.8	58.8	0.8	157.0
8/03/2004	17.6	5.0	0.8	2.2	3.1	6.1	1.0	0.3	41.7	17.5	60.5	0.9	172.0
31/03/2004	15.9	11.0	0.8	3.2	1.8	5.8	0.7	0.2	45.1	9.9	55.9	1.4	124.5
14/04/2004	15.0	14.0	0.9	4.1	2.2	7.2	0.6	0.3	52.1	14.9	67.9	1.3	171.5
10/05/2004	14.7	15.5	0.8	2.2	1.7	4.7	0.0	0.2	59.8	15.9	75.9	1.3	179.0
10/06/2004	12.9	12.0	1.4	2.6	2.1	6.1	0.0	0.2	108.8	18.6	127.6	1.2	183.0
13/07/2004	11.4	11.0	2.1	2.9	2.5	7.5	0.0	8.4	40.6	19.3	68.3	1.4	154.0
26/07/2004	11.2	10.0	1.3	2.7	3.2	7.2	0.2	5.8	38.0	25.0	69.0	2.7	204.0
24/08/2004	10.9	10.0	0.7	3.3	3.1	7.1	0.0	0.0	47.0	20.9	67.9	2.5	158.0
7/09/2004	10.8	11.0	0.7	2.3	2.6	5.6	0.0	0.2	44.8	17.1	62.1	1.5	172.5
21/10/2004	11.7	11.0	1.2	1.8	2.1	5.1	0.2	0.0	30.8	16.1	47.1	0.8	172.5
2/11/2004	13.1	15.0	1.0	2.0	1.7	4.7	0.2	0.1	42.7	11.0	54.0	0.5	152.0
22/11/2004	14.9	15.0	0.6	3.4	1.6	5.6	0.6	0.0	33.4	9.5	43.5	0.5	141.5
15/12/2004	13.2	17.2	0.6	3.4	1.6	5.6	0.4	0.1	39.5	12.6	52.6	0.2	120.0

Lake Taupo cumulative database of 10 m tube sample data

Samples collected from Western Bays (site C)

Date Collected	Temp.	Secchi	DRP	DOP	PP	TP	NH_4-N	NO_3-N	DON	PN	TN	Chlorophyll *a*	PC
	ºC	m	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}
8/01/2002	18.72	14.5	0.9	4	2.3	7.2	0.9	0.6	88	16.1	105.6	0.8	213
22/01/2002	18.82	15.5	0.7	2	2.2	4.9	0.7	0.0	37	16.8	54.5	0.8	221
6/03/2002	18.68	16	0.2	2	2	4.2	0	0.1	45	16	61.1	0.7	177
4/04/2002	17.47	19	0.6	2	1.4	4	0.0	0.0	38	8.8	46.8	0.9	152
17/04/2002	16.88	18.5	0	3	1.6	4.6	0.7	0.2	44	11.8	56.7	0.9	167
5/05/2002	15.6	15.6	0.4	1			2	0.2	45			1.1	
19/06/2002	12.58	16	0.9	2.1	2	5	0.3	1.2	38.8	15.9	56.2	0.9	161
1/07/2002	12.22	14	1.3	1.7	1.9	4.9	0.3	0.4	45	15	60.7	1.4	148
17/07/2002	11.52	12.5	1.9	2.1	2	6	0.9	4.9	46.1	16.3	68.2	1.5	160
31/07/2002	11.6	12	2.3	2.7	2.3	7.3	1.7	4.0	113.3	16.7	135.7	2.3	150
29/08/2002	11.4	8	1	3	3.2	7.2	0	0	177	22.3	199.3	2.4	217
18/09/2002	11.24	12	2.8	2.2	2	7	1.7	0.4	45.3	11.7	59.1	0.9	152
9/10/2002	12.10	19	1.5	1.5	1.7	4.7	0.3	0.2	28	10.2	38.7	0.4	116
13/11/2002	12.60	16	1.1	2.9	2	6	0.1	0	51	12.2	63.3	0.6	141
28/11/2002	13.90	15.5	0.9	2.1	2	5	0.4	0.4	40	14.4	55.2	0.8	125.5
18/12/2002	15.10	13.5	0.8	2.2	1.9	4.9	0	0.3	45	10.2	55.5	0.5	136.5
30/01/2003	17.60	18.5	0.5	2.5	1.5	4.5	<1	0.1	46	8.6	54.7	0.4	141.5
13/02/2003	19.50	19	0.6	1.4	1.6	3.6	0	0.1	42	8.4	50.5	0.5	104
17/03/2003	18.70	15	0.5	2.5	1.7	4.7	<1	0.4	46	14.6	61.0	1.1	215
3/04/2003	18.80	14.5	0.5	2.5	1.6	4.6	<1	0.4	49	16.5	65.9	1.2	204
28/04/2003	17.00	14.5	0.4	2.6	1.4	4.4	<1	0.4	54	12.2	66.6	1.5	191
15/05/2003	15.60	17	0.1	3.9	2.2	6.2	<1	0.1	56	18	74.1	1.3	197
12/06/2003	13.70	11	1.3	1.7	2	5	0.1	0.9	40	13.8	54.8	1.3	
14/07/2003	11.80	14	1.9	2.1	2	6	1	4.7	39.3	14.9	59.9	1.5	85.0
31/07/2003	11.40	12	3.1	5.9	2.8	11	0.1	4.0	55	20.3	79.4	2.3	101.5
14/08/2003	11.50	14.5	2.4	2.6	2.9	7.9	1.1	3.8	46.1	19.5	70.5	2.8	92.5
26/08/2003	11.30	13	2.8	2.2	3.8	8.8	0.5	0.2	39	25.0	64.7	3.2	174.5
8/09/2003	11.30	12	2.6	0.4	3	6	0.1	0.1	40	19.5	59.7	1.3	233.0
7/10/2003	11.7	12.5	2.7	1.3	2.8	6.8	0.0	0.3	44.7	18.4	63.4	1.5	157.5

Date Collected	Temp. ºC	Secchi (m)	DRP (mg m^{-3})	DOP (mg m^{-3})	PP (mg m^{-3})	TP (mg m^{-3})	NH_4-N (mg m^{-3})	NO_3-N (mg m^{-3})	DON (mg m^{-3})	PN (mg m^{-3})	TN (mg m^{-3})	Chlorophyll *a* (mg m^{-3})	PC (mg m^{-3})
21/10/2003	13.0	12.0	1.5	1.5	3.1	6.1	0.3	0.0	44.7	17.4	62.4	1.1	195.0
19/11/2003	14.3	17.2	1.5	1.5	2.3	5.3	0.8	0.0	38.2	14.4	53.4	0.7	123.0
4/12/2003	15.5	17.0	1.7	3.3	1.7	6.7	0.0	0.2	46.8	11.2	58.2	0.5	129.0
18/12/2003	17.0	19.0	0.5	4.5	1.5	6.5	0.0	0.0	47.0	9.9	56.9	0.4	124.5
13/01/2004	20.2	17.5	0.7	4.3	1.6	6.6	0.0	0.1	53.0	11.9	65.0	0.4	118.5
26/02/2004	16.9	14.0	0.9	2.1	2.2	5.2	0.8	0.4	40.8	17.2	59.2	0.7	156.0
8/03/2004	18.4	13.0	0.8	2.2	2.0	5.0	0.7	0.1	34.2	11.1	46.1	0.6	124.0
31/03/2004	16.4	12.5	0.6	3.4	2.0	6.0	0.7	0.3	51.0	12.3	64.3	1.2	175.5
14/04/2004	15.4	16.5	0.9	3.1	2.3	6.3	0.6	0.3	50.1	14.2	65.2	1.2	159.0
10/05/2004	14.9	16.0	0.8	3.2	1.6	5.6	0.0	0.2	48.8	15.4	64.4	1.1	153.0
10/06/2004	13.1	14.0	0.8	2.2	2.0	5.0	0.0	0.2	41.8	16.6	58.6	1.0	151.0
13/07/2004	11.6	12.5	1.3	2.7	2.5	6.5	0.0	5.9	39.1	19.9	64.9	1.6	156.5
26/07/2004	11.5	11.0	1.5	2.5	2.9	6.9	0.3	2.7	46.0	22.2	71.2	2.4	180.5
24/08/2004	10.9	10.0	1.0	3.0	2.9	6.9	0.0	0.4	37.6	18.5	56.5	2.5	161.0
7/09/2004	11.1	12.0	1.2	3.8	2.6	7.6	0.0	0.0	54.0	16.8	70.8	1.5	202.0
21/10/2004	11.7	12.0	1.1	1.9	1.9	4.9	0.2	0.0	35.8	14.8	50.8	0.6	167.5
2/11/2004	12.4	17.0	1.0	3.0	1.7	5.7	0.3	1.2	45.5	16.3	63.3	0.4	173.0
22/11/2004	14.8	16.0	0.5	3.5	1.7	5.7	0.0	0.2	37.8	10.8	48.8	0.5	149.0
15/12/2004	14.2	20.8	0.9	4.1	1.4	6.4	0.0	0.0	42.0	12.2	54.2	0.2	131.0

Lake Taupo biannual nutrient database

2011-2012

Started 27 October 1994

Collection date 22 November 2011

Secchi depth = 18.0 m

Code	Depth	pH	EC @25oC	Temp	DO	SS	VSS	Chlor_a	DRP	DOP	PP	TP	NH_4-N	NO_3-N	DON	UREA	PN*	TN	DOC	PC	PN**
	m		µS cm^{-1}	°C	g m^{-3}	g m^{-3}	g m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}
ZH1	1	7.95	119.4	14.59	10.32	0.5	0.2	0.5	0.3	1.7	1.3	3.3	0.6	0.0	30.4	<2	10.8	41.8	550	147.4	8.7
ZH2	10	7.94	119.1	14.55	11.18	0.5	0.3	0.5	0.3	1.7	1.7	3.7	0.3	0.0	35.7	<2	11.6	47.6	552	129.9	7.1
ZH3	20	7.91	119.5	14.52	11.66	0.4	0.2	0.6	0.3	1.7	1.5	3.5	0.0	0.0	30.0	<2	11.9	41.9	555	122.8	13.1
ZH4	30	7.91	119.2	14.20	11.57	0.4	0.3	0.6	0.4	1.6	1.6	3.6	0.6	0.0	27.4	<2	12.3	40.3	550	124.9	13.5
ZH5	40	7.86	119.2	12.23	11.72	0.5	0.2	1.2	0.4	1.6	2.0	4.0	0.0	0.0	25.0	<2	14.1	39.1	542	107.6	9.6
ZH6	50	7.83	118.0	11.36	11.61	0.3	0.2	1.2	0.4	1.6	1.9	3.9	1.0	0.1	22.9	<2	13.0	37.0	526	105.2	18.2
ZH7	60	7.78	119.4	11.00	10.84	0.4	0.2	0.9	0.6	1.4	1.5	3.5	0.4	0.3	22.3	<2	11.3	34.3	523	92.2	9.6
ZH8	70	7.76	119.6	10.89	10.79	0.2	0.1	0.7	0.8	2.2	1.3	4.3	0.3	0.5	28.2	<2	9.7	38.7	528	65.6	5.9
ZH9	80	7.70	120.0	10.86	10.38	0.3	0.1	0.6	0.9	1.1	1.4	3.4	1.3	0.6	29.1	<2	7.4	38.4	502	61.9	7.7
ZH10	90	7.65	119.6	10.83	10.30	0.3	0.2	0.6	0.8	1.2	1.3	3.3	1.3	0.9	24.8	<2	7.5	34.5	522	49.7	9.5
ZH11	100	7.70	119.6	10.82	9.92	0.2	0.1	0.5	0.9	1.1	1.2	3.2	1.5	1.6	24.9	<2	8.3	36.3	478	52.1	10.1
ZH12	110	7.65	119.2	10.80	9.93	0.2	0.1	0.6	1.0	1	1.3	3.3	0.9	1.1	27.0	<2	8.1	37.1	527	47.3	12.6
ZH13	120	7.65	119.5	10.79	9.47	0.2	0.1	0.6	1.1	0.9	1.3	3.3	2.8	2.8	29.4	<2	7.2	42.2	516	39.6	6.6
ZH14	130	7.69	119.5	10.78	9.39	0.3	0.1	0.6	1.1	1.9	1.1	4.1	1.7	2.8	33.5	<2	7.6	45.6	513	44.9	9.1
ZH15	140	7.69	119.6	10.77	9.13	0.3	0.1	0.5	1.3	1.7	1.3	4.3	5.8	4.4	32.8	<2	7.6	50.6	515	41.5	6.3
ZH16	150	7.63	119.7	10.76	9.06	0.3	0.1	0.4	1.2	1.8	1.3	4.3	5.7	4.5	30.8	<2	3.7	44.7	544	50.7	6.6

Collection date 10 April 2012

Secchi depth = 17.0 m

Code	Depth	pH	EC @25oC	Temp	DO	SS	VSS	Chlor_a	DRP	DOP	PP	TP	NH_4-N	NO_3-N	DON	UREA	PN*	TN	DOC	PC	PN**
	m		µS cm^{-1}	°C	g m^{-3}	g m^{-3}	g m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}
HC1	1	7.92	119	16.63	9.19	<0.5	<0.5	0.6	0.4	1.6	1.8	3.8	0.4	3.7	54.9	7	15.7	74.7	644	134.5	15.5
HC2	10	7.90	121	16.44	9.74	<0.5	<0.5	0.6	0.5	1.5	1.9	3.9	3.8	0.6	56.6	3	15.2	76.2	723	131.0	14.5
HC3	20	7.88	124	16.40	9.39	<0.5	<0.5	0.7	0.4	1.6	1.9	3.9	1.4	0.6	30.0	<2	15.6	47.6	635	131.5	14.8
HC4	30	7.86	120	16.17	9.44	<0.5	<0.5	0.9	0.5	1.5	1.5	3.5	0.0	0.4	40.6	<2	11.5	52.5	670	114.0	14.9
HC5	40	7.78	120	14.03	9.55	<0.5	<0.5	1.7	0.4	0.6	2.1	3.1	0.0	0.4	35.6	<2	16.4	52.4	605	134.0	17.1
HC6	50	7.65	120	11.67	9.34	<0.5	<0.5	1.2	1.6	0.4	2.0	4.0	0.0	1.8	31.2	<2	14.3	47.3	530	100.1	12.9
HC7	60	7.60	117	10.97	9.46	<0.5	<0.5	0.7	1.2	0.8	1.2	3.2	0.0	1.8	32.2	<2	9.3	43.3	497	66.5	8.2
HC8	70	7.54	118	10.80	9.37	<0.5	<0.5	0.5	2.4	0.6	1.1	4.1	0.0	6.7	32.3	<2	8.5	47.5	476	66.1	7.9
HC9	80	7.57	120	10.71	9.11	<0.5	<0.5	0.4	2.6	0.4	1.1	4.1	0.0	8.1	28.9	<2	8.5	45.5	481	53.5	6.7
HC10	90	7.51	116	10.64	8.83	<0.5	<0.5	0.3	3.5	0.5	1.0	5.0	0.0	11.6	41.4	<2	7.6	60.6	536	62.4	7.0
HC11	100	7.41	121	10.62	9.04	<0.5	<0.5	0.2	3.4	0.6	1.1	5.1	0.0	13.1	28.9	<2	8.2	50.2	489	48.7	6.0
HC12	110	7.25	121	10.59	8.55	<0.5	<0.5	0.2	3.8	0.2	0.8	4.8	0.0	13.6	26.4	3	5.0	45.0	557	41.3	4.9
HC13	120	7.38	112	10.56	8.94	<0.5	<0.5	0.2	4.0	1	0.9	5.9	0.0	15.4	27.6	<2	6.7	49.7	587	45.0	6.7
HC14	130	7.36	117	10.54	8.66	<0.5	<0.5	0.2	4.8	0.2	1.0	6.0	0.0	16.8	29.2	<2	7.2	53.2	585	50.8	5.7
HC15	140	7.42	119	10.54	8.72	<0.5	<0.5	0.2	6.3	0.7	1.2	8.2	0.0	22.2	28.8	<2	8.1	59.1	618	48.5	5.8
HC16	150	7.35	121	10.54	7.92	<0.5	<0.5	0.2	8.2	0	1.7	9.9	0.1	27.4	28.5	<2	8.7	64.7	596	52.2	5.7

DO sensor failed; indicative data from 14 March

NH_4, NO_3, DON, Urea all as N

* = PN by wet digestion method, ** = PN by combustion furnace method.

Detection limits: DRP 0.5; NO_3-N 0.5; NH_4-N 1.0 mg m^{-3}

New Analytical instrument (Flow Injection Analysis) from January 2002, gives greatly improved resolution at low levels.

FIA instrument results are given as a better indication of likely absolute low levels of DRP, NO_3-N, and NH_4-N below nominal detection limit.

Lake Taupo biannual nutrient database

2010-2011

Started 27 October 1994

Collection date 10 November 2010

Secchi depth = 11.5 m

Code	Depth	pH	EC @25oC	Temp	DO	SS	VSS	Chlor_a	DRP	DOP	PP	TP	NH_4-N	NO_3-N	DON	UREA	PN*	TN	DOC	PC	PN**	SO_4
	m		µS cm^{-1}	^{o}C	g m^{-3}	g m^{-3}	g m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	g m^{-3}
KD1	1	7.8	121	14.12	9.4	1.0	<0.5	0.7	0.9	2.1	4.6	7.6	0.0	0.2	49.8	<2	20.8	70.8	503	192.0	20.0	7.4
KD2	10	7.82	120	13.46	9.1	0.8	<0.5	0.7	0.6	2.4	2.0	5.0	0.0	0.1	41.9	<2	12.1	54.1	478	182.5	12.1	7.5
KD3	20	7.77	120	13.27	9.1	0.8	<0.5	0.8	0.6	1.4	2.1	4.1	0.0	0.0	42.0	<2	14.2	56.2	536	192.5	13.4	7.5
KD4	30	7.8	119	12.24	9.0	0.7	<0.5	1.1	0.5	1.5	2.2	4.2	0.2	0.0	40.8	<2	14.2	55.2	500	211.0	13.2	7.6
KD5	40	7.72	120	11.73	9.6	0.6	<0.5	1.3	0.7	1.3	2.5	4.5	0.2	0.0	41.8	<2	14.8	56.8	447	179.0	12.5	7.7
KD6	50	7.73	119	11.33	9.9	0.9	<0.5	1.6	1.0	1.0	2.6	4.6	0.0	0.0	42.0	<2	14.7	56.7	443	173.5	13.7	7.8
KD7	60	7.57	120	11.16	9.4	0.9	<0.5	2.3	1.8	1.2	2.8	5.8	0.0	0.2	30.8	<2	13.1	44.1	433	140.5	13.3	7.8
KD8	70	7.67	120	11.03	8.3	0.9	<0.5	2.5	0.8	2.2	2.8	5.8	0.0	0.2	44.8	<2	13.1	58.1	437	150.0	14.0	7.9
KD9	80	7.62	119	10.96	8.3	0.8	<0.5	2.0	0.8	2.2	2.9	5.9	0.0	0.2	40.8	<2	14.0	55.0	427	137.5	13.3	7.9
KD10	90	7.57	120	10.89	8.3	0.6	<0.5	2.2	0.8	3.2	2.7	6.7	0.0	1.6	39.4	<2	13.2	54.2	423	70.3	10.0	8.0
KD11	100	7.58	119	10.86	8.0	<0.5	<0.5	2.0	0.8	4.2	2.8	7.8	0.0	2.1	42.9	<2	10.5	55.5	436	72.5	9.6	8.2
KD12	110	7.54	120	10.83	8.0	0.5	<0.5	2.1	1.1	2.9	2.6	6.6	0.0	2.7	40.3	<2	11.7	54.7	428	73.4	9.9	8.0
KD13	120	7.6	119	10.82	7.9	0.5	<0.5	1.7	1.0	2.0	2.5	5.5	0.0	3.8	47.2	<2	11.3	62.3	440	74.9	9.6	8.6
KD14	130	7.62	120	10.80	8.1	3.3	<0.5	2.1	0.8	2.2	3.1	6.1	0.0	7.3	37.7	<2	12.8	57.8	432	83.7	10.9	8.6
KD15	140	7.57	119	10.79	7.8	0.6	<0.5	2.1	1.5	2.5	3.1	7.1	0.0	9.3	39.7	<2	13.5	62.5	430	72.0	12.0	8.1
KD16	150	7.55	120	10.80	8.1	0.8	<0.5	2.8	1.6	2.4	4.3	8.3	0.0	10.8	41.2	<2	17.0	69.0	442	87.1	14.8	8.0

(for summations <1 use 0.5)

Collection date 13 April 2011

Secchi depth = 17.0 m

Code	Depth	pH	EC @25oC	Temp	DO	SS	VSS	Chlor_a	DRP	DOP	PP	TP	NH_4-N	NO_3-N	DON	UREA	PN*	TN	DOC	PC	PN**	SO_4
	m		µS cm^{-1}	^{o}C	g m^{-3}	g m^{-3}	g m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	g m^{-3}
RL1	1	7.84	116	17.62	9.2	0.4	0.3	0.46	2.0	0.0	0.8	2.8	0.0	0.1	44.7	<2	8.8	53.6	661	102.0	9.9	7.8
RL2	10	7.74	116	17.65	9.6	0.4	0.2	0.64	1.9	0.1	1.1	3.1	0.2	0.2	43.1	<2	10.8	54.3	684	109.5	9.5	7.8
RL3	20	7.73	116	17.62	9.9	0.4	0.3	0.65	1.5	0.5	1.7	3.7	0.0	0.1	40.1	<2	13.6	53.8	713	160.5	17.9	8.2
RL4	30	7.75	117	17.61	9.9	0.4	0.3	0.59	1.5	0.5	1.3	3.3	0.8	0.1	43.2	<2	12.1	56.2	669	139.0	14.7	8.1
RL5	40	7.63	117	12.52	10.2	0.2	0.1	0.74	3.2	0.8	1.1	5.1	0.0	1.2	29.2	<2	8.0	38.4	543	62.6	9.4	8.0
RL6	50	7.68	118	11.63	9.8	0.2	0.2	0.67	3.0	0.0	1.0	4.0	0.0	4.0	27.8	<2	7.3	39.1	587	58.7	5.0	7.9
RL7	60	7.56	118	11.29	9.7	0.3	0.2	0.46	2.6	0.4	0.9	3.9	0.0	6.1	28.0	<2	6.0	40.1	519	75.1	6.6	8.1
RL8	70	7.54	118	11.14	9.1	0.2	<0.1	0.18	2.7	0.3	1.0	4.0	0.0	8.7	25.8	<2	6.7	41.2	519	62.5	8.5	8.0
RL9	80	7.51	118	11.06	9.1	0.2	<0.1	0.16	2.9	0.1	0.8	3.8	0.0	11.8	31.4	<2	5.5	48.7	515	48.6	7.0	8.0
RL10	90	7.45	118	11.00	8.5	0.2	<0.1	0.15	3.4	0.6	0.9	4.9	0.9	14.0	26.3	<2	5.4	46.6	501	56.4	5.6	7.8
RL11	100	7.45	118	10.96	8.2	0.2	0.1	0.14	3.2	0.8	0.9	4.9	0.3	15.2	45.6	<2	5.5	66.6	517	86.8	8.0	8.3
RL12	110	7.40	118	10.92	8.1	0.2	<0.1	0.17	4.4	0.6	0.9	5.9	0.0	20.8	46.4	<2	4.1	71.3	512	41.0	4.2	7.8
RL13	120	7.43	118	10.90	7.9	0.1	<0.1	0.17	4.0	0.0	0.8	4.8	0.1	20.9	28.1	<2	4.5	53.6	512	51.4	5.8	7.9
RL14	130	7.45	118	10.88	7.5	0.2	0.1	0.16	4.5	0.5	1.0	6.0	0.8	23.4	43.4	<2	5.3	72.9	532	50.0		7.6
RL15	140	7.49	117	10.87	7.5	0.2	<0.1	0.17	5.1	0.9	1.0	7.0	0.2	25.1	33.3	<2	5.5	64.1	527	49.8	7.6	7.9
RL16	150	7.39	118	10.86	7.0	0.3	<0.1	0.27	6.1	0.0	1.4	7.5	0.3	28.7	28.3	<2	6.5	63.8	520	59.2	7.2	8.1

NH_4, NO_3, DON, Urea all as N

* = PN by wet digestion method, ** = PN by combustion furnace method.

Detection limits: DRP 0.5; NO_3-N 0.5; NH_4-N 1.0 mg m^{-3}

New Analytical instrument (Flow Injection Analysis) from January 2002, gives greatly improved resolution at low levels.

FIA instrument results are given as a better indication of likely absolute low levels of DRP, NO_3-N, and NH_4-N below nominal detection limit.

Lake Taupo biannual nutrient database **2009-2010** Started 27 October 1994

Collection date 9 October 2009 Secchi depth = 13.0 m

Code	Depth	pH	EC @25oC	Temp	DO	SS	VSS	Chlor_*a*	DRP	DOP	PP	TP	NH_4-N	NO_3-N	DON	UREA	PN*	TN	DOC	PC	PN**
	m		mS cm^{-1}	ºC	g m^{-3}	g m^{-3}	g m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}
OT1	1	7.89	118	11.72	11.67	0.6	<0.5	0.3	4.0	<0.5	2.0	6.0	0.8	<0.5	36.0	3	13.2	50.2	553	227.0	18.4
OT2	10	7.87	121	11.25	12.13	0.7	<0.5	0.5	3.5	<0.5	2.2	5.7	0.5	<0.5	39.3	<1	14.0	54.0	538	267.0	20.2
OT3	20	7.78	120	11.24	11.79	0.6	<0.5	0.5	3.8	<0.5	2.2	6.0	0.2	<0.5	33.6	1	14.7	48.7	531	288.0	24.1
OT4	30	7.87	120	11.20	11.78	0.6	<0.5	0.5	4.0	<0.5	2.4	6.4	0.4	<0.5	31.4	1	14.4	46.4	531	264.0	21.3
OT5	40	7.86	120	10.98	11.24	0.6	<0.5	0.6	4.2	<0.5	2.0	6.2	0.4	<0.5	25.4	2	12.3	38.3	522	312.0	18.4
OT6	50	7.73	121	10.67	11.10	<0.5	<0.5	0.7	4.6	<0.5	2.0	6.6	1.0	<0.5	34.8	2	12.1	48.1	521	214.2	18.5
OT7	60	7.65	121	10.58	10.10	<0.5	<0.5	0.6	4.6	<0.5	1.7	6.3	0.9	<0.5	28.9	<1	11.2	41.2	508	161.6	17.4
OT8	70	7.70	121	10.53	10.02	<0.5	<0.5	0.5	4.6	<0.5	1.9	6.5	0.8	1.2	34.0	1	10.2	46.2	505	88.9	22.7
OT9	80	7.67	121	10.50	9.70	<0.5	<0.5	0.5	5.1	<0.5	1.7	6.8	0.8	2.7	30.5	1	9.9	43.9	514	129.3	10.3
OT10	90	7.62	122	10.49	9.72	<0.5	<0.5	0.4	4.9	<0.5	1.4	6.3	0.9	4.7	40.4	2	8.2	54.2	493	121.1	9.4
OT11	100	7.61	121	10.47	9.51	<0.5	<0.5	0.4	5.2	<0.5	1.5	6.7	0.5	7.3	44.2	1	8.1	60.1	493	117.6	8.6
OT12	110	7.62	121	10.46	9.50	<0.5	<0.5	0.2	5.7	<0.5	1.2	6.9	0.8	7.6	34.6	1	7.5	50.5	494	105.6	10.4
OT13	120	7.55	122	10.44	9.20	<0.5	<0.5	0.3	5.5	<0.5	7.7	13.2	0.6	9.3	37.1	2	8.1	55.1	517	114.7	9.1
OT14	130	7.62	122	10.43	9.18	<0.5	<0.5	0.3	5.9	<0.5	1.7	7.6	0.5	12.2	31.3	<1	9.6	53.6	504	125.3	10.1
OT15	140	7.41	122	10.41	8.82	<0.5	<0.5	0.3	6.5	<0.5	1.7	8.2	1.7	13.6	29.7	1	9.0	54.0	503	149.9	13.8
OT16	150	7.71	120	10.41	8.79	<0.5	<0.5	0.5	3.4	0.6	1.6	5.6	0.4	1.0	30.6	1	10	42.0	491	135.0	12.2

Collection date 8 April 2010 Secchi depth = 21.5 m

Code	Depth	pH	EC @25oC	Temp	DO	SS	VSS	Chlor_*a*	DRP	DOP	PP	TP	NH_4-N	NO_3-N	DON	UREA	PN*	TN	DOC	PC	PN**
	m		mS cm^{-1}	ºC	g m^{-3}	g m^{-3}	g m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}
YZ1	1	7.76	115	17.36	9.48	1.0	<0.5	0.7	0.8	1.2	3.2	5.2	0.0	0.3	69.7	8	19.6	89.6	893	173.0	21.2
YZ2	10	7.78	119	17.35	10.17	<0.5	<0.5	0.6	0.8	1.2	1.6	3.6	0.0	0.2	50.8	<2	11.5	62.5	814	142.5	16.8
YZ3	20	7.83	118	17.35	9.66	0.6	<0.5	0.7	0.8	2.2	1.4	4.4	1.9	0.2	38.9	<2	12.8	53.8	683	121.5	14.2
YZ4	30	7.79	120	17.34	9.43	<0.5	<0.5	0.6	1.1	0.9	1.4	3.4	0.8	0.0	40.2	<2	12.2	53.2	710	115.0	12.6
YZ5	40	7.74	119	12.28	9.04	<0.5	<0.5	1.4	1.0	2.0	1.9	4.9	0.7	0.1	36.2	<2	16.0	53.0	593	117.0	23.8
YZ6	50	7.71	120	11.19	8.57	<0.5	<0.5	1.4	2.2	0.8	1.4	4.4	0.7	0.5	32.8	<2	11.5	45.5	545	88.1	9.4
YZ7	60	7.61	121	10.82	8.31	<0.5	<0.5	0.8	2.2	0.8	1.1	4.1	0.0	0.6	31.4	<2	7.6	39.6	496	53.5	7.7
YZ8	70	7.59	121	10.67	8.11	<0.5	<0.5	0.4	4.4	0.6	0.6	5.6	0.0	7.7	28.3	<2	4.7	40.7	525	62.2	6.4
YZ9	80	7.52	121	10.62	7.97	<0.5	<0.5	0.3	5.2	0.8	0.6	6.6	0.0	16.8	28.2	<2	4.0	49.0	491	43.3	6.3
YZ10	90	7.55	121	10.60	7.74	<0.5	<0.5	0.2	6.2	0.8	0.6	7.6	0.0	20.8	29.2	<2	3.9	53.9	496	42.1	10.1
YZ11	100	7.53	122	10.57	7.43	<0.5	<0.5	0.2	7.2	0.0	0.6	7.8	0.0	23.8	27.2	<2	3.5	54.5	491	38.2	7.8
YZ12	110	7.53	121	10.57	7.27	<0.5	<0.5	0.2	6.5	0.5	0.5	7.5	0.0	24.3	24.7	<2	2.9	51.9	481	26.7	5.9
YZ13	120	7.46	122	10.55	7.11	<0.5	<0.5	0.2	8.3	0.7	0.9	9.9	0.0	29.4	28.6	<2	6.0	64.0	505	43.6	7.3
YZ14	130	7.68	122	10.53	7.09	<0.5	<0.5	0.2	10.1	0.0	1.1	11.2	0.0	31.5	34.5	<2	5.6	71.6	519	43.2	8.1
YZ15	140	7.4	122	10.53	6.82	<0.5	<0.5	0.1	9.3	5.7	1.0	16.0	0.0	33.3	37.7	<2	5.3	76.3	517	48.2	6.6
YZ16	150	7.4	122	10.53	6.75	<0.5	<0.5	0.2	10.4	0.6	1.4	12.4	0.0	33.4	29.6	<2	6.6	69.6	514	49.5	8.5

NH_4, NO_3, DON, Urea all as N

* = PN by wet digestion method, ** = PN by combustion furnace method.

Detection limits: DRP 0.5; NO_3-N 0.5; NH_4-N 1.0 mg m^{-3}

New Analytical instrument (Flow Injection Analysis) from January 2002, gives greatly improved resolution at low levels.

FIA instrument results are given as a better indication of likely absolute low levels of DRP, NO_3-N, and NH_4-N below nominal detection limit.

Lake Taupo biannual nutrient database **2008-2009** Started 27 October 1994

Collection date 14 October 2008 Secchi depth = 12.2 m

Code	Depth	pH	EC @25oC	Temp	DO	SS	VSS	Chlor_*a*	DRP	DOP	PP	TP	NH_4-N	NO_3-N	DON	UREA	PN*	TN	DOC	PC	PN**
	m		mS cm^{-1}	^{o}C	g m^{-3}	g m^{-3}	g m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}
SZ1	1	7.66	119	12.59	10.29	1.1	<0.5	0.7	1.0	2.0	4.2	7.2	4.1	0.0	70.9		26.1	101.1	816	235.0	24.6
SZ2	10	7.70	121	12.09	10.29	0.7	<0.5	0.8	0.6	2.4	3.9	6.9	0.1	0.0	39.9		18.7	58.7	690	169.5	23.5
SZ3	20	7.70	121	11.93	10.50	0.8	<0.5	0.8	0.7	2.3	7.8	10.8	0.0	0.0	59.0		32.7	91.7	638	250.0	33.1
SZ4	30	7.70	120	11.85	10.46	1.0	0.6	0.7	0.7	2.3	5.6	8.6	0.0	0.0	65.0		24.2	89.2	632	195.5	31.8
SZ5	40	7.70	120	11.75	10.34	0.7	<0.5	0.9	0.3	1.7	4.6	6.6	0.0	0.0	52.0		16.2	68.2	597	162.5	15.5
SZ6	50	7.69	120	11.59	10.05	0.5	<0.5	0.9	0.4	2.6	4.5	7.5	0.5	0.0	48.5		15.6	64.6	602	139.5	29.2
SZ7	60	7.56	120	10.90	9.89	0.8	0.5	0.8	1.0	2.0	5.0	8.0	0.7	1.6	69.7		16.7	88.7	603	94.0	18.2
SZ8	70	7.52	121	10.76	9.86	0.6	<0.5	0.6	1.2	1.8	3.6	6.6	0.0	2.6	45.4		20.4	68.4	593	77.2	16.8
SZ9	80	7.45	122	10.71	9.81	0.7	<0.5	0.4	1.3	2.7	3.1	7.1	0.0	4.7	36.3		9.5	50.5	589	61.8	25.9
SZ10	90	7.49	121	10.69	9.85	0.7	<0.5	0.3	1.8	0.2	2.3	4.3	0.0	5.7	29.3		9.7	44.7	561	57.5	9.1
SZ11	100	7.23	121	10.68	10.03	0.6	<0.5	0.2	1.5	0.5	2.5	4.5	2.2	6.6	33.2		9.2	51.2	605	71.8	23.1
SZ12	110	7.32	121	10.66	10.13	<0.5	<0.5	0.3	1.5	1.5	2.2	5.2	3.5	7.4	33.1		8.0	52.0	617	46.8	10.6
SZ13	120	7.36	122	10.64	10.09	0.7	<0.5	0.2	1.2	2.8	2.5	6.5	1.6	9.5	34.9		9.9	55.9	613	57.6	28.5
SZ14	130	7.45	121	10.60	9.83	0.8	<0.5	0.2	2.6	0.4	2.1	5.1	1.6	11.7	34.7		7.5	55.5	652	56.6	27.2
SZ15	140	7.43	120	10.59	9.76	<0.5	<0.5	<0.1	2.9	3.1	2.5	8.5	1.4	17.1	37.5		8.7	64.7	686	46.6	24.1
SZ16	150	7.40	121	10.59	9.85	<0.5	<0.5	0.2	2.7	2.3	3.5	8.5	2.3	17.3	39.4		11.0	70.0	656	68.9	23.5

Collection date 15 April 2009 Secchi depth = 18.0 m

Code	Depth	pH	EC @25oC	Temp	DO	SS	VSS	Chlor_*a*	DRP	DOP	PP	TP	NH_4-N	NO_3-N	DON	UREA	PN*	TN	DOC	PC	PN**
	m		mS cm^{-1}	^{o}C	g m^{-3}	g m^{-3}	g m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}
EU1	1	7.89	123	16.60	9.33	<0.5	<0.5	0.7	1.1	0.9	1.7	3.7	4.3	1.4	74.3	17	16.7	96.7	834	187.0	19.2
EU2	10	7.84	122	16.59	10.11	<0.5	<0.5	0.8	1.3	1.7	2.0	5.0	0.1	0.0	26.9	<1	13.1	40.1	669	116.0	16.2
EU3	20	7.83	121	16.59	10.76	<0.5	<0.5	0.9	1.2	2.8	2.0	6.0	0.3	0.0	29.7	1	17.2	47.2	691	152.0	18.4
EU4	30	7.84	123	16.58	10.83	<0.5	<0.5	0.9	0.9	3.1	1.8	5.8	0.8	0.0	38.2	2	15.8	54.8	650	143.0	19.1
EU5	40	7.8	121	12.53	10.39	<0.5	<0.5	1.0	1.4	6.6	1.5	9.5	0.7	0.1	37.3	1	13.0	51.1	627	81.9	13.2
EU6	50	7.79	121	11.56	9.58	<0.5	<0.5	0.7	2.2	3.8	1.2	7.2	0.0	2.0	20.0	<1	9.3	31.3	574	79.5	12.1
EU7	60	7.58	122	11.12	9.06	<0.5	<0.5	0.5	3.9	3.1	1.2	8.2	0.0	8.5	24.5	2	7.4	40.4	581	68.6	11.6
EU8	70	7.49	123	10.98	8.84	<0.5	<0.5	0.3	5.5	4.5	1.1	11.1	0.7	18.7	14.6	2	8.7	42.7	553	59.6	15.2
EU9	80	7.03	124	10.92	8.21	<0.5	<0.5	0.2	6.6	6.4	1.2	14.2	0.0	24.5	26.5	<1	9.3	60.3	635	51.7	11.8
EU10	90	7.03	124	10.88	8.24	12	12	0.1	7.2	2.8	1.1	11.1	0.0	27.0	16.0	1	6.7	49.7	514	46.6	9.4
EU11	100	7.16	123	10.86	8.07	<0.5	<0.5	0.1	6.3	5.7	0.9	12.9	0.0	24.7	32.3	1	5.1	62.1	554	35.9	8.8
EU12	110	7.21	124	10.84	8.12	<0.5	<0.5	0.1	7.0	4	1.0	12.0	0.2	26.3	12.5	<1	6.9	45.9	562	42.7	10.1
EU13	120	7.2	123	10.82	8.02	<0.5	<0.5	0.1	7.1	4.9	1.0	13.0	0.2	26.8	25.0	4	6.8	58.8	549	53.7	10.1
EU14	130	7.61	123	10.79	8.15	<0.5	<0.5	<0.1	7.6	8.4	1.0	17.0	0.0	27.6	<1	2	7.2	34.8	562	45.4	11.8
EU15	140	7.23	122	10.78	8.01	<0.5	<0.5	<0.1	8.1	4.9	1.1	14.1	0.0	29.0	8.0	<1	7.3	44.3	661	50.3	9.8
EU16	150	7.22	122	10.78	7.55	<0.5	<0.5	<0.1	9.0	2	1.3	12.3	1.3	30.6	21.1	1	7.1	60.1	544	42.8	12.7

NH_4, NO_3, DON, Urea all as N

* = PN by wet digestion method, ** = PN by combustion furnace method.

Detection limits: DRP 0.5; NO_3-N 0.5; NH_4-N 1.0 mg m^{-3}

New Analytical instrument (Flow Injection Analysis) from January 2002, gives greatly improved resolution at low levels.

FIA instrument results are given as a better indication of likely absolute low levels of DRP, NO_3-N, and NH_4-N below nominal detection limit.

Lake Taupo biannual nutrient database **2007-2008** Started 27 October 1994

Collection date 30 October 2007 Secchi depth = 12.8 m

Code	Depth	pH	EC @25oC	Temp	DO	SS	VSS	Chlor_*a*	DRP	DOP	PP	TP	NH_4-N	NO_3-N	DON	UREA	PN*	TN	DOC	PC	PN**
	m		mS cm^{-1}	°C	g m^{-3}	g m^{-3}	g m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}
ZA1	1	7.80	119	12.84	10.18	0.7	<0.5	0.6	1.3	0.7	2.1	4.1	1.5	0.7	79.8	16	20.1	102.1	617	170.0	19.2
ZA2	10	7.83	120	11.83	10.27	<0.5	<0.5	1.0	0.9	1.1	2.5	4.5	0.0	0.0	42.0	<5	18.5	60.5	553	204.0	19.8
ZA3	20	7.79	115	11.76	10.25	0.5	<0.5	1.1	1.1	0.9	2.6	4.6	0.2	0.0	42.8	<5	19.0	62.0	405	169.0	19.4
ZA4	30	7.76	119	11.70	10.07	0.7	<0.5	1.2	0.8	1.2	2.5	4.5	0.0	0.0	49.0	<5	19.1	68.1	417	173.5	19.0
ZA5	40	7.72	120	11.64	10.02	0.7	<0.5	1.1	1.0	1.0	2.6	4.6	0.0	0.0	36.0	<5	16.8	52.8	417	131.5	17.4
ZA6	50	7.61	121	11.51	9.85	0.8	<0.5	1.4	0.9	1.1	3.3	5.3	0.0	0.0	39.0	<5	18.3	57.3	434	140.0	18.1
ZA7	60	7.54	120	11.43	9.52	0.9	<0.5	1.4	1.2	0.8	2.7	4.7	0.2	0.0	32.8	<5	19.5	52.5	414	127.5	17.1
ZA8	70	7.46	123	11.32	9.77	0.8	<0.5	1.5	1.5	0.5	2.7	4.7	0.1	0.3	46.6	<5	19.1	66.1	443	130.0	19.0
ZA9	80	7.42	122	11.23	9.58	0.8	<0.5	1.1	1.9	1.1	2.1	5.1	0.4	2.6	41.0	5	15.8	59.8	422	95.8	14.4
ZA10	90	7.42	121	11.16	9.42	0.7	<0.5	0.9	2.1	0.9	2.1	5.1	0.3	4.8	42.9	<5	13.3	61.3	410	92.0	13.0
ZA11	100	7.38	122	11.07	9.49	<0.5	<0.5	0.7	2.8	0.2	1.8	4.8	0.0	8.5	36.5	<5	11.2	56.2	400	64.0	11.0
ZA12	110	7.40	122	11.04	9.16	0.7	<0.5	0.7	2.9	0.1	1.8	4.8	0.0	9.2	56.8	<5	11.6	77.6	386	68.3	11.1
ZA13	120	7.38	122	11.02	9.27	0.7	<0.5	0.6	2.8	1.2	2.1	6.1	0.0	10.0	46.0	<5	12.7	68.7	359	105.3	12.5
ZA14	130	7.44	120	11.00	9.01	0.6	<0.5	0.6	2.6	1.4	1.9	5.9	0.0	10.4	35.6	<5	10.9	56.9	348	61.8	10.5
ZA15	140	7.44	121	10.98	9.11	0.6	<0.5	0.6	3.0	0.0	1.7	4.7	0.0	10.8	39.2	<5	10.3	60.3	351	64.1	11.2
ZA16	150	7.42	121	10.96	8.91	<0.5	<0.5	0.6	3.5	1.5	1.8	6.8	0.0	13.3	38.7	<5	10.8	62.8	305	63.1	10.6

Collection date 17 April 2008 Secchi depth = 17.8 m

Code	Depth	pH	EC @25oC	Temp	DO	SS	VSS	Chlor_*a*	DRP	DOP	PP	TP	NH_4-N	NO_3-N	DON	UREA	PN*	TN	DOC	PC	PN**
	m		mS cm^{-1}	°C	g m^{-3}	g m^{-3}	g m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}
KA1	1	7.79	122	17.88	9.49	<0.5	<0.5	0.4	0.8	0.2	0.7	1.7	2.8	0.4	64.8	14	13.3	81.3	656	138.5	8.4
KA2	10	7.87	121	17.87	8.97	<0.5	<0.5	0.8	0.5	0.5	0.7	1.7	1.1	0.3	48.6	<5	12.0	62.0	576	112.5	8.3
KA3	20	7.83	124	17.85	8.46	<0.5	<0.5	0.8	0.9	0.1	0.8	1.8	0.4	0.3	38.3	<5	13.7	52.7	528	142.0	9.4
KA4	30	7.71	122	15.58	8.52	<0.5	<0.5	0.5	1.0	0.0	0.9	1.9	3.1	0.1	27.8	<5	10.9	41.9	526	110.0	9.1
KA5	40	7.58	121	12.38	8.72	<0.5	<0.5	0.6	1.7	1.3	0.8	3.8	1.8	0.8	36.4	<5	14.6	53.6	459	107.0	6.7
KA6	50	7.38	121	11.72	8.48	<0.5	<0.5	0.5	1.9	2.1	0.6	4.6	0.2	3.4	29.4	<5	10.2	43.2	417	75.1	6.1
KA7	60	7.36	122	11.48	8.20	<0.5	<0.5	0.4	3.5	0.5	0.8	4.8	0.6	5.3	32.1	<5	9.6	47.6	353	84.9	6.7
KA8	70	7.31	122	11.34	7.84	<0.5	<0.5	0.3	3.5	1.5	0.7	5.7	0.9	10.8	42.3	<5	10.7	64.7	481	85.4	6.8
KA9	80	7.25	122	11.27	7.71	<0.5	<0.5	0.2	4.2	0.8	1.2	6.2	0.4	14.7	82.9	<5	9.5	107.5	347	97.5	4.9
KA10	90	7.19	122	11.20	7.57	<0.5	<0.5	0.1	5.1	0.0	0.7	5.8	0.3	19.8	43.9	<5	10.2	74.2	370	107.0	5.4
KA11	100	7.18	122	11.17	7.45	<0.5	<0.5	0.1	4.6		0.6	5.2	0.6	21.2	30.2	<5	8.6	60.6	412	59.8	4.0
KA12	110	7.12	123	11.14	7.29	<0.5	<0.5	<0.1	5.0	1.0	0.6	6.6	0.8	28.2	26.0	<5	4.5	59.5	346	44.6	3.3
KA13	120	7.07	123	11.15	7.29	0.6	<0.5	<0.1	7.4	0.0	0.8	8.2	0.1	30.2	29.7	<5	7.9	67.9	373	85.8	5.8
KA14	130	7.28	123	11.12	7.18	<0.5	<0.5	<0.1	5.6	1.4	0.8	7.8	1.1	29.5	26.4	<5	9.0	66.0	395	89.1	4.4
KA15	140	7.12	123	11.11	7.13	<0.5	<0.5	<0.1	8.4	1.6	1.5	11.5	1.1	36.8	27.1	<5	8.5	73.5	393	72.6	4.1
KA16	150	7.11	123	11.11	6.72	<0.5	<0.5	<0.1	8.3	0.7	1.5	10.5	0.4	36.4	27.2	<5	7.2	71.2	379	98.8	4.1

NH_4, NO_3, DON, Urea all as N * = PN by wet digestion method, ** = PN by combustion furnace method.

Detection limits: DRP 0.5; NO_3-N 0.5; NH_4-N 1.0 mg m^{-3}

New Analytical instrument (Flow Injection Analysis) from January 2002, gives greatly improved resolution at low levels.

FIA instrument results are given as a better indication of likely absolute low levels of DRP, NO_3-N, and NH_4-N below nominal detection limit.

Collection date 1 November 2006 Secchi depth = 14.5 m

Code	Depth	pH	EC @25oC	Temp	DO	SS	VSS	Chlor_*a*	DRP	DOP	PP	TP	NH_4-N	NO_3-N	DON	UREA	PN*	TN	DOC	PC	PN**
	m		mS cm^{-1}	°C	g m^{-3}	g m^{-3}	g m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}
HW1	1	7.79	118	12.43	10.2	0.5	<0.5	0.5	1.2	0.0	1.7	2.9	0.1	1.0	75.9		13.6	90.6	413	168.0	15.4
HW2	10	7.77	119	12.27	10.1	0.8	<0.5	0.6	1.0	0.0	1.9	2.9	0.0	0.1	61.9		13.8	75.8	419	187.0	13.8
HW3	20	7.77	120	12.25	10.1	0.7	<0.5	0.7	0.9	1.1	2.3	4.3	0.0	0.1	32.9		17.8	50.8	373	209.5	17.4
HW4	30	7.81	119	12.20	10.1	0.8	<0.5	0.6	1.0	0.0	2.7	3.7	0.3	0.0	38.7		22.3	61.3	456	215.5	18.1
HW5	40	7.78	119	12.10	10.1	0.9	<0.5	0.6	1.1	0.9	2.2	4.2	0.0	0.1	30.9		17.9	48.9	368	227.5	19.8
HW6	50	7.74	119	11.96	10.0	0.6	<0.5	0.7	1.2	0.0	1.9	3.1	0.0	0.2	29.8		14.0	44.0	468	169.0	13.9
HW7	60	7.67	120	11.34	9.7	0.7	<0.5	1.1	1.5	0.0	1.8	3.3	0.6	0.1	31.3		13.9	45.9	411	123.5	13.5
HW8	70	7.64	119	11.17	9.5	<0.5	<0.5	1.3	1.2	1.8	2.0	5.0	0.5	0.1	29.4		14.5	44.5	378	98.0	12.3
HW9	80	7.57	119	11.06	9.4	0.7	<0.5	1.3	1.3	0.7	2.2	4.2	2.5	1.8	27.7		14.1	46.1	330	91.5	11.2
HW10	90	7.56	119	10.99	9.3	<0.5	<0.5	1.3	1.2	0.8	2.2	4.2	2.7	2.3	52.0		14.4	71.4	352	122.5	15.3
HW11	100	7.56	119	10.94	9.3	0.5	<0.5	1.1	1.4	0.0	2.3	3.7	2.9	3.1	43.0		13.4	62.4	378	105.5	13.2
HW12	110	7.50	121	10.91	9.2	<0.5	<0.5	0.9	1.8	0.0	2.3	4.1	3.7	4.6	73.7		14.3	96.3	382	106.5	12.8
HW13	120	7.50	119	10.88	9.1	<0.5	<0.5	0.7	1.8	2.2	2.2	6.2	3.7	5.8	52.5		11.5	73.5	421	87.5	11.5
HW14	130	7.57	120	10.85	9.0	<0.5	<0.5	0.9	1.8	2.2	2.2	6.2	3.3	4.4	38.3		12.0	58.0	354	84.5	11.6
HW15	140	7.50	119	10.84	8.9	0.6	<0.5	0.8	1.4	0.6	2.3	4.3	3.0	4.5	43.5		13.4	64.4	428	110.5	12.9
HW16	150	7.49	120	10.84	8.7	<0.5	<0.5	0.7	2.0	3.0	2.4	7.4	4.7	7.6	52.7		12.8	77.8	368	98.0	10.7

Collection date 3 April 2007 Secchi depth = 19.0 m

Code	Depth	pH	EC @25oC	Temp	DO	SS	VSS	Chlor_*a*	DRP	DOP	PP	TP	NH_4-N	NO_3-N	DON	UREA	PN*	TN	DOC	PC	PN**
	m		mS cm^{-1}	°C	g m^{-3}	g m^{-3}	g m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}
HW17	1	7.94	119	18.04	9.4	<0.5	<0.5	0.7	1.6	2.4	1.4	5.4	4.7	0.9	62.4		14.9	82.9	567	122.0	18.4
HW18	10	8.09	119	18.03	9.5	<0.5	<0.5	0.8	1.1	3.9	1.8	6.8	0.0	0.1	59.9		14.9	74.9	522	317.5	19.2
HW19	20	8.09	119	17.94	9.4	<0.5	<0.5	0.8	1.2	2.8	1.6	5.6	0.0	0.2	65.8		14.8	80.8	498	177.5	16.8
HW20	30	7.95	119	16.72	9.3	<0.5	<0.5	1.2	1.0	4.0	2.0	7.0	0.0	0.1	63.9		17.5	81.5	481	133.0	19.6
HW21	40	7.73	119	13.50	8.9	<0.5	<0.5	1.2	1.8	2.2	1.6	5.6	0.0	0.3	55.7		12.3	68.3	444	76.4	12.1
HW22	50	7.62	120	12.33	8.9	<0.5	<0.5	0.8	1.5	4.5	1.3	7.3	0.1	0.8	53.2		9.0	63.1	419	68.1	10.1
HW23	60	7.54	119	11.65	8.8	<0.5	<0.5	0.7	1.2	3.8	1.5	6.5	0.1	3.4	51.5		7.7	62.7	393	49.9	6.3
HW24	70	7.48	120	11.28	8.8	<0.5	<0.5	0.9	2.0	2.0	1.3	5.3	0.0	9.7	70.2		6.4	86.3	434	68.3	8.6
HW25	80	7.43	115	11.22	8.5	<0.5	<0.5	0.6	2.0	3.0	1.2	6.2	0.0	14.6	52.4		6.4	73.4	436	58.0	8.3
HW26	90	7.39	121	11.11	8.5	<0.5	<0.5	0.3	1.7	3.3	1.0	6.0	0.1	16.3	54.7		7.1	78.2	460	62.7	8.4
HW27	100	7.35	121	11.10	8.2	<0.5	<0.5	0.3	2.5	1.5	1.1	5.1	0.0	19.4	50.5		7.0	76.9	469	48.9	6.7
HW28	110	7.31	121	11.04	8.2	<0.5	<0.5	0.2	2.7	2.3	0.9	5.9	1.5	20.9	47.1		5.9	75.4	437	40.4	7.5
HW29	120	7.32	120	11.04	8.0	<0.5	<0.5	0.2	3.0	2.0	0.9	5.9	0.0	23.8	57.7		4.9	86.4	452	48.5	7.8
HW30	130	7.73	121	11.01	8.1	<0.5	<0.5	0.2	2.7	3.3	0.9	6.9	0.0	24.8	51.2		3.8	79.8	389	42.7	6.7
HW31	140	7.30	118	11.00	7.7	<0.5	<0.5	0.2	3.7	2.3	1.3	7.3	0.0	24.6	47.4		3.8	75.8	413	43.2	6.4
HW32	150	7.25	121	10.99	7.4	<0.5	<0.5	0.2	4.5	3.5	1.6	9.6	0.0	30.5	50.5		6.1	87.1	439	51.7	9.5

NH_4, NO_3, DON, Urea all as N * = PN by wet digestion method, ** = PN by combustion furnace method.

Detection limits: DRP 0.5; NO_3-N 0.5; NH_4-N 1.0 mg m^{-3}

New Analytical instrument (Flow Injection Analysis) from January 2002, gives greatly improved resolution at low levels.

FIA instrument results are given as a better indication of likely absolute low levels of DRP, NO_3-N, and NH_4-N below nominal detection limit.

Lake Taupo biannual nutrient database **2005-2006** Started 27 October 1994

Collection date 25 October 2005 Secchi depth = 15.0 m

Code	Depth m	pH	EC @25oC mS cm^{-1}	Temp ^{o}C	DO g m^{-3}	SS g m^{-3}	VSS g m^{-3}	Chlor_*a* mg m^{-3}	DRP mg m^{-3}	DOP mg m^{-3}	PP mg m^{-3}	TP mg m^{-3}	NH$_4$-N mg m^{-3}	NO$_3$-N mg m^{-3}	DON mg m^{-3}	UREA mg m^{-3}	PN* mg m^{-3}	TN mg m^{-3}	DOC mg m^{-3}	PC mg m^{-3}	PN** mg m^{-3}
QD1	1	7.81	119	13.40	10.1	<0.5	<0.5	0.4	1.0	3.0	1.3	5.3	0.6	0.3	51.1	4	8.5	60.5	613	132.5	11.0
QD2	10	7.88	119	12.88	10.0	0.5	<0.5	0.5	0.7	2.3	1.9	4.9	0.1	0.0	52.9	3	12.8	65.8	623	169.0	13.5
QD3	20	7.74	119	12.17	10.1	0.6	<0.5	0.7	0.6	2.4	2.7	5.7	0.4	0.2	43.4	2	17.0	61.0	625	216.5	20.0
QD4	30	7.77	118	11.65	9.9	0.7	<0.5	0.6	0.6	5.4	2.6	8.6	0.7	0.0	57.3	2	17.3	75.3	566	212.0	16.0
QD5	40	7.68	119	11.49	9.8	<0.5	<0.5	0.9	0.6	3.4	3.1	7.1	0.0	0.2	49.8	2	22.2	72.2	581	229.5	20.5
QD6	50	7.59	119	11.29	9.5	<0.5	<0.5	1.4	0.8	1.2	2.2	4.2	1.4	0.1	35.5	2	15.9	52.9	599	172.5	14.0
QD7	60	7.46	120	11.18	9.2	0.7	<0.5	0.7	1.7	2.3	1.6	5.6	1.7	9.6	41.7	2	9.8	62.8	503	103.5	6.5
QD8	70	7.37	120	11.07	9.0	0.5	<0.5	0.8	1.9	2.1	1.5	5.5	1.6	12.8	56.6	2	9.2	80.2	482	101.5	6.0
QD9	80	7.35	120	11.01	8.8	0.6	<0.5	0.6	2.5	1.5	1.4	5.4	0.6	15.3	30.1	13	9.0	55.0	521	86.5	6.0
QD10	90	7.36	121	10.97	8.8	0.7	<0.5	0.4	2.8	1.2	1.4	5.4	0.3	17.1	47.6	2	7.3	72.3	478	62.5	4.0
QD11	100	7.29	121	10.97	8.6	<0.5	<0.5	0.5	2.8	1.2	1.4	5.4	0.4	17.4	39.2	2	7.8	64.8	476	77.5	4.5
QD12	110	7.34	120	10.94	8.5	<0.5	<0.5	0.5	3.0	1.0	1.3	5.3	1.5	18.7	48.8	2	7.4	76.4	462	92.5	3.0
QD13	120	7.29	121	10.94	8.5	<0.5	<0.5	0.5	2.8	2.2	1.2	6.2	0.8	20.4	42.8	2	6.2	70.2	549		5.0
QD14	130	7.32	120	10.93	8.4	<0.5	<0.5	0.5	2.7	1.3	1.3	5.3	0.1	20.3	35.6	3	5.9	61.9	504	69.5	6.0
QD15	140	7.34	121	10.93	8.4	<0.5	<0.5	0.6	3.0	2.0	1.4	6.4	1.4	20.9	34.7	1	7.8	64.8	352	77.5	6.5
QD16	150	7.26	120	10.92	8.2	<0.5	<0.5	0.5	3.8	1.2	1.5	6.5	0.9	23.5	29.6	3	7.1	61.1	533	66.0	6.0

Collection date 12 April 2006 Secchi depth = 15.8 m

Code	Depth m	pH	EC @25oC mS cm^{-1}	Temp ^{o}C	DO g m^{-3}	SS g m^{-3}	VSS g m^{-3}	Chlor_*a* mg m^{-3}	DRP mg m^{-3}	DOP mg m^{-3}	PP mg m^{-3}	TP mg m^{-3}	NH$_4$-N mg m^{-3}	NO$_3$-N mg m^{-3}	DON mg m^{-3}	UREA mg m^{-3}	PN* mg m^{-3}	TN mg m^{-3}	DOC mg m^{-3}	PC mg m^{-3}	PN** mg m^{-3}
ZD1	1	7.9	119	16.72	9.6	<0.5	<0.5	1.2	1.1	0.9	1.9	3.9	0.0	0.2	50.8	2	19.2	70.2		213.5	19.0
ZD2	10	7.9	118	16.72	9.2	<0.5	<0.5	1.3	0.8	1.2	1.6	3.6	0.0	0.0	38.0	2	16.6	54.6		196.0	13.5
ZD3	20	7.9	116	16.72	9.0	0.5	<0.5	1.1	0.7	0.3	1.3	2.3	0.0	0.0	42.0	<1	15.65	57.7		235.0	15.5
ZD4	30	7.88	120	16.71	9.4	<0.5	<0.5	1.2	0.6	1.4	1.6	3.6	0.1	0.0	50.9	<1	15.45	66.5		172.0	13.5
ZD5	40	7.9	116	16.64	9.2	0.8	0.7	1.3	0.5	1.5	1.55	3.6	0.0	0.0	41.0	2	15.45	56.5		224.5	13.0
ZD6	50	7.6	119	12.11	8.7	<0.5	<0.5	1.0	0.7	2.3	1.2	4.2	0.0	0.1	33.9	8	11.4	45.4		133.0	8.5
ZD7	60	7.43	121	11.52	8.5	<0.5	<0.5	1.0	0.7	2.3	1.05	4.1	0.0	0.5	44.5	2	9.15	54.2		171.5	8.0
ZD8	70	7.49	121	11.31	8.3	<0.5	<0.5	0.9	0.7	2.3	1.15	4.2	0.0	0.7	37.3	6	9.55	47.6		130.5	9.0
ZD9	80	7.9	120	11.18	8.3	<0.5	<0.5	1.1	0.5	2.5	1.4	4.4	0.3	0.0	50.7	5	16.1	67.1		182.0	12.5
ZD10	90	7.31	122	11.11	8.1	<0.5	<0.5	0.2	3.0	1	0.45	4.5	0.0	23.0	28.0	2	4.1	55.1		62.5	6.0
ZD11	100	7.31	122	11.08	8.1	<0.5	<0.5	0.3	3.2	0.8	0.5	4.5	0.1	22.8	24.1	<1	4.95	52.0		68.5	6.5
ZD12	110	7.91	119	11.05	8.0	0.7	0.5	1.1	3.2	1.8	1.5	6.5	0.1	22.2	25.7	3	16.5	64.5		196.0	15.0
ZD13	120	7.42	122	11.03	7.9	<0.5	<0.5	0.3	3.1	1.9	0.5	5.5	0.0	21.6	27.4	<1	5.2	54.2		86.5	7.0
ZD14	130	7.5	121	11.02	7.7	<0.5	<0.5	0.3	3.0	2	0.55	5.6	0.0	19.9	32.1	2	5.45	57.5		69.5	6.5
ZD15	140	7.3	119	11.02	7.3	<0.5	<0.5	0.2	3.4	1.6	0.55	5.6	0.0	23.1	31.9	2	6.5	61.5		87.0	7.5
ZD16	150	7.24	122	11.02	7.2	<0.5	<0.5	0.3	2.9	1.1	0.55	4.6	0.2	21.0	28.8	5	5.85	55.9		77.5	7.0

NH$_4$, NO$_3$, DON, Urea all as N * = PN by wet digestion method, ** = PN by combustion furnace method.

Detection limits: DRP 0.5; NO$_3$-N 0.5; NH$_4$-N 1.0 mg m^{-3}

New Analytical instrument (Flow Injection Analysis) from January 2002, gives greatly improved resolution at low levels.

FIA instrument results are given as a better indication of likely absolute low levels of DRP, NO$_3$-N, and NH$_4$-N below nominal detection limit.

Collection date 21 October 2004 Secchi depth = 15.0 m

Code	Depth m	pH	EC @25oC mS cm^{-1}	Temp ºC	DO g m^{-3}	SS g m^{-3}	VSS g m^{-3}	Chlor_*a* mg m^{-3}	DRP mg m^{-3}	DOP mg m^{-3}	PP mg m^{-3}	TP mg m^{-3}	NH$_4$-N mg m^{-3}	NO$_3$-N mg m^{-3}	DON mg m^{-3}	UREA mg m^{-3}	PN* mg m^{-3}	TN mg m^{-3}	DOC mg m^{-3}	PC mg m^{-3}	PN** mg m^{-3}
VZ1	1	7.88	122	11.75	10.4	0.6	0.5	0.6	1.3	2.7	1.6	5.6	0.1	0.4	39.5	19	9.7	49.7	500	110.0	8
VZ2	10	7.82	120	11.61	10.2	0.8	0.6	0.8	1.1	2.9	2.0	6.0	0.2	0.1	35.7	24	12.8	48.8	447	157.0	8.5
VZ3	20	7.87	120	11.59	10.1	0.9	0.7	0.8	1.0	3.0	1.9	5.9	0.0	0.0	33.0	16	11.3	44.3	440	153.0	8.5
VZ4	30	7.91	123	11.59	10.2	1.5	1.0	0.7	1.0	2.0	1.9	4.9	0.0	0.0	34.0	15	11.3	45.3	490	157.5	8
VZ5	40	7.82	117	11.58	10.1	1.1	0.6	0.7	1.4	3.6	2.0	7.0	0.2	0.1	33.7	7	11.2	45.2	445	155.0	10
VZ6	50	7.83	120	11.58	9.9	1.1	0.7	0.9	1.0	4.0	2.1	7.1	0.0	0.1	33.9	9	13.2	47.2	494	197.5	15
VZ7	60	7.79	119	11.15	9.9	1.1	0.7	1.0	1.6	2.4	2.3	6.3	0.5	0.4	34.1	11	26.0	61.0	585	167.0	16
VZ8	70	7.66	118	10.79	9.7	0.7	0.5	1.0	1.9	1.1	1.9	4.9	2.4	0.8	40.8	21	11.5	55.5	468	114.0	11.5
VZ9	80	7.63	118	10.74	9.6	0.6	<0.5	0.9	2.0	1.0	1.7	4.7	2.8	1.3	47.9	16	8.9	60.9	440	103.0	9.5
VZ10	90	7.61	119	10.72	9.5	0.6	<0.5	0.7	2.0	2.0	1.6	5.6	3.9	2.2	28.9	9	9.1	44.1	633	100.5	10
VZ11	100	7.53	118	10.70	9.4	0.7	0.5	0.7	2.3	1.7	1.5	5.5	5.1	3.6	34.3	7	9.0	52.0	570	93.0	10
VZ12	110	7.56	119	10.68	9.4	0.5	<0.5	0.7	2.0	5.0	1.6	8.6	5.3	2.8	28.9	9	9.2	46.2	514	101.5	9
VZ13	120	7.49	119	10.66	9.3	0.5	<0.5	0.7	2.1	1.9	1.5	5.5	5.3	3.9	35.8	6	8.5	53.5	391	91.5	11
VZ14	130	7.48	118	10.65	9.3	<0.5	<0.5	0.6	2.5	1.5	1.6	5.6	5.8	5.3	34.9	5	8.6	54.6	366	73.5	8.5
VZ15	140	7.58	118	10.61	9.2	<0.5	<0.5	0.6	2.9	1.1	1.6	5.6	5.9	7.3	33.8	13	9.1	56.1	491	93.5	10.5
VZ16	150	7.58	119	10.56	9.1	<0.5	<0.5	0.6	2.4	1.6	1.5	5.5	4.5	3.3	35.2	21	8.7	51.7	464	78.0	9

Collection date 14 April 2005 Secchi depth = 17.2 m

Code	Depth m	pH	EC @25oC mS cm^{-1}	Temp ºC	DO g m^{-3}	SS g m^{-3}	VSS g m^{-3}	Chlor_*a* mg m^{-3}	DRP mg m^{-3}	DOP mg m^{-3}	PP mg m^{-3}	TP mg m^{-3}	NH$_4$-N mg m^{-3}	NO$_3$-N mg m^{-3}	DON mg m^{-3}	UREA mg m^{-3}	PN* mg m^{-3}	TN mg m^{-3}	DOC mg m^{-3}	PC mg m^{-3}	PN** mg m^{-3}
GC1	1	7.85	119	17.92	9.1	0.4	0.4	0.7	0.8	1.2	1.9	3.9	1.2	0.2	64.6	7	15.1	81.1	690	176.0	19.0
GC2	10	7.86	118	17.96	9.0	0.3	0.4	0.9	0.8	2.2	1.9	4.9	0.0	0.0	46	3	14.1	60.1	580	199.5	19.0
GC3	20	7.9	119	17.95	9.0	0.3	0.3	0.9	0.8	2.2	2.0	5.0	0.0	0.1	55.9	1	14.5	70.5	580	179.0	17.0
GC4	30	7.82	118	15.13	8.4	0.3	0.3	0.9	0.8	2.2	1.8	4.8	0.0	0.3	49.7	2	12.8	62.8	570	176.5	17.0
GC5	40	7.58	121	12.92	8.7	0.2	0.2	0.8	2.3	0.7	1.2	4.2	0.3	0.6	31.1	2	8.9	40.9	510	109.5	14.0
GC6	50	7.51	120	12.00	8.3	0.1	0.1	0.6	3.1	0.9	1.0	5.0	0.0	6.4	39.6	3	6.8	52.8	480	84.0	9.0
GC7	60	7.47	121	11.33	8.2	0.1	0.1	0.5	3.6	1.4	1.1	6.1	0.0	8.3	40.7	2	8.2	57.2	510	78.5	7.5
GC8	70	7.48	120	10.99	8.2	0.1	0.1	0.3	4.2	0.8	0.9	5.9	0.0	15.7	38.3	2	6.5	60.5	490	96.0	7.0
GC9	80	7.39	121	10.88	8.2	0.2	0.2	0.3	3.8	0.2	0.8	4.8	0.1	15.7	36.2	1	4.3	56.3	480	72.5	7.5
GC10	90	7.21	121	10.82	8.3	0.0	0.1	0.1	5.6	1.4	0.9	7.9	0.2	23.8	38	2	5.6	67.6	480	64.0	7.0
GC11	100	7.31	121	10.78	8.0	0.0	0.1	0.1	5.7	1.3	0.8	7.8	0.2	23.6	53.2	2	5.0	82.0	460	78.5	7.0
GC12	110	7.32	121	10.76	7.8	0.1	0.1	0.1	5.7	1.3	0.8	7.8	0.0	25.9	47.1	2	5.6	78.6	470	43.5	6.0
GC13	120	7.33	121	10.76	7.7	0.1	0.1	<0.1	6.4	1.6	0.8	8.8	0.3	26.8	37.9	1	4.9	69.9	450	56.0	6.5
GC14	130	7.33	121	10.74	7.7	0.1	0.1	<0.1	6.1	0	0.8	6.8	0.3	26.7	57	1	4.4	88.4	470	43.5	5.5
GC15	140	7.34	121	10.74	7.6	0.1	0.1	<0.1	6.6	0.4	0.9	7.9	0.2	28.8	39	2	5.8	73.8	490	54.5	6.0
GC16	150	7.36	121	10.72	7.5	0.3	0.1	0.1	7.8	0.2	1.1	9.1	0.0	32.1	51.9	1	6.9	90.9	490	46.0	7.5

NH$_4$, NO$_3$, DON, Urea all as N

* = PN by wet digestion method, ** = PN by combustion furnace method.

Detection limits: DRP 0.5; NO$_3$-N 0.5; NH$_4$-N 1.0 mg m^{-3}

New Analytical instrument (Flow Injection Analysis) from January 2002, gives greatly improved resolution at low levels.

FIA instrument results are given as a better indication of likely absolute low levels of DRP, NO$_3$-N, and NH$_4$-N below nominal detection limit.

Lake Taupo biannual nutrient database 2003-2004 Started 27 October 1994

Collection date 19 November 2003 Secchi depth = 16.0 m

Code	Depth	pH	EC @25oC	Temp	DO	SS	VSS	Chlor_*a*	DRP	DOP	PP	TP	NH$_4$-N	NO$_3$-N	DON	UREA	PN*	TN	DOC	PC	PN**
	m		mS cm^{-1}	^{o}C	g m^{-3}	g m^{-3}	g m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}
EU1	1	7.84	119	13.96	9.9	<0.5	<0.5	0.8	1.7	2.3	2.3	6.3	8.0	0.8	42.2	1	14.8	65.8	476	90.5	10.5
EU2	10	7.84	120	13.79	9.9	<0.5	<0.5	0.9	1.6	1.4	2.5	5.5	0.3	0.3	52.4	1	14.4	67.4	461	147.5	15.0
EU3	20	7.83	120	13.78	9.8	<0.5	<0.5	0.7	1.8	1.2	3.4	6.4	0.4	0.1	46.5	1	19.4	66.4	466	151.0	20.5
EU4	30	7.84	120	13.70	9.5	<0.5	<0.5	0.9	1.8	2.2	3.8	7.8	0.4	0.3	42.3	1	26.3	69.3	450	133.0	18.5
EU5	40	7.69	120	12.30	9.3	<0.5	<0.5	1.5	2.6	1.4	3.3	7.3	0.7	0.2	35.1	1	20.6	56.6	437	133.0	17.0
EU6	50	7.63	121	11.35	9.0	<0.5	<0.5	1.2	2.8	1.2	1.9	5.9	0.4	0.5	37.1	1	11.9	49.9	470	92.5	11.0
EU7	60	7.58	121	11.28	8.9	<0.5	<0.5	0.7	3.3	0.7	1.5	5.5	1.0	3.2	27.8	2	9.6	41.6	503	69.5	8.0
EU8	70	7.59	121	11.23	8.7	<0.5	<0.5	0.6	3.5	0.5	1.1	5.1	3.4	4.8	25.8	1	6.2	40.2	465	47.0	<6
EU9	80	7.6	121	11.19	8.6	<0.5	<0.5	0.5	3.6	0.4	1.1	5.1	0.6	5.9	29.5	2	5.1	41.1	430	65.0	<6
EU10	90	7.57	121	11.16	8.6	<0.5	<0.5	0.5	3.9	0.1	1.2	5.2	1.0	7.0	27	3	6.4	41.4	391	39.5	<6
EU11	100	7.59	121	11.15	8.6	<0.5	0.7	0.4	4.1	0.9	1.2	6.2	0.8	7.8	33.4	2	4.0	46.0	405	46.5	<6
EU12	110	7.6	121	11.12	8.4	<0.5	<0.5	0.4	4.1	0.9	1.1	6.1	1.1	11.8	29.1	3	3.4	45.4	428	45.5	<6
EU13	120	7.57	120	11.11	8.4	<0.5	<0.5	0.4	4.6	0.4	1.2	6.2	0.7	13.6	32.7	2	3.0	50.0	439	37.0	<6
EU14	130	7.53	121	11.09	8.3	<0.5	<0.5	0.3	5.1	0.4	1.2	6.7	0.8	16.1	32.7	3	3.7	53.3	408	33.0	<6
EU15	140	7.57	121	11.09	8.2	<0.5	<0.5	0.3	5.3	0.7	1.2	7.2	0.4	18.1	32.5	3	5.1	56.1	440	54.5	<6
EU16	150	7.54	120	11.09	8.0	0.5	<0.5	0.5	5.6	1.4	1.5	8.5	2.4	20.7	32.9	4	6.4	62.4	481	44.0	<6

Collection date 31 March 2004 Secchi depth = 16.0 m

Code	Depth	pH	EC @25oC	Temp	DO	SS	VSS	Chlor_*a*	DRP	DOP	PP	TP	NH$_4$-N	NO$_3$-N	DON	UREA	PN*	TN	DOC	PC	PN**
	m		mS cm^{-1}	^{o}C	g m^{-3}	g m^{-3}	g m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}
MB1	1	7.86	118	16.49	9.2	<0.5	<0.5	0.7	0.9	4.1	1.4	6.4	1	0	69	-	9.7	79.7	622	91.0	-
MB2	10	7.83	118	16.29	9.1	<0.5	<0.5	1.2	0.5	3.5	2.0	6.0	0	0	47	-	12.4	59.4	548	141.5	17.0
MB3	20	7.83	118	16.23	9.0	<0.5	<0.5	1.1	0.6	3.4	2.1	6.1	1	0.2	47.8	-	14.8	63.8	561	140.5	17.0
MB4	30	7.83	118	16.19	9.0	<0.5	<0.5	1.1	0.8	3.2	1.9	5.9	1	0.2	50.8	-	13.5	65.5	749	131.5	15.5
MB5	40	7.66	118	16.15	8.9	<0.5	<0.5	0.9	1.5	1.5	1.9	4.9	1	2.8	71.2	-	11.6	86.6	560	114.5	14.0
MB6	50	7.46	120	12.51	8.2	<0.5	<0.5	0.5	3.3	2.7	1.5	7.5	1	12.1	58.9	-	7.2	79.2	467	109.0	7.5
MB7	60	7.41	121	11.59	8.0	<0.5	<0.5	0.3	4.7	2.3	1.0	8.0	1	18.0	41	-	4.2	64.2	394	54.5	7.0
MB8	70	7.36	121	11.40	8.0	<0.5	<0.5	0.2	4.5	1.5	0.8	6.8	1	19.1	36.9	-	3.7	60.7	404	45.0	<4
MB9	80	7.42	121	11.34	8.0	<0.5	<0.5	0.2	5.0	1.0	0.8	6.8	1	20.2	31.8	-	5.3	58.3	464	41.0	<4
MB10	90	7.36	121	11.30	7.9	<0.5	<0.5	0.1	5.2	1.8	0.7	7.7	3	22.1	35.9	-	3.9	64.9	453	52.0	<4
MB11	100	7.31	122	11.27	7.8	<0.5	<0.5	0.1	5.6	2.4	0.8	8.8	2	23.9	38.1	-	3.0	67.0	477	36.5	<4
MB12	110	7.29	122	11.26	7.7	<0.5	<0.5	<0.1	5.8	2.2	1.0	9.0	1	25.0	30	-	6.2	62.2	392	36.5	5.5
MB13	120	7.31	121	11.24	7.6	<0.5	<0.5	0.1	5.9	3.1	0.8	9.8	1	25.0	59	-	3.6	88.6	373	53.5	<4
MB14	130	7.3	121	11.22	7.5	<0.5	<0.5	<0.1	6.3	2.7	0.9	9.9	0	27.0	35	-	3.3	65.3	393	61.0	<4
MB15	140	7.3	121	11.21	7.4	<0.5	<0.5	<0.1	6.6	3.4	0.8	10.8	0	27.8	46.2	-	3.3	77.3	356	35.0	<4
MB16	150	7.31	120	11.21	7.1	<0.5	<0.5	0.1	7.2	2.8	1.0	11.0	0	30.1	48.9	-	4.0	83.0	394	34.0	<4

NH$_4$, NO$_3$, DON, Urea all as N

* = PN by wet digestion method, ** = PN by combustion furnace method.

Detection limits: DRP 0.5; NO$_3$-N 0.5; NH$_4$-N 1.0 mg m^{-3}

New Analytical instrument (Flow Injection Analysis) from January 2002, gives greatly improved resolution at low levels.

FIA instrument results are given as a better indication of likely absolute low levels of DRP, NO$_3$-N, and NH$_4$-N below nominal detection limit.

Collection date 13 November 2002 Secchi depth = 18.0 m

Code	Depth	pH	EC @25oC	Temp	DO	SS	VSS	Chlor_*a*	DRP	DOP	PP	TP	NH$_4$-N	NO$_3$-N	DON	UREA	PN*	TN	DOC	PC	PN**
	m		mS cm^{-1}	°C	g m^{-3}	g m^{-3}	g m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}
NZ1	1	7.87	122	12.58	10.2	0.6	<0.5	0.6	1.3	1.7	2.2	5.2	0.8	0.6	65.6	2	15.3	82.3	620	160.0	12.5
NZ2	10	7.86	120	12.58	10.3	0.5	<0.5	0.7	1.2	1.8	2.1	5.1	0.7	0.0	49.3	1	13.7	63.7	573	180.5	13.5
NZ3	20	7.93	120	12.49	10.2	1.0	<0.5	0.7	1.1	1.9	2.2	5.2	0.5	0.1	61.4	1	15.8	77.8	536	157.5	12.0
NZ4	30	7.85	121	12.38	10.2	<0.5	<0.5	0.8	0.9	3.1	2.6	6.6	0.7	0.5	74.8	2	17.7	93.7	657	242.0	14.0
NZ5	40	7.81	119	12.16	10.1	<0.5	<0.5	0.7	1.2	1.8	1.9	4.9	0.6	0.7	58.7	1	12.9	72.9	506	164.5	8.0
NZ6	50	7.83	120	12.00	10.1	<0.5	<0.5	0.7	1.6	1.4	1.7	4.7	1.6	0.0	55.4	1	11.5	68.5	505	170.0	9.5
NZ7	60	7.78	119	11.81	10.0	<0.5	<0.5	0.6	1.5	1.5	1.5	4.5	1.2	0.0	64.8	2	9.5	75.5	531	108.5	6.5
NZ8	70	7.72	120	11.51	9.9	<0.5	<0.5	0.6	2.8	1.2	1.3	5.3	3.4	2.2	42.4	7	7.1	55.1	514	53.5	5.0
NZ9	80	7.67	120	11.32	9.7	<0.5	<0.5	0.4	2.7	1.3	1.1	5.1	3.3	0.9	38.8	2	5.9	48.9	578	61.0	4.5
NZ10	90	7.77	121	11.13	9.6	<0.5	<0.5	0.4	2.8	1.2	1.0	5.0	3.7	0.4	44.9	4	6.6	55.6	487	41.0	<2
NZ11	100	7.53	122	11.08	9.4	<0.5	<0.5	0.2	3.0	2.0	0.8	5.8	4.2	3.7	65.1	5	6.1	79.1	525	31.0	<2
NZ12	110	7.64	121	11.05	9.4	<0.5	<0.5	0.1	3.3	1.7	0.7	5.7	3.4	5.4	57.2	4	4.4	70.4	472	38.0	<2
NZ13	120	7.55	122	11.01	9.3	<0.5	<0.5	0.2	3.6	0.4	1.0	5.0	3.0	7.0	51.0	6	5.9	66.9	473	64.5	4.0
NZ14	130	7.32	123	10.99	9.2	<0.5	<0.5	0.1	3.6	0.4	1.0	5.0	2.9	7.5	45.6	5	6.7	62.7	555	70.5	3.5
NZ15	140	7.47	121	10.97	9.1	0.5	<0.5	0.1	3.7	1.3	0.9	5.9	2.5	10.5	60.0	16	6.7	79.7	460	54.5	3.0
NZ16	150	7.46	121	10.96	9.0	<0.5	<0.5	0.2	4.3	1.7	1.0	7.0	0.5	12.9	58.6	4	6.4	78.4	461	52.5	3.0

Collection date 3 April 2003 Secchi depth = 13.5 m

Code	Depth	pH	EC @25oC	Temp	DO	SS	VSS	Chlor_*a*	DRP	DOP	PP	TP	NH$_4$-N	NO$_3$-N	DON	UREA	PN*	TN	DOC	PC	PN**
	m		mS cm^{-1}	°C	g m^{-3}	g m^{-3}	g m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}
UJ1	1	8.01	119	19.20	8.8	3.0	0.5	0.7	0.8	3.2	1.8	5.8	5	0.4	75.6	5	18.8	99.8	546	219.0	19.5
UJ2	10	8.07	146	18.71	8.8	0.7	1.0	1.4	0.9	4.1	2.5	7.5	<1	0.6	45.4	1	24.0	70.0	511	304.5	29.0
UJ3	20	8.15	120	18.60	8.6	1.0	0.7	1.3	0.6	3.4	2.3	6.3	<1	0.6	40.4	1	23.7	64.7	520	270.0	31.5
UJ4	30	7.93	119	16.93	8.3	<0.5	<0.5	1.5	0.8	3.2	1.8	5.8	<1	0.3	39.7	1	20.4	60.4	503	181.0	39.0
UJ5	40	7.66	118	13.31	8.0	<0.5	<0.5	1.3	1.7	3.3	1.7	6.7	<1	0.8	39.2	1	12.2	52.2	443	115.0	54.0
UJ6	50	7.61	122	12.39	7.9	<0.5	1.0	0.7	2.9	2.1	1.3	6.3	<1	4.8	35.2	3	8.6	48.6	410	92.5	5.5
UJ7	60	7.57	138	11.80	7.7	<0.5	<0.5	0.5	3.9	2.1	1.1	7.1	<1	10.7	32.3	1	5.9	48.9	366	86.5	4.5
UJ8	70	7.42	121	11.50	7.6	<0.5	<0.5	0.2	4.4	1.6	0.9	6.9	<1	16.3	27.7	1	6.1	50.1	404	109.5	4.0
UJ9	80	7.39	121	11.32	7.5	<0.5	<0.5	0.1	4.5	1.5	1.0	7.0	<1	19.3	41.7	1	6.2	67.2	365	37.0	4.0
UJ10	90	7.32	121	11.20	7.3	<0.5	<0.5	0.1	4.7	1.3	0.8	6.8	<1	21.9	24.1	2	4.5	50.5	360	40.0	<4
UJ11	100	7.29	121	11.19	7.3	<0.5	<0.5	<0.1	5.3	2.7	0.9	8.9	<1	23.9	27.1	2	4.6	55.6	387	92.5	<4
UJ12	110	7.26	120	11.12	7.2	<0.5	<0.5	<0.1	5.5	0.5	0.7	6.7	<1	25.2	30.8	1	2.9	58.9	366	28.5	<4
UJ13	120	7.33	122	11.11	7.0	<0.5	<0.5	<0.1	6.6	0.4	0.7	7.7	<1	28.8	36.2	5	2.5	67.5	409	40.0	<4
UJ14	130	7.27	123	11.09	6.9	<0.5	<0.5	<0.1	7.7	0.3	0.9	8.9	<1	30.9	29.1	3	3.2	63.2	382	15.5	<4
UJ15	140	7.28	122	11.10	6.8	<0.5	<0.5	<0.1	7.6	0.4	0.8	8.8	<1	30.4	47.6	4	4.3	82.3	384	47.5	<4
UJ16	150	7.29	122	11.09	6.5	<0.5	<0.5	<0.1	9.0	5.0	1.6	15.6	<1	36.4	30.6	2	6.5	73.5	371	38.5	<4

NH$_4$, NO$_3$, DON, Urea all as N

* = PN by wet digestion method, ** = PN by combustion furnace method.

Detection limits: DRP 0.5; NO$_3$-N 0.5; NH$_4$-N 1.0 mg m^{-3}

New Analytical instrument (Flow Injection Analysis) from January 2002, gives greatly improved resolution at low levels.

FIA instrument results are given as a better indication of likely absolute low levels of DRP, NO$_3$-N, and NH$_4$-N below nominal detection limit.

Lake Taupo biannual nutrient database **2001-2002** Started 27 October 1994

Collection date 12 November 2001 Secchi depth = 15.5 m

Code	Depth	pH	EC @25oC	Temp	DO	SS	VSS	Chlor_a	DRP	DOP	PP	TP	NH4-N	NO3-N	DON	UREA	PN*	TN	DOC	PC	PN**
	m		µS cm^{-1}	°C	g m^{-3}	g m^{-3}	g m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}
XH1	1	7.85	122	14.23	9.5	0.5	<0.5	0.6	0.9	1.1	1.55	3.6	<1	<0.5	29	2	6	35	500	146.5	12.0
XH2	10	7.86	122	14.16	9.8	0.5	<0.5	0.7	1.1	0.9	4.3	6.3	<1	<0.5	32	2	16.5	49	520	212.0	31.3
XH3	20	7.82	119	13.37	9.4	<0.5	<0.5	1.0	1.1	<0.5	3.5	4.6	<1	<0.5	28	1	20	48	510	340.5	26.8
XH4	30	7.6	116	12.85	9.4	0.6	0.7	1.3	1.6	<0.5	3.1	4.7	<1	1.0	29	1	14.5	45	480	264.5	24.7
XH5	40	7.44	122	11.87	8.9	<0.5	<0.5	1.3	2.2	<0.5	2.8	5.0	1	2.5	25.5	2	11.5	41	470	200.5	21.7
XH6	50	7.46	121	11.57	9.0	<0.5	<0.5	0.9	2.6	<0.5	1.75	4.4	<1	7.2	26.8	2	6	40	470	136.5	12.6
XH7	60	7.41	121	11.24	8.7	1.3	1.2	0.7	2.6	<0.5	1.4	4.0	<1	8.0	24	2	<2	32	440	104.5	9.1
XH8	70	7.4	122	11.13	8.8	<0.5	<0.5	0.5	2.9	<0.5	1.15	4.1	<1	12.3	21.7	2	<2	34	450	142.0	7.2
XH9	80	7.38	122	11.03	8.6	<0.5	<0.5	0.4	3.2	<0.5	1.15	4.4	<1	13.6	29.4	4	<2	43	440	103.0	8.1
XH10	90	7.4	119	11.01	8.8	<0.5	<0.5	0.4	3.2	<0.5	1.05	4.3	<1	15.1	21.9	2	<2	37	420	79.0	6.2
XH11	100	7.35	120	10.99	8.6	<0.5	<0.5	0.3	3.8	<0.5	1.05	4.9	<1	17.8	25.2	2	4	47	460	98.0	6.6
XH12	110	7.36	122	10.97	8.6	<0.5	<0.5	0.3	4.0	<0.5	1.1	5.1	<1	19.5	24.5	2	<2	44	490	116.5	5.8
XH13	120	7.35	126	10.95	8.4	<0.5	<0.5	0.3	4.5	<0.5	1.3	5.8	<1	22.0	22	2	<2	44	490	93.5	5.6
XH14	130	7.38	127	10.94	8.4	<0.5	<0.5	0.3	4.4	<0.5	1.1	5.5	<1	21.1	21.9	2	<2	43	420	113.5	5.5
XH15	140	7.34	126	10.94	8.2	<0.5	<0.5	0.3	5.2	<0.5	1.3	6.5	<1	24.7	25.3	2	<2	50	440	93.5	7.3
XH16	150	7.38	127	10.94	8.1	1.3	0.6	0.3	5.3	<0.5	1.3	6.6	<1	25.2	26.8	3	<2	52	480	83.5	7.7

Collection date 4 April 2002 Secchi depth = 19.0 m

Code	Depth	pH	EC @25oC	Temp	DO	SS	VSS	Chlor_a	DRP	DOP	PP	TP	NH4-N	NO3-N	DON	UREA	PN*	TN	DOC	PC	PN**
	m		µS cm^{-1}	°C	g m^{-3}	g m^{-3}	g m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	g m^{-3}	mg m^{-3}	mg m^{-3}
EJ1	1	7.91	119	17.45	8.8	<0.5	<0.5	0.72	0.5	0.5	1	2.0	1.1	0.3	44.6		7.85	53.9	0.5	187.0	10.0
EJ2	10	7.94	118	17.38	8.9	<0.5	<0.5	0.96	0.6	1.4	1.4	3.4	0.2	0.1	44.7		9.4	54.4	0.6	164.5	10.5
EJ3	20	7.88	119	17.18	8.8	<0.5	<0.5	1.02	0.5	1.5	1.35	3.4	0.3	0.0	38.7		9.45	48.5	0.8	154.5	11.0
EJ4	30	7.85	119	16.83	8.7	<0.5	<0.5	0.95	0.7	2.3	1.45	4.5	0.4	0.1	40.5		8.4	49.4	0.5	136.5	10.5
EJ5	40	7.65	121	12.9	8.3	<0.5	<0.5	0.89	1.4	0.6	1.2	3.2	0.4	0.8	32.8		7.95	42.0	0.4	100.0	8.0
EJ6	50	7.66	120	12.09	8.2	<0.5	<0.5	0.85	2.1	0.9	1.3	4.3	0.4	3.5	35.1		7.8	46.8	0.4	114.0	9.0
EJ7	60	7.60	123	11.51	8.1	<0.5	<0.5	0.50	3.9	2.1	1	7.0	0.9	12.3	30.8		5.7	49.7	0.4	75.0	6.0
EJ8	70	7.42	123	11.3	8.0	<0.5	<0.5	0.26	4.5	0.5	0.95	6.0	0.0	20.9	30.1		5.65	56.7	0.5	49.5	4.0
EJ9	80	7.46	121	11.24	7.9	<0.5	<0.5	0.24	4.6	0.4	1.1	6.1	0.2	24.8	29		7.55	61.6	0.3	50.0	5.0
EJ10	90	7.38	121	11.19	7.8	<0.5	<0.5	0.19	5.3	<0.5	0.75	6.1	0.3	28.1	23.6		4.45	56.5	0.4	48.0	4.0
EJ11	100	7.33	121	11.17	7.8	<0.5	<0.5	0.11	5.4	0.6	0.8	6.8	0.1	28.6	30.3		5.05	64.1	0.3	76.0	5.5
EJ12	110	7.37	122	11.14	7.7	<0.5	<0.5	0.10	6.0	<0.5	0.8	6.8	0.5	31.7	23.8		6.15	62.2	0.6	67.5	7.5
EJ13	120	7.36	122	11.14	7.7	<0.5	<0.5	0.10	6.3	<0.5	0.6	6.9	0.2	32.2	24.6		3.25	60.3	0.3	46.5	4.0
EJ14	130	7.32	122	11.13	7.6	<0.5	<0.5	0.09	6.5	<0.5	0.45	7.0	0.1	32.2	26.7		0.8	59.8	0.5	48.0	5.5
EJ15	140	7.34	122	11.13	7.1	<0.5	<0.5	0.07	7.0	<0.5	0.7	7.7	1.1	34.0	29.9		4.9	69.9	0.4	44.0	4.0
EJ16	150	7.44	122	11.13	7.0	<0.5	<0.5	0.09	8.7	<0.5	0.9	9.6	0.8	36.3	24.9		4.45	66.5	0.4	75.5	4.0

NH$_4$, NO$_3$, DON, Urea all as N * = PN by wet digestion method, ** = PN by combustion furnace method.

Detection limits: DRP 0.5; NO$_3$-N 0.5; NH$_4$-N 1.0 mg m^{-3}

New Analytical instrument (Flow Injection Analysis) from January 2002, gives greatly improved resolution at low levels.

FIA instrument results are given for Autumn as an indication of likely absolute low levels of DRP, NO$_3$-N, and NH$_4$-N.

Lake Taupo biannual nutrient database **2000-2001** Started 27 October 1994

Collection date 26 October 2000 Secchi depth = 11 m

Code	Depth	pH	EC @25ºC	Temp	DO	SS	VSS	Chlor_a	DRP	DOP	PP	TP	NH4-N	NO3-N	DON	UREA	PN*	TN	DOC	PC	PN**
	m		µS cm^{-1}	ºC	g m^{-3}	g m^{-3}	g m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	g m^{-3}	mg m^{-3}	mg m^{-3}
FX1	1	7.87	120	12.5	9.1	0.5	<0.5	0.4	<1	3	2	5.0	1	<1	25	4	9	35	0.5	104.5	4.0
FX2	10	7.85	120	11.5	8.7	0.8	0.5	1.1	1	4	3	8.0	<1	<1	33	2	23	56	0.5	196.0	12.0
FX3	20	7.79	120	11.4	8.7	<0.5	<0.5	1.3	<1	2	4	6.0	<1	<1	41	2	29	70	0.5	237.0	19.0
FX4	30	7.74	120	11.3	8.7	1.1	0.5	1.3	<1	2	3	5.0	<1	<1	36	1	24	60	0.5	183.0	11.0
FX5	40	7.69	119	11.3	9.1	0.9	0.5	1.5	<1	2	3	5.0	1	<1	38	2	18	57	0.5	90.5	7.0
FX6	50	7.63	120	11.3	9.1	0.8	<0.5	1.4	1	2	2	5.0	2	<1	64	2	14	80	0.4	79.5	6.0
FX7	60	7.54	120	11.3	8.7	0.9	<0.5	1.2	1	1	2	4.0	<1	<1	45	2	14	59	0.4	58.0	5.0
FX8	70	7.52	120	11.2	8.7	<0.5	<0.5	1.2	1	1	2	4.0	4	1	38	4	14	57	0.5	61.5	5.0
FX9	80	7.52	120	11.2	8.7	0.9	<0.5	1.1	2	2	2.5	6.5	5	2	44	2	13	64	0.5	44.5	<4
FX10	90	7.59	120	11.2	8.7	0.9	<0.5	1.1	2	2	2	6.0	6	3	37	2	14	60	0.5	58.5	5.5
FX11	100	7.47	120	11.1	8.7	<0.5	<0.5	1.4	1	1	3	5.0	3	4	39	4	16	62	0.4	48.5	6.0
FX12	110	7.41	121	11.1	8.7	0.9	<0.5	1.2	2	2	3	7.0	3	4	38	3	15	60	0.4	29.5	<4
FX13	120	7.40	121	11.0	8.2	0.5	<0.5	0.8	2	2	2	6.0	6	7	38	5	8	59	0.4	104.0	5.5
FX14	130	7.42	121	11.0	8.5	0.6	<0.5	0.2	2	2	2	6.0	6	7	41	4	11	65	0.4	71.0	6.5
FX15	140	7.36	121	11.0	8.6	0.8	<0.5	0.6	4	1	3	8.0	5	11	40	3	11	67	0.4	65.5	5.0
FX16	150	7.32	121	11.0	8.5	0.6	<0.5	1.4	4	2	4	10.0	8	13	47	9	18	86	0.4	110.5	8.0

Collection date 8 April 2001 Secchi depth = 13.5 m

Code	Depth	pH	EC @25oC	Temp	DO	SS	VSS	Chlor_a	DRP	DOP	PP	TP	NH4-N	NO3-N	DON	UREA	PN*	TN	DOC	PC	PN**
	m		µS cm^{-1}	ºC	g m^{-3}	g m^{-3}	g m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	g m^{-3}	mg m^{-3}	mg m^{-3}
NZ1	1	7.94	120	17.0	8.3	<0.5	<0.5	1.0	<1	2	2	4.0	2	1	40	7	20.0	63.0	0.6	201.0	15.5
NZ2	10	7.97	120	16.9	8.3	<0.5	<0.5	1.4	<1	1	2	3.0	<1	<1	29	1	19.0	48.0	0.6	189.0	13.0
NZ3	20	7.99	120	16.8	8.4	<0.5	<0.5	1.5	<1	1	2	3.0	<1	<1	36	1	19.0	55.0	0.6	208.5	14.5
NZ4	30	7.96	124	15.8	8.0	<0.5	<0.5	1.2	<1	2	2	4.0	1	<1	42	1	16.0	59.0	0.6	156.0	10.5
NZ5	40	7.76	120	13.1	7.8	<0.5	<0.5	1.2	<1	1	1.5	2.5	1	1	22	2	12.0	36.0	0.5	145.0	8.5
NZ6	50	7.69	119	12.4	7.5	<0.5	<0.5	1.0	2	0	1	3.0	1	2	22	2	10.0	35.0	0.5	100.0	5.5
NZ7	60	7.60	120	11.8	7.2	<0.5	<0.5	0.8	1	1	1	3.0	<1	9	16	2	7.0	32.0	0.5	82.0	<2
NZ8	70	7.57	120	11.7	7.1	<0.5	<0.5	0.4	3	0	<1	3.0	<1	19	25	2	5.5	49.5	0.4	80.5	<2
NZ9	80	7.44	121	11.5	6.9	<0.5	<0.5	0.3	3	0	<1	3.0	2	24	15	3	5.0	46.0	0.6	70.0	<2
NZ10	90	7.39	121	11.5	6.9	<0.5	<0.5	0.2	3	1	<1	4.0	2	26	14	4	4.0	46.0	0.5	57.5	<2
NZ11	100	7.38	122	11.4	6.8	<0.5	<0.5	0.2	4	0	<1	4.0	2	29	16	1	4.0	51.0	0.5	47.5	<2
NZ12	110	7.39	122	11.4	6.8	<0.5	<0.5	0.1	4	1	<1	4.0	2	31	18	4	3.5	54.5	0.5	42.5	<2
NZ13	120	7.41	121	11.3	6.7	<0.5	<0.5	0.1	5	0	<1	5.0	1	33	16	4	5.0	55.0	0.4	40.0	<2
NZ14	130	7.42	122	11.3	6.6	<0.5	<0.5	0.1	5	0	<1	5.0	1	33	20	4	5.0	59.0	0.5	42.5	<2
NZ15	140	7.34	123	11.3	6.4	<0.5	<0.5	0.1	6	1	<1	7.0	2	38	12	5	4.5	56.5	0.5	55.0	<2
NZ16	146	7.30	123	11.3	6.3	<0.5	<0.5	0.1	7	2	1	10.0	2	43	22	5	6.5	73.5	0.5	70.5	<2

NH_4, NO_3, DON, Urea all as N Detection limits: DRP 0.5; NO_3-N 0.5; NH_4-N 1.0 mg m^{-3}

* = PN by wet digestion method, ** = PN by combustion furnace method.

Lake Taupo biannual nutrient database **1999-2000** Started 27 October 1994

Collection date 18 October 1999 Secchi depth = 14.9 m

Code	Depth m	pH	EC @25oC µS cm^{-1}	Temp °C	DO g m^{-3}	SS g m^{-3}	VSS g m^{-3}	Chlor_a^{++} mg m^{-3}	DRP mg m^{-3}	DOP mg m^{-3}	PP mg m^{-3}	TP mg m^{-3}	NH$_4$-N mg m^{-3}	NO$_3$-N mg m^{-3}	DON mg m^{-3}	UREA mg m^{-3}	PN* mg m^{-3}	TN mg m^{-3}	DOC mg m^{-3}	PC mg m^{-3}	PN** mg m^{-3}
PX1	1	7.71	119	12.8	8.9	0.5	<0.5	0.14	0.5	3	3.7	7.2	<1	<1	41	16	19.4	60.4	441	105.7	8.8
PX2	10	7.74	117	12.7	8.9	<0.5	<0.5	0.39	0.5	4	3.2	7.7	<1	<1	36	4	19.9	55.9	411	160.8	12.9
PX3	20	7.73	122	12.4	8.9	0.6	<0.5	0.80	1	2	5.5	8.5	<1	<1	34	1	37.8	71.8	437	254.7	37.3
PX4	30	7.76	120	11.6	8.9	<0.5	1.9	1.06	1	2	3.9	6.9	<1	<1	36	<1	26.7	62.7	413	198.3	24.2
PX5	40	7.57	117	11.4	8.8	<0.5	<0.5	3.14	2	2	2.4	6.4	5	<1	44	22	14.6	63.6	392	117.2	9.7
PX6	50	7.48	119	11.3	8.6	<0.5	<0.5	2.90	2.5	2	1.7	6.2	8	2	33	5	9.1	52.1	417	87.0	6.6
PX7	60	7.49	118	11.1	8.6	0.5	<0.5	1.45	3	1	1.5	5.5	7	9	36	5	12.6	64.6	449	95.0	11.1
PX8	70	7.41	117	11.1	8.6	<0.5	<0.5	0.65	3.5	1	1.5	6.0	4	15	27	9	5.6	51.6	421	49.9	4.9
PX9	80	7.39	117	11.0	8.5	<0.5	<0.5	0.75	3.5	2	1.4	6.9	4	17	31	7	5.7	57.7	398	42.7	5.7
PX10	90	7.36	118	11.0	8.6	<0.5	<0.5	0.54	4	2	1.3	7.3	3	17	29	2	5.8	54.8	393	51.2	5.7
PX11	100	7.36	118	11.0	8.6	<0.5	<0.5	0.63	4	1	1.6	6.6	4	18	30	2	7.3	59.3	492	56.1	5.8
PX12	110	7.35	118	11.0	8.6	0.5	<0.5	0.65	4	2	1.8	7.8	5	18	46	10	20.1	89.1	547	129.5	21.4
PX13	120	7.33	119	11.0	8.3	0.8	0.7	0.71	4	2	1.7	7.7	6	19	47	20	45.3	117.3	530	222.3	44.3
PX14	130	7.33	119	11.0	7.9	0.6	0.5	0.59	4	2	1.7	7.7	5	19	40	12	15.3	79.3	461	112.9	19.7
PX15	140	7.32	123	11.0	7.5	0.6	<0.5	0.90	4	1	2.3	7.3	4	19	53	12	16.5	92.5	514	84.5	9.7
PX16	150	7.29	119	11.0	7.5	1.6	<0.5	0.67	4.5	2	2.1	8.6	3	19	34	7	9.6	65.6	783	63.9	6.8

Collection date 12 April 2000 Secchi depth = 15 m

Code	Depth m	pH	EC @25oC µS cm^{-1}	Temp °C	DO g m^{-3}	SS g m^{-3}	VSS g m^{-3}	Chlor_a mg m^{-3}	DRP mg m^{-3}	DOP mg m^{-3}	PP mg m^{-3}	TP mg m^{-3}	NH$_4$-N mg m^{-3}	NO$_3$-N mg m^{-3}	DON mg m^{-3}	UREA mg m^{-3}	PN* mg m^{-3}	TN mg m^{-3}	DOC mg m^{-3}	PC mg m^{-3}	PN** mg m^{-3}
YX1	1	7.86	118	17.4	9.2	0.6		1.3	<1	4	2	6.0	6	2	72	8	16	96.0	542	255.0	31.0
YX2	10	7.88	118	17.3	9.2	1.1		1.3	<1	3	2	5.0	3	1	57	1	21	82.0	472	198.5	16.5
YX3	20	7.88	118	17.2	9.2	1.0		1.4	<1	3	2	5.0	1	<1	59	3	15.5	75.5	599	166.5	12.0
YX4	30	7.79	118	16.7	9.0	1.1		1.3	<1	3	2	5.0	1	<1	59	2	17	77.0	608	154.0	17.5
YX5	40	7.29	119	12.6	8.3	0.6		1.1	2	2	1	5.0	2	2	57	6	9.5	70.5	396	72.0	6.0
YX6	50	7.17	120	11.7	8.0	1.0		0.8	3	2	1	6.0	2	7	42	7	8.5	59.5	403	94.5	7.5
YX7	60	7.18	119	11.4	8.0	0.5		1.0	4	1	<1	5.0	1	16	44	1	4	65.0	402	48.5	<4
YX8	70	7.1	120	11.3	8.0	0.6		<0.1	6	1	<1	7.0	6	29	35	1	6.5	76.5	418	41.0	4.0
YX9	80	7.14	120	11.2	7.9	1.0		<0.1	6	1	<1	7.0	2	32	46	1	12	92.0	451	105.5	8.0
YX10	90	7.11	120	11.2	7.9	0.7		<0.1	7	<1	<1	7.0	1	35	34	2	11	81.0	428	67.5	5.0
YX11	100	7.12	125	11.2	7.7	0.7		<0.1	7	2	<1	9.0	2	37	41	1	8.5	88.5	417	68.5	<4
YX12	110	7.12	120	11.2	7.7	0.9		<0.1	7	2	<1	9.0	2	37	50	3	11	100.0	439	65.0	5.5
YX13	120	7.06	120	11.1	7.7	0.6		<0.1	8	1	<1	9.0	3	39	47	1	6.5	95.5	431	40.5	0.0
YX14	130	7.12	120	11.1	7.5	1.2		<0.1	8	1	<1	9.0	2	40	47	3	9	98.0	453	57.0	5.0
YX15	140	7.08	120	11.1	7.5	1.2		<0.1	9	<1	<1	9.0	2	42	45	2	8	97.0	415	50.5	<4
YX16	146	7.04	120	11.1	7.2	1.7		0.1	10	3	1	14.0	4	43	42	2	10	99.0	429	92.0	4.0

NH$_4$, NO$_3$, DON, Urea all as N Detection limits: DRP 0.5; NO$_3$-N 0.5; NH$_4$-N 1.0 mg m^{-3}

* = PN by wet digestion method, ** = PN by combustion furnace method. $^{++}$ = from calibrated chlorophyll fluorescence profiler (filters damaged)

Lake Taupo biannual nutrient database **1998-1999** Started 27 October 1994

Collection date 1 November 1998 Secchi depth = 13.5 m

Code	Depth m	pH	EC @25oC µS cm^{-1}	Temp ºC	DO g m^{-3}	SS g m^{-3}	VSS g m^{-3}	Chlor_a mg m^{-3}	DRP mg m^{-3}	DOP mg m^{-3}	PP mg m^{-3}	TP mg m^{-3}	NH4-N mg m^{-3}	NO3-N mg m^{-3}	DON mg m^{-3}	PN* mg m^{-3}	TN mg m^{-3}	DOC g m^{-3}	PC mg m^{-3}	PN** mg m^{-3}
DM1	1	7.91	118	13.6	10.4	0.8	<0.5	0.8	0.7	1.5	2.0	4.2	3.4	<0.5	35	10.8	49.2		133.5	12.0
DM2	10	7.87	117	13.2	10.7	0.8	<0.5	1.0	0.6	1.3	2.6	4.5	2.4	<0.5	36	15.2	53.6		180.5	15.0
DM3	20	7.82	118	12.7	10.7	0.5	<0.5	1.4	0.6	1.4	2.9	4.9	1.9	1.1	37	18.0	58.0		215.0	23.3
DM4	30	7.80	118	12.4	10.6	<0.5	<0.5	1.1	0.5	1.3	2.3	4.1	1.9	<0.5	34	14.1	50.0		128.0	13.5
DM5	40	7.75	118	12.4	10.4	<0.5	<0.5	0.6	0.6	1.2	1.7	3.5	2.5	<0.5	34	9.2	45.7		118.0	10.4
DM6	50	7.70	118	12.2	10.2	<0.5	<0.5	0.6	0.6	1.2	1.7	3.5	2.6	0.6	31	8.1	42.3		114.5	7.9
DM7	60	7.46	119	11.7	10.0	<0.5	<0.5	0.4	2.1	1.0	1.4	4.5	1.6	9.5	32	6.0	49.1		73.0	6.0
DM8	70	7.30	120	11.2	9.6	<0.5	<0.5	0.3	3.3	0.9	1.0	5.2	2.7	16.0	32	3.8	54.5		56.0	2.7
DM9	80	7.15	121	11.1	9.1	<0.5	<0.5	0.2	3.9	0.8	0.9	5.6	1.5	20.5	29	5.0	56.0		64.5	2.7
DM10	90	7.07	122	11.1	8.8	<0.5	<0.5	0.2	4.9	0.5	0.9	6.3	2.6	24.8	32	5.0	64.4		45.0	2.9
DM11	100	7.16	121	11.0	8.5	<0.5	<0.5	0.2	5.0	0.5	0.9	6.4	3.3	26.2	34	3.6	67.1		42.5	2.0
DM12	110	7.16	122	11.0	8.3	<0.5	<0.5	0.1	6.2	0.4	0.8	7.4	2.0	29.2	30	4.0	65.2		54.0	2.9
DM13	120	7.11	122	11.0	8.0	<0.5	<0.5	0.1	6.4	0.3	0.8	7.5	2.2	30.6	29	3.3	65.1		63.0	1.8
DM14	130	7.08	122	11.0	7.8	<0.5	<0.5	0.1	7.0	0.2	0.8	8.0	2.2	31.4	28	3.1	64.7		48.5	2.0
DM15	140	7.07	123	10.9	7.6	<0.5	<0.5	0.1	7.9	0.0	0.9	8.8	2.0	33.8	32	5.0	72.8		54.0	2.0
DM16	150	7.10	123	10.9	7.6	2.5	<0.5	0.2	8.2	0.4	3.7	12.3	2.7	35.4	34	12.8	84.9		140.5	10.5

Collection date 14 April 1999 Secchi depth = 13 m

Code	Depth m	pH	EC @25oC µS cm^{-1}	Temp ºC	DO g m^{-3}	SS g m^{-3}	VSS g m^{-3}	Chlor_a mg m^{-3}	DRP mg m^{-3}	DOP mg m^{-3}	PP mg m^{-3}	TP mg m^{-3}	NH4-N mg m^{-3}	NO3-N mg m^{-3}	DON mg m^{-3}	PN* mg m^{-3}	TN mg m^{-3}	DOC g m^{-3}	PC mg m^{-3}	PN** mg m^{-3}
II1	1		119	18.3	8.9	<0.5	<0.5	1.2	0.6		1.8	2.4	3	<0.5	43	19.0	65.0	0.6	221.4	19.5
II2	10		118	18.3	8.8	<0.5	<0.5	1.2	0.5		1.8	2.3	1	<0.5	40	19.3	60.3	0.5	216.3	17.6
II3	20		118	18.3	8.8	<0.5	<0.5	1.2	0.5		1.7	2.2	1	2	41	19.0	63.0	0.5	132.3	8.9
II4	30		118	18.1	8.7	<0.5	<0.5	1.2	1.1		1.4	2.5	1	3	34	14.0	52.0	0.6	136.8	9.7
II5	40		118	12.9	8.4	<0.5	<0.5	0.7	2.3		0.9	3.2	1	6	31	8.9	46.9	0.7	91.2	6.5
II6	50		119	11.9	8.1	<0.5	<0.5	0.4	3.1		0.7	3.8	1	14	28	7.9	50.9	0.5	63.1	4.8
II7	60		121	11.6	8.0	<0.5	<0.5	0.3	4.3		0.7	5.0	1	19	33	7.3	60.3	0.6	42.3	5.0
II8	70		121	11.4	8.0	<0.5	<0.5	0.2	5.5		0.8	6.3	1	23	27	8.6	59.6	0.4	48.4	7.0
II9	80		122	11.3	7.8	<0.5	<0.5	0.1	5.9		0.8	6.7	2	28	29	8.3	67.3	0.5	51.5	6.1
II10	90		123	11.2	7.6	<0.5	<0.5	0.1	6.1		0.6	6.7	1	30	31	6.4	68.4	0.5	62.1	4.2
II11	100		122	11.2	7.4	<0.5	<0.5	0.1	6.1		0.5	6.6	2	27	28	6.1	63.1	0.6	33.1	1.5
II12	110		120	11.2	7.2	<0.5	<0.5	0.1	6.6		0.5	7.1	2	28	27	6.1	63.1	0.5	35.7	2.9
II13	120		122	11.2	7.1	<0.5	<0.5	0.1	6.4		0.5	6.9	2	24	26	5.2	57.2	0.6	34.1	2.2
II14	130		122	11.1	6.8	<0.5	<0.5	<0.1	7.5		0.5	8.0	2	28	31	6.3	67.3	0.6	46.9	5.5
II15	140		122	11.1	6.3	<0.5	<0.5	0.1	8.8		0.9	9.7	2	33	31	6.4	72.4	0.5	63.4	3.0
II16	150		116	11.1	5.9	<0.5	<0.5	<0.1	8.6		0.9	9.5	4	28	60	7.7	99.7	0.9	51.1	1.1

NH_4, NO_3, DON, Urea all as N Detection limits: DRP 0.5; NO_3-N 0.5; NH_4-N 1.0 mg m^{-3}

* = PN by wet digestion method, ** = PN by combustion furnace method.

Lake Taupo biannual nutrient database **1997-1998** Started 27 October 1994

Collection Date 30 October 1997 Secchi depth = 12.5 m

ID	Depth	pH	EC @25ºC	Temp	DO	SS	VSS	Chlor_*a*	DRP	DOP	PP	TP	NH_4	NO_3	DON	UREA	PN*	TN	DOC	PC	PN**	SO_4
	m		µS cm^{-1}	C	g m^{-3}	g m^{-3}	g m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	g m^{-3}	mg m^{-3}	mg m^{-3}	g m^{-3}
TT1	1	7.70	116.9	12.2	10.7	0.61	0.30	1.28	1.0	1.3	1.5	3.8	2.1	2.9	36	1.1	14.3	55.3	0.71	168.3	17.2	
TT2	10	7.71	117.8	12.0	10.2	0.54	0.29	1.49	0.7	1.9	1.9	4.5	1.3	7.3	32	1.1	18.7	59.7	0.82	160.7	18.8	
TT3	20	7.65	118.1	11.5	10.2	0.59	0.32	1.58	0.8	1.6	1.7	4.0	1.6	0.7	36	1.1	14.0	52.0	0.60	133.0	16.5	
TT4	30	7.64	118.2	11.5	10.0	0.52	0.25	1.19	0.4	1.5	1.9	3.8	1.5	1.3	31	0.9	15.8	49.8	0.60	146.9	16.0	
TT5	40	7.62	117.1	11.4	10.0	0.55	0.28	1.31	0.6	1.5	1.6	3.7	1.7	0.3	33	1.0	14.1	49.1	0.62	126.3	13.4	
TT6	50	7.63	116.9	11.1	9.9	0.37	0.20	1.10	0.4	1.5	1.4	3.2	2.2	0.3	32	0.8	12.3	46.3	0.51	112.1	12.1	
TT7	60	7.54	117.7	11.1	9.8	0.21	0.10	0.93	1.4	0.7	1.5	3.5	3.3	0.7	34	1.6	14.3	52.3	0.74	80.6	9.0	
TT8	70	7.45	117.8	10.8	9.8	0.41	0.12	0.79	1.1	1.1	1.1	3.2	8.2	1.3	31	1.5	7.9	47.9	0.65	58.4	4.8	
TT9	80	7.36	118.3	10.7	9.9	0.31	0.04	0.54	1.5	1.1	0.8	3.3	6.1	2.3	31	0.6	6.0	45.0	0.57	57.6	9.0	
TT10	90	7.48	117.8	10.6	9.3	0.44	0.27	0.74	1.1	1.2	1.2	3.5	7.9	4.8	33	0.7	12.4	58.4	0.52	69.3	12.2	
TT11	100	7.29	118.5	10.5	9.2	0.25	0.11	0.40	2.0	1.2	0.8	4.1	8.4	5.0	30	1.1	5.7	48.7	0.63	64.5	8.3	
TT12	110	6.97	119.3	10.4	9.0	0.21	0.06	0.29	2.3	1.0	1.1	4.3	10.8	5.6	29	2.5	6.7	51.7	0.59	53.0	5.5	
TT13	120	7.00	119.1	10.5	9.0	0.29	0.26	0.27	2.0	1.2	1.0	4.1	9.9	6.7	31	6.1	5.8	53.8	0.58	37.5	5.3	
TT14	130	6.80	119.8	10.5	8.8	0.28	0.26	0.28	2.2	1.2	1.3	4.7	10.6	7.1	32	1.5	8.2	58.2	0.56	49.0	6.4	
TT15	140	7.23	117.9	10.4	8.8	0.25	0.20	0.26	2.7	1.4	1.1	5.2	10.8	9.5	37	2.0	10.9	67.9	0.63	66.0	8.5	
TT16	150	7.29	118.9	10.4	8.8	0.50	0.27	0.32	2.5	1.1	1.0	4.5	11.6	9.6	37	3.0	7.6	65.6	0.54	69.0	9.2	

Collection Date:- 7 April 1998 Secchi depth = 13.5 m

ID	Depth	pH	EC @25ºC	Temp	DO	SS	VSS	Chlor_*a*	DRP	DOP	PP	TP	NH_4	NO_3	DON	UREA	PN*	TN	DOC	PC	PN**	SO_4
	m		µS cm^{-1}	C	g m^{-3}	g m^{-3}	g m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	g m^{-3}	mg m^{-3}	mg m^{-3}	g m^{-3}
YE1	1	8.00	118	17.7	9.1	0.40	0.10	0.67	0.8	1.4	1.3	3.5	2.9	4.6	53	3.7	9.9	70.4	0.83	156.5	14.4	7.7
YE2	10	7.99	119	17.7	9.1	0.49	0.12	1.04	0.9	1.4	1.8	4.1	1.9	2.5	52	4.6	13.7	70.1	0.78	179.5	16.0	8.1
YE3	20	8.00	119	17.7	9.1	0.32	0.32	1.07	0.7	1.5	1.7	3.9	2.4	1.5	48	3.7	12.6	64.5	0.71	162.5	15.2	8.5
YE4	30	7.99	120	17.5	9.1	0.30	0.20	1.06	0.7	1.7	1.6	4.0	2.0	1.2	48	3.7	12.7	63.9	0.78	138.5	14.5	8.0
YE5	40	7.60	120	13.7	9.3	0.13	0.13	1.18	1.2	1.0	1.2	3.4	2.0	3.1	39	4.2	8.2	52.3	0.69	112.5	8.2	7.7
YE6	50	7.50	120	11.5	9.3	0.34	0.00	0.75	2.4	0.9	0.9	4.2	2.5	4.5	52	3.2	6.5	65.5	0.65	88.0	6.7	7.8
YE7	60	7.38	120	11.0	9.3	0.11	0.00	0.49	3.0	0.7	0.8	4.5	1.5	11.7	32	3.2	5.3	50.5	0.72	74.5	5.8	7.7
YE8	70	7.32	121	10.8	9.2	0.20	0.00	0.33	3.1	0.9	0.6	4.6	1.0	17.7	38	3.7	4.0	60.7	0.78	57.5	4.1	7.9
YE9	80	7.23	120	10.6	9.1	0.24	0.24	0.24	3.5	0.6	0.8	4.9	1.4	23.1	43	6.9	5.7	73.2	0.69	49.5	4.5	7.9
YE10	90	7.27	121	10.6	9.1	0.31	0.21	0.17	4.4	0.6	0.7	5.7	1.3	24.1	41	6.5	5.6	72.0	0.68	47.5	4.9	7.9
YE11	100	7.29	121	10.6	9.0	0.32	0.11	0.16	4.5	0.7	0.8	6.0	1.0	24.5	39	3.7	6.8	71.3	0.57	58.0	7.4	7.8
YE12	110	7.29	121	10.5	8.9	0.35	0.35	0.12	4.8	0.7	0.5	6.0	1.3	25.1	40	5.5	6.5	72.9	0.63	52.5	2.6	7.8
YE13	120	7.35	121	10.5	8.9	0.24	0.08	0.37	3.4	0.6	1.2	5.2	1.0	18.9	35	4.6	4.1	59.0	0.75	63.5	3.8	7.7
YE14	130	7.24	122	10.5	8.8	0.32	0.16	0.11	5.7	0.6	0.7	7.0	1.0	27.0	39	6.0	3.5	70.5	0.63	52.0	3.9	7.9
YE15	140	7.21	122	10.5	8.6	0.45	0.05	0.15	6.4	0.6	1.0	8.0	4.2	29.1	65	10.6	6.7	105.0	0.74	60.5	5.9	7.8
YE16	150	7.49	121	10.5	8.4	0.80	0.15	0.62	3.3	1.1	1.6	6.0	2.5	13.0	62	9.7	14.2	91.7	0.70	135.5	13.6	7.9

NH_4, NO_3, DON, Urea all as N Detection limits: DRP 0.5; NO_3-N 0.5; NH_4-N 1.0 mg m^{-3}

* = PN by wet digestion method, ** = PN by combustion furnace method.

Lake Taupo biannual nutrient database **1996-1997** Started 27 October 1994

Collection Date 24 October 1996 Secchi depth = 12.6 m

ID	Depth	pH	EC @25ºC	Temp	DO	SS	VSS	Chlor_*a*	DRP	DOP	PP	TP	NH_4	NO_3	DON	UREA	PN*	TN	DOC	PC	PN**	SO4
	m		µS cm^{-1}	C	g m^{-3}	g m^{-3}	g m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	g m^{-3}	mg m^{-3}	mg m^{-3}	g m^{-3}
IG1	1			12.4	10.3	0.45	0.34	0.27	0.6	2.1	1.7	4.4	3.0	0.5	59.3	1.4	13.9	76.7	0.86	171	14.5	7.82
IG2	10			12.3	10.3	0.72	0.42	0.47	0.7	2.3	2.2	5.2	2.4	0.4	64.5	1.0	14.5	81.8	0.88	201	16.8	7.90
IG3	20			12.3	10.2	0.67	0.40	0.45	0.8	2.8	2.9	6.5	2.6	0.4	75.8	0.6	18.7	97.5	0.91	232	19.8	7.87
IG4	30			12.3	9.9	0.85	0.49	0.64	0.6	2.3	3.1	6.0	3.3	0.5	73.6	0.4	20.6	98.0	0.95	198	15.7	7.86
IG5	40			11.9	9.9	0.71	0.46	0.56	0.5	1.8	2.5	4.8	2.6	1.2	64.8	0.3	14.6	83.2	0.80	183	12.8	7.84
IG6	50			11.6	9.8	0.62	0.34	0.45	1.1	3.1	2.1	6.3	2.9	0.6	71.2	0.9	13.2	87.9	0.92	157	14.9	7.95
IG7	60			11.1	9.7	0.77	0.32	0.70	0.9	1.8	2.3	5.0	4.4	13.2	175.4	3.5	14.3	207.3	1.29	151	14.1	10.67
IG8	70			10.6	9.4	0.65	0.28	0.54	0.8	1.5	1.9	4.2	2.9	0.8	59.3	1.5	9.2	72.2	0.78	116	10.2	7.85
IG9	80			10.5	9.3	0.51	0.27	0.55	0.9	2.5	1.8	5.2	3.0	3.0	76.1	1.3	9.8	91.9	0.95	103	10.8	7.80
IG10	90			10.4	9.3	0.49	0.23	0.50	0.6	1.8	1.8	4.2	2.1	1.0	52.3	1.4	10.9	66.3	0.73	95	11.0	7.69
IG11	100			10.4	9.2	0.50	0.21	0.51	0.5	1.5	1.8	3.8	1.8	3.6	53.9	4.5	9.6	68.9	1.04	106	12.8	7.85
IG12	110			10.4	9.2	0.43	0.23	0.49	0.4	1.3	2.0	3.7	2.5	5.2	54.0	6.0	9.3	71.0	0.80	94	11.5	7.85
IG13	120			10.4	9.0	0.47	0.21	0.47	0.8	1.4	1.8	4.0	3.7	9.6	61.9	6.9	8.0	83.2	0.78	78	9.7	7.97
IG14	130			10.3	8.9	0.44	0.18	0.38	1.1	1.5	2.3	4.9	4.5	9.7	52.4	4.6	12.0	78.6	1.00	83	8.7	7.99
IG15	140			10.3	8.9	0.49	0.22	0.51	1.5	1.6	2.5	5.6	4.3	12.9	57.8	5.0	10.4	85.4	0.99	80	8.9	8.14
IG16	150			10.3	8.9	1.13	0.26	0.57	1.2	2.3	3.5	7.0	5.1	13.6	65.9	4.8	14.5	99.1	0.91	121	13.4	8.15

Collection Date:- 2 April 1997 Secchi depth = 16.0 m

ID	Depth	pH	EC @25ºC	Temp	DO	SS	VSS	Chlor_*a*	DRP	DOP	PP	TP	NH_4	NO_3	DON	UREA	PN*	TN	DOC	PC	PN**	SO4
	m		µS cm^{-1}	C	g m^{-3}	g m^{-3}	g m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	g m^{-3}	mg m^{-3}	mg m^{-3}	g m^{-3}
NA1	1	8.02	118.4	17.3	9.4	0.30	0.30	0.63	0.9	2.2	1.5	4.6	4.0	0.6	67.4	4.9	18.1	90.1	0.82	186.5	17.3	7.80
NA2	10	8.01	118.3	17.3	9.2	0.20	0.10	0.69	0.9	1.3	1.6	3.8	1.7	0.3	51.0	3.3	14.4	67.4	0.77	190.0	17.1	7.86
NA3	20	8.03	118.2	17.2	8.9	0.40	0.30	0.63	0.6	1.2	1.6	3.4	1.8	0.3	51.8	2.2	17.6	71.5	0.75	192.0	19.1	7.85
NA4	30	7.98	118.4	17.2	8.8	0.40	0.40	0.52	0.7	1.0	1.5	3.2	2.5	0.6	47.5	2.7	15.2	65.8	0.56	207.5	20.3	7.90
NA5	40	7.52	118.5	14.2	8.8	0.20	0.20	0.72	0.8	1.8	1.4	4.0	2.7	0.3	53.2	4.1	13.3	69.5	0.69	158.0	15.2	7.91
NA6	50	7.32	119.3	11.3	8.6	0.00	0.00	0.39	1.5	1.4	1.0	3.9	11.2	3.1	54.7	4.5	9.7	78.7	0.62	116.5	10.6	7.88
NA7	60	7.18	120.2	10.9	8.6	0.20	0.20	0.16	1.7	1.3	0.8	3.8	3.7	10.1	48.9	2.1	10.5	73.2	0.86	100.0	13.8	7.88
NA8	70	7.13	119.6	10.6	8.5	0.10	0.10	0.12	1.9	1.7	0.8	4.4	4.3	11.8	58.3	2.2	8.0	82.4	0.83	75.0	8.7	7.87
NA9	80	7.12	120.1	10.5	8.5	0.10	0.10	0.05	3.3	1.4	0.7	5.4	6.9	26.9	82.4	16.9	6.7	122.9	0.98	77.5	9.9	7.90
NA10	90	7.12	120.4	10.5	8.5	0.00	0.00	0.25	3.6	2.2	0.7	6.5	28.9	22.9	108.3	7.4	8.1	168.2	0.63	110.5	8.8	8.00
NA11	100	7.10	120.4	10.5	8.4	0.20	0.20	0.04	4.4	1.2	0.8	6.4	10.7	22.5	72.0	5.2	7.1	112.3	0.85	71.0	8.3	7.97
NA12	110	7.07	120.6	10.4	8.3	0.20	0.20	0.02	3.7	2.0	0.8	6.5	2.9	21.9	52.5	3.8	6.4	83.7	1.01	77.0	9.6	7.93
NA13	120	7.07	120.5	10.4	8.2	0.30	0.20	0.02	3.3	2.4	0.8	6.5	6.4	22.8	56.4	4.2	13.0	98.6	0.70	113.5	15.4	7.88
NA14	130	7.08	120.4	10.4	8.0	0.20	0.20	0.01	4.3	1.6	0.8	6.7	6.2	27.9	56.7	6.2	8.2	99.0	0.81	118.5	11.0	7.97
NA15	140	7.10	121.1	10.4	7.6	0.40	0.40	0.04	4.5	1.7	1.2	7.4	3.9	28.9	58.5	7.9	24.7	116.0	0.80	212.5	28.8	7.91
NA16	150	7.10	122.1	10.4	7.5	1.20	0.40	0.07	5.0	1.0	2.7	8.7	8.6	29.0	61.5	11.8	20.2	119.3	2.07	234.5	22.1	7.97

NH_4, NO_3, DON, Urea all as N Detection limits: DRP 0.5; NO_3-N 0.5; NH_4-N 1.0 mg m^{-3}

* = analysed by wet digestion method, ** = analysed by CHN combustion furnace method.

Lake Taupo biannual nutrient database **1995-1996**

Collection Date:- 30 October 1995 Secchi depth = 13.0 m

ID	Depth	pH	EC @25^{o}C	Temp	DO	BOD$_5$	SS	VSS	Chlor_*a*	DRP	DOP	PP	TP	NH$_4$	NO$_3$	DON	UREA	PN*	TN	DOC	PC	PN**
	m		μS cm^{-1}	C	g m^{-3}	g m^{-3}	g m^{-3}	g m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	g m^{-3}	mg m^{-3}	mg m^{-3}
ZH1	1	7.40	115.1	13.7	10.3	0.80	0.60	0.38	0.45	<0.2	2.4	1.27	3.67	<0.2	<0.1	55.7	3	6.89	62.69	0.75	123	10.3
ZH2	10	7.59	116.1	11.9	10.5	0.40	0.95	0.53	0.96	<0.2	0.8	1.94	2.74	<0.2	<0.1	48.0	3	14.69	62.69	0.61	217	18.0
ZH3	20	7.39	117.8	11.4	10.6	-0.05	1.09	0.59	1.18	0.3	1.5	2.41	4.21	0.2	<0.1	51.5	4	19.47	71.17	0.58	285	22.3
ZH4	30	7.58	116.6	11.2	10.7	-0.15	1.15	0.58	1.26	0.2	0.7	2.21	3.11	<0.2	<0.1	44.6	2	17.83	62.43	0.45	242	19.4
ZH5	40	7.48	116.2	10.9	10.7	0.00	0.91	0.57	1.22	<0.2	1.1	1.88	2.98	<0.2	<0.1	41.9	2	13.00	54.90	0.44	183	15.8
ZH6	50	7.36	117.0	10.8	10.3	0.25	0.69	0.42	1.10	<0.2	0.8	1.71	2.51	<0.2	<0.1	41.7	3	8.55	50.25	0.43	116	10.3
ZH7	60	7.28	117.2	10.7	10.3	0.70	0.49	0.28	1.03	<0.2	0.8	1.55	2.35	<0.2	0.1	41.1	3	7.75	48.95	0.40	110	10.3
ZH8	70	7.25	117.8	10.5	10.2	0.50	0.64	0.43	1.03	<0.2	0.6	1.50	2.10	<0.2	0.2	40.4	2	7.27	47.87	0.38	108	9.9
ZH9	80	7.25	117.5	10.5	10.2	0.40	0.72	0.43	1.19	<0.2	0.8	1.58	2.38	<0.2	0.7	41.4	2	7.19	49.39	0.48	115	12.1
ZH10	90	7.30	118.0	10.5	10.1	0.00	0.72	0.40	1.27	0.3	0.6	1.59	2.49	<0.2	1.5	38.5	3	7.30	47.30	0.47	101	12.1
ZH11	100	7.25	117.5	10.5	10.0	0.15	0.71	0.39	1.30	<0.2	0.2	1.77	1.97	<0.2	2.4	36.4	3	10.67	49.47	0.49	107	12.5
ZH12	110	7.25	117.5	10.5	9.9	0.35	0.71	0.38	1.32	<0.2	0.9	1.69	2.59	0.5	4.6	44.3	3	10.26	59.66	0.52	93	13.1
ZH13	120	7.23	117.3	10.5	9.9	0.30	0.70	0.41	1.35	<0.2	1.3	1.55	2.85	0.5	5.6	51.3	9	7.99	65.39	0.51	99	12.9
ZH14	130	7.25	117.3	10.5	9.8	0.20	0.69	0.47	1.32	<0.2	0.4	1.89	2.29	1.3	6.6	49.7	7	13.42	71.02	0.55	112	18.5
ZH15	140	7.25	117.3	10.5	9.6	0.40	0.97	0.47	1.60	<0.2	0.2	2.54	2.74	5.7	11.7	60.6	9	11.77	89.77	0.57	113	15.8
ZH16	150	7.25	117.5	10.5	9.2	0.40	1.77	0.91	1.77	0.7	0.4	3.05	4.15	8.3	13.2	90.9	15	48.30	160.70	0.69	357	55.1

Collection Date:- 28 March 1996 Secchi depth = 14.6 m

ID	Depth	pH	EC @25^{o}C	Temp	DO	BOD$_5$	SS	VSS	Chlor_*a*	DRP	DOP	PP	TP	NH$_4$	NO$_3$	DON	UREA	PN*	TN	DOC	PC	PN**
	m		μS cm^{-1}	C	g m^{-3}	g m^{-3}	g m^{-3}	g m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	g m^{-3}	mg m^{-3}	mg m^{-3}
DR1	1	8.02	117.4	16.8	8.7	0.15	0.31	0.18	0.48	1.3	1.8	0.93	4.03	<0.2	4.7	91.0	1.4	12.69	108.39	0.35	118	9.7
DR2	10	8.02	117.4	16.7	8.7	0.20	0.44	0.25	0.81	1.3	1.5	1.43	4.23	<0.2	7.4	111.0	6.2	12.60	131.00	0.42	149	12.3
DR3	20	7.95	117.6	16.6	8.8	0.25	0.34	0.23	0.76	1.0	1.8	1.30	4.10	0.6	<0.1	60.0	2.0	11.70	72.30	0.35	126	11.7
DR4	30	7.59	119.0	13.7	9.0	0.25	0.39	0.15	1.13	1.5	1.7	1.51	4.71	0.5	0.2	64.0	2.0	11.72	76.42	0.26	101	12.8
DR5	40	7.43	118.9	12.4	8.8	0.25	0.35	0.16	0.97	1.3	1.4	1.41	4.11	1.1	<0.1	51.0	2.2	11.77	63.87	0.22	68	8.6
DR6	50	7.34	119.5	11.6	8.6	0.10	0.32	0.14	0.71	1.8	1.5	1.17	4.47	0.8	5.0	68.0	3.5	8.76	82.56	0.18	60	6.4
DR7	60	7.32	119.4	11.4	8.5	0.25	0.27	0.10	0.48	2.2	1.0	1.06	4.26	1.8	5.9	59.0	1.8	8.32	75.02	0.17	46	5.7
FR8	70	7.29	120.4	11.6	8.5	0.25	0.23	0.13	0.28	2.3	1.5	0.80	4.60	<0.2	14.1	87.0	3.4	6.65	107.75	0.26	48	6.4
DR9	80	7.20	120.8	11.2	8.3	0.20	0.30	0.14	0.17	2.9	1.3	0.83	5.03	1.5	10.0	68.0	1.4	5.15	84.65	0.23	45	5.5
DR10	90	7.20	121.2	11.3	8.2	0.20	0.39	0.14	0.12	2.7	2.1	0.89	5.69	2.5	11.5	55.0	1.4	5.34	74.34	0.17	51	6.7
DR11	100	7.24	121.3	10.9	8.2	0.05	0.45	0.19	0.10	2.8	1.8	0.93	5.53	2.2	11.4	72.0	8.1	9.25	94.85	0.22	46	6.9
DR12	110	7.32	122.1	10.8	8.1	0.25	0.25	0.15	0.08	2.7	1.8	0.88	5.38	1.0	11.5	68.0	1.6	5.86	86.36	0.23	52	8.1
DR13	120	7.39	120.2	10.7	8.3	0.15	0.24	0.11	0.09	2.8	1.2	0.74	4.74	2.2	11.2	75.0	3.8	3.91	92.31	0.26	34	5.3
DR14	130	7.47	120.3	10.7	8.3	0.25	0.31	0.15	0.08	3.1	1.5	0.70	5.30	1.5	12.4	70.0	2.5	3.43	87.33	0.27	45	3.8
DR15	140	7.43	121.1	10.7	8.0	0.15	0.33	0.15	0.08	4.6	1.4	0.96	6.96	2.9	16.0	88.0	5.7	4.28	111.18	0.26	51	7.4
DR16	150	7.52	120.1	10.6	7.8	0.75	0.75	0.63	0.07	4.7	1.5	2.13	8.33	3.2	15.9	140.0	32.4	69.74	228.84	0.52	349	70.7

NH$_4$, NO$_3$, DON, UREA all as N Detection limits: DRP 0.5; NO$_3$-N 0.5; NH$_4$-N 1.0 mg m^{-3}

* = analysed by wet digest method, ** = analysed by CHN combustion furnace method.

Lake Taupo biannual nutrient database **1994-1995**

Collection date:- 27 October 1994 Secchi Depth = 11.7 m

ID	Depth	Temp	DO	BOD$_5$	SS	VSS	Chlor_*a*	DRP	DOP	PP	TP	NH$_4$	NO$_3$	DON	UREA	PN*	TN	DOC	PC	PN**	LEAD
	m	C	g m^{-3}	g m^{-3}	g m^{-3}	g m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	g m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}
MM1	1	11.7	10.5	0.30	0.93	0.55	1.16	1.6	0.7	2.5	4.8	1.1	0.2	61	0.1	16.6	78.9	0.67	193.3	20.3	0.22
MM2	10	11.5	10.6	0.35	0.86	0.49	0.97	1.5	0.4	2.5	4.4	2.2	0.1	50	<0.1	15.2	67.5	0.42	203.8	19.0	
MM3	20	11.5	10.8	0.70	0.87	0.58	0.92	1.2	1.1	2.8	5.1	5.1	<0.1	49	0.2	17.4	71.5	0.40	254.5	19.6	
MM4	30	11.3	10.7	0.30	0.86	0.54	0.99	1.2	0.0	2.3	3.5	<0.4	2.5	88	8.3	13.7	104.2	0.64	199.1	18.9	
MM5	40	10.9	10.5	0.05	0.83	0.49	0.97	1.0	1.4	2.1	4.5	0.4	<0.1	49	1.6	12.4	61.8	0.55	193.7	17.5	
MM6	50	10.9	10.4	0.15	0.85	0.48	0.83	1.0	0.9	2.2	4.1	<0.4	1.1	70	6.4	14.9	86.0	0.37	182.0	16.6	
MM7	60	10.8	10.4	0.00	1.04	0.53	0.88	1.1	0.9	2.1	4.1	<0.4	<0.1	47	1.0	13.6	60.6	0.46	184.6	20.0	
MM8	70	10.7	10.4	0.10	1.23	0.54	1.18	1.1	1.2	2.3	4.6	2.6	0.4	57	1.6	14.7	74.7	0.96	198.7	23.0	
MM9	80	10.6	10.4	0.35	1.07	0.45	1.37	1.0	1.4	2.4	4.8	1.2	0.1	47	1.0	15.3	63.6	0.51	154.4	22.6	
MM10	90	10.5	10.4	0.10	1.24	0.48	1.79	1.0	1.1	1.9	4.0	1.5	<0.1	43	1.3	15.6	60.1	0.48	152.0	22.0	
MM11	100	10.5	10.2	0.10	1.22	0.49	1.76	1.2	1.0	2.5	4.7	1.5	0.4	58	1.8	17.9	77.8	1.21	183.7	33.9	
MM12	110	10.5	10.3	0.45	1.15	0.48	1.78	1.4	0.4	3.0	4.8	1.4	0.4	52	1.9	16.8	70.6	0.65	105.8	28.4	
MM13	120	10.4	10.2	0.00	0.96	0.41	1.94	1.1	0.7	2.8	4.6	<0.4	0.6	61	1.6	16.7	78.4	1.00	106.7	29.8	
MM14	130	10.4	9.8	0.00	1.07	0.41	2.37	1.0	1.2	2.6	4.8	6.8	0.9	73	5.5	20.8	101.5	0.53	157.6	23.7	
MM15	140	10.4	9.8	0.00	1.63	0.57	2.32	1.1	1.1	2.3	4.5	3.7	0.9	61	1.9	20.6	86.2	0.44	176.0	19.2	0.36
MM16	150	10.3	9.9	0.25	1.73	0.75	2.49	1.8	0.8	2.3	4.9	4.2	1.9	60	12.1	39.6	105.7	0.57	303.6	44.0	1.09
MM17	Tube				0.99	0.53	0.84	1.3	1.0	2.0	4.3	0.5	0.2	39	3.1	15.9	55.6	0.53			

Collection date:- 19 April 1995 Secchi Depth = 16.1 m

ID	Depth	Temp	DO	BOD$_5$	SS	VSS	Chlor_*a*	DRP	DOP	PP	TP	NH$_4$	NO$_3$	DON	UREA	PN*	TN	DOC	PC	PN**	LEAD
	m	C	g m^{-3}	g m^{-3}	g m^{-3}	g m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	g m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}
SZ1	1	18.4	9.2	0.10	0.22	0.22	0.95	3.3	1.7	1.3	6.3	3.6	0.9	83	7.7	14.6	102.1	0.70	160.5	16.8	<0.5
SZ2	10	18.2	9.3	0.15	0.28	0.28	0.89	2.2	1.2	1.5	4.9	2.0	0.8	59	6.5	13.5	75.3	0.68	189.0	18.1	<0.5
SZ3	20	18.2	9.2	0.25	0.24	0.24	0.80	1.3	0.0	1.4	2.7	1.0	1.0	56	4.5	10.7	68.7	0.60	153.5	14.5	
SZ4	30	16.5	9.3	0.50	0.26	0.26	1.35	1.3	1.0	1.6	3.9	1.2	0.7	55	8.4	13.4	70.3	0.60	151.5	14.7	<0.5
SZ5	40	12.5	9.7	0.45	0.16	0.16	0.98	1.1	0.2	1.2	2.5	2.0	1.0	47	4.4	8.0	58.0	0.60	111.0	8.6	
SZ6	50	11.6	9.5	0.60	0.10	0.10	0.86	2.0	0.5	1.2	3.7	1.7	1.3	47	5.3	8.8	58.8	0.60	119.0	10.5	
SZ7	60	11.1	9.5	0.30	0.07	0.07	0.73	1.0	1.1	1.2	3.3	0.5	5.4	40	5.3	7.0	52.9	0.50	83.8	9.0	
SZ8	70	10.9	9.5	0.55	0.04	0.04	0.45	1.4	0.7	1.3	3.4	0.5	7.7	39	6.2	8.7	55.9	0.55	97.4	11.1	
SZ9	80	10.8	9.0	0.40	0.10	0.10	0.35	1.6	0.0	1.0	2.6	0.5	11.3	36	3.2	6.1	53.9	0.53	75.5	8.2	
SZ10	90	10.7	8.7	0.30	0.07	0.07	0.25	1.3	0.5	1.4	3.2	0.5	15.7	40	6.1	9.8	66.0	0.50	92.5	9.6	
SZ11	100	10.7	8.6	0.75	0.01	0.01	0.23	2.8	0.1	0.8	3.7	0.4	18.4	37	6.3	8.2	64.0	0.60	68.7	6.3	
SZ12	110	10.7	8.3	0.50	0.09	0.09	0.20	2.1	1.0	1.3	4.4	0.5	20.4	41	4.4	12.4	74.3	0.55	99.0	14.0	
SZ13	120	10.7	8.2	0.40	0.05	0.05	0.16	2.5	0.0	0.9	3.4	0.5	22.0	37	3.5	4.8	64.3	0.50	62.1	4.5	
SZ14	130	10.7	8.0	0.70	0.00	0.00	0.17	3.1	0.0	1.0	4.1	0.6	26.5	45	3.5	5.9	78.0	0.55	77.0	7.4	
SZ15	140	10.6	7.8	1.00	0.28	0.25	0.17	4.1	0.0	1.7	5.8	0.5	30.7	44	3.6	11.2	86.4	0.60	133.5	12.4	<0.5
SZ16	150	10.6	7.5	2.05	49.47	5.58	64.05	38.9	1.4	*	40.3	1.7	40.9	48	11.4	*	90.6	0.75	*	*	<0.5
Surficial sediment																					10.5

* = Sediment contamination, sample not filtered for analysis.

NH$_4$, NO$_3$, DON, UREA all as N

Detection limits: DRP 0.5; NO$_3$-N 0.5; NH$_4$-N 1.0 mg m^{-3}

* = analysed by wet digestion method, ** = analysed by CHN combustion furnace method.

Appendix 5. Phytoplankton data

In this report phytoplankton abundance is reported in cell counts per ml and biovolume per ml. In the previous system reporting only algal dominance, “Dominance” (rank 1 = dominant to rank 10 = rare), was calculated from algal biovolume. For continuance of the Dominance format, the species composition is ranked by biovolume.

Note: reporting counts as cells per ml rounded to a whole number may result in cell counts of “0” despite a large biovolume where the algal species is large or colonial e.g., *Botryococcus braunii*

The new algal data has been added to this report and the data from the previous year retained to accumulate, as has been done with temperature, DO, and nutrient data.

Note: *Leptolyngbya* sp. cells on 07/09/2009 (highlighted) are likely to have been washed off something rather than being local in 150 m of water.

Name changes:

Anabaena has changed to *Dolichospermum* as of August 2009. It will initially be referred to as follows: *Dolichospermum sp*. (formally; *Anabaena sp*.).

Units of biomass are listed as “µm^3” in the following tables. The units are actually µm^3 /mL.

From the 2010/11 monitoring period, phytoplankton data have been provided from a depth of 50m, which generally coincides with the deep chlorophyll *a* maxima in the lake. This sample was collected by van Dorne bottle and is distinguished from the 10-m tube sample by being placed in a separate table for the same dates as the 10-m tube sample.

Lake Taupo phytoplankton enumeration (10-m tube) 2011-12

Cell counts and biovolume

Cells per ml numbers may be affected by rounding

Sample code	XK1	XK1	XY1	XY1	XY4	XY4	ZG1	ZG1	ZY1	ZY1	ZY4	ZY4	BC1	BC1	BC4	BC4	CL1	CL1	CL4	CL4	ED1	ED1	FH1	FH1	HD1	HD1	JA1	JA1	JA4	JA4	KW1	KW1	LT1	LT1	LT4	LT4	LT6	LT6	NA1	NA1
Sampling date	24/08/2011	24/08/2011	7/09/2011	7/09/2011	28/09/2011	28/09/2011	25/10/2011	25/10/2011	8/11/2011	8/11/2011	22/11/2011	22/11/2011	8/12/2011	8/12/2011	22/12/2011	22/12/2011	12/01/2012	12/01/2012	26/01/2012	26/01/2012	16/02/2012	16/02/2012	7/03/2012	7/03/2012	10/04/2012	10/04/2012	7/05/2012	7/05/2012	31/05/2012	31/05/2012	14/06/2012	14/06/2012	3/07/2012	3/07/2012	18/07/2012	18/07/2012	18/07/2012	18/07/2012	1/08/2012	1/08/2012
Species composition by class	Cell	Biovolume	Cell	Biovolume	Cell	Biovolume	Cell	Biovolume	Cell	Biovolume	Cell	Biovolume	Cell	Biovolume	Cell	Biovolume	Cell	Biovolume	Cell	Biovolume	Cell	Biovolume	Cell	Biovolume	Cell	Biovolume	Cell	Biovolume	Cell	Biovolume	Cell	Biovolume	Cell	Biovolume	Cell	Biovolume	Cell	Biovolume	Cell	Biovolume
	(per ml)	(µm^3)	(per ml)	(µm^3)	(per ml)	(µm^3)	(per ml)	(µm^3)	(per ml)	(µm^3)	(per ml)	(µm^3)	(per ml)	(µm^3)	(per ml)	(µm^3)	(per ml)	(µm^3)	(per ml)	(µm^3)	(per ml)	(µm^3)	(per ml)	(µm^3)	(per ml)	(µm^3)	(per ml)	(µm^3)	(per ml)	(µm^3)	(per ml)	(µm^3)	(per ml)	(µm^3)	(per ml)	(µm^3)	(per ml)	(µm^3)	(per ml)	(µm^3)
Blue greens (Cyanophyceae)																																								
Dolichospermum c.f. lemmermannii (formally; Anabaena c.f. lemmermannii)	0.0	0	0.0	0	0.6	74	2.1	238	0.9	99	0.8	97	5.2	606	3.1	361	10.0	1158	3.0	347	17.5	2032	5.5	643	25.2	2923	45.9	5329	6.1	703	10.4	1211	0.9	100	0.0	0	0.0	0	0.0	0
***Leptolyngbya* sp.**	0.0	0	0.1	1	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Anabaena planktonica/Dolichospermum planctonicum	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	1.4	567	1.8	698	0.4	168	0.1	44	0.0	0	9.0	3575	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Anabaena flos-aquae	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
***Anabaena* sp./ *Dolichospermum* sp.**	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Anabaena circinalis / Dolichospermum circinalis	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	1.8	278	0.0	0	1.8	278	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
***Chroococcus* sp.**	0.0	1	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
***Aphanocapsa* sp.**	0.0	0	0.7	6	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
***Heteroleibleinia* sp.cf**	0.0	0			0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	4.4	40
***Microcystis* sp.**	0.0	0	2.2	46	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	6.5	137
***Snowella* sp.**	0.0	0	1.0	24	0.0	0	0.0	0	0.0	0	1.7	42	0.0	0	1.7	42	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
***Phormidium* sp.**	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.6	13	0.0	0	0.0	0	0.0	0	0.0	0	10.2	213	0.0	0	0.0	0
***Aphanothece* sp.**	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.3	3	0.3	3	0.0	0
***Aphanizomenon* sp.**	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
***Pseudanabaena* sp.**	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.4	7
Greens (Chlorophyceae)							0.0	0	0.0	0			0.0	0							0.0	0																		
Actinastrum hantschii	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Monoraphidium* sp. / *Ankistrodesmus falcatus	20	841	12	500	13	545	10	418	16	688	0	0	2	74	0	0	5	221	61	2555	44	1867	50	2090	12	500	32	1341	134	5612	34	1431	65	2727	19	818	30	1278	88	3681
Stichococcus contortus	4	78	0	0	6	117	0	0	0	0	0	0	0	0	0	0	0	0	18	316	0	0	0	0	0	0	0	0	22	390	5	97	0	0	0	0	0	0	30	536
Kirchneriella contorta	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	71	0	0	4	143	0	0	0	0	0	0
Botryococcus braunii (colonies)	0.0	0	0.0	0	0.0	0	0	0	0.0	2861	0.0	0	0	0	0.0	47554	0.0	0	0.0	0	0	0	0.0	0	0.0	340310	0.0	14648	0.0	0	0.0	0	0.0	2788	0.0	0	0.0	2142	0.0	0
***Chlamydomonas* sp.**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	227
***Crucigeniella* sp**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dictyosphaerium	0	0	0	0	34	1845	10	547	0	0	14	774	6	322	8	446	0	0	11	579	35	1931	17	952	14	774	57	3154	19	1071	6	357	12	655	3	179	6	354	5	268
Gloeocystis planctonica	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Elakotothrix gelatinosa	5	568	3	341	3	341	1	123	4	369	2	227	0	0	2	227	0	0	3	307	0	31	0	0	0	0	0	0	1	114	0	0	3	341	1	114	1	61	0	0
Eudorina elegans	28	7063	0	0	19	4847	1	300	0	0	0	0	0	0	0	31	0	0	0	0	0	0	0	10	0	0	0	0	0	61	0	0	0	49	0	0	2	449	0	0
***Lagerheimia* sp.**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nephrocytium agardhianum	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nephrocytium lunatum	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
***Oocytsis* sp.**	9	1229	12	1767	6	845	1	166	0	0	2	307	2	332	14	1997	1	166	1	208	0	0	5	691	4	615	2	307	2	307	6	845	6	845	8	1076	16	2243	6	922
Planktosphaeria gelatinosa	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Quadrigula lacustrus	0	0	1	177	0	0	0	0	0	0	4	710	0	0	4	710	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
***Scenedesmus* sp.**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	113	0	0	0	0	1	28	0	0	2	84
Sphaerocystis schroeteri	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0
Tetraedon gracile	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Volvox aureus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Westella botryoides	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	7	0	0	0	0	1	76	0	10
***Apiocystis* sp.**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Paulschulzia sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diatoms (Bacillariophyceae)							0	0	0	0			0	0							0	0																		
Asterionella formosa	365	102098	148	41506	37	10452	27	7535	4	983	12	3333	9	2621	9	2424	1	410	0	0	3	819	23	6514	4	1060	4	1212	23	6514	8	2121	30	8331	32	9089	35	9664	65	18329
Aulacoseira granulata	0	0	31	9559	32	9895	4	1088	2	544	0	0	7	2176	0	0	0	0	0	0	2	635	1	335	0	0	0	0	0	0	4	1174	9	2851	0	0	6	1814	17	5367
Aulacoseira granulata* var. *angustissima	47	12237	49	12659	86	22365	60	15514	0	0	4	1125	0	0	1	281	0	0	0	0	0	0	2	422	12	3095	1	141	7	1829	2	563	6	1688	9	2251	8	2129	2	563
***Aulacoseria* sp.**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cocconeis	0	0	0	0	1	566	0	0	0	0	0	0	0	0	0	0	0	0	2	1224	0	0	0	0	0	0	0	0	2	849	0	0	1	566	0	0	0	0	0	0
Cyclotella stelligera	6	952	5	779	11	1818	5	842	4	562	8	1298	4	562	8	1212	2	281	2	281	1	140	0	0	2	260	1	173	1	87	1	173	2	346	0	0	0	0	4	692
Fragilaria crotonensis	120	42803	26	9297	6	2130	62	22200	49	17592	182	65076	127	45446	117	42028	57	20315	171	61363	129	46075	78	27890	129	46095	64	23048	22	7941	59	21111	30	10652	23	8134	82	29530	62	22273
Fragilaria sp.											0	0			0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
***Nitzschia* sp.**	3	1266	4	1688	3	1266	1	456	4	1597	0	0	4	1369	0	0	2	913	1	456	5	1825	8	2954	5	2110	7	2743	7	2743	1	422	3	1266	1	211	1	456	3	1055
***Synedra* sp.**	1	213	4	1492	1	213	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
***Amphora* sp.**	1	566	0	0	1	283	0	0	0	0	0	0	0	0	0	0	0	0	2	1224	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	283	0	0	0	0
***Eunotia* sp.**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Selenastrum minutum											0	0			0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Small unknown diatom sp.	3	298	0	0	3	357	0	0	0	0	0	0	0	0	1	119	0	0	6	708	0	0	3	298	0	0	0	0	4	417	0	0	1	60	1	60	0	0	2	238
Desmids (Mesotaeniaceae, Desmidiaceae)							0	0	0	0			0	0							0	0	0	0																
Closterium aciculare	0	0	0	0	0	0	0	0	0	0	1	324	0	0	1	324	0	0	0	0	0	0	0	0	1	324	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Closterium acutum* var. *variable	2	612	2	816	1	408	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	204	0	0	0	102	1	204	1	204	2	816	2	612	1	441	1	204
Cerasterias staurastroides	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
***Mougeotia* sp.**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
***Spirogyra* sp.**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
***Staurastrum* sp.**	0	0	0	0	0	0	0	0	1	80	0	0	0	0	0	0	0	0	1	160	0	40	0	0	0	0	0	6	0	3	0	0	0	3	0	11	0	0	0	0
Staurastrum tangaroaii	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	8	0	0	0	0
Staurodesmus unicorns* var. *gracilis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	20	0	2000	0	0
Chrysophtya (Chrysophyceae)							0	0	0	0			0	0							0	0																		
***Dinobryon* sp.**	4	255	0	0	0	0	143	8422	17	1001	2	128	171	10113	88	5203	2	138	28	1657	5	293	10	606	2	96	14	798	30	1756	2	128	7	415	0	0	0	0	0	0
***Cryptomonas* sp.**	0	0	0	0	1	156	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	390	1	156	0	0	0	0	0	0	0	0	0	0
***Synura* sp.**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	523	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dinoflagellates (Dinophyceae)			0	0			0	0	0	0	0	0	0	0							0	0																		
Ceratium hirundinella	0	0	0	0	1	11361	1	12285	1	12285	0	4620	1	24570	0	5250	0	0	0	0	0	0	0	630	0	63	0	0	0	0	0	630	0	0	0	420	0	210	0	0
***Gymnodinium* sp. 1**	0	0	0	0	0	0	4	3861	4	3861	0	0	12	13514	1	595	7	7722	0	0	32	34749	1	1190	1	595	1	595	0	0	1	595	1	1190	0	0	0	0	1	595
***Gymnodinium* sp. 2**	0	0	0	0	0	0	1	11700	0	0	0	1600	1	23400	0	2200	3	58500	0	0	1	23400	0	400	0	0	0	2400	0	0	0	1000	0	0	0	0	0	0	0	0
***Peridinium* sp.**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	9360	2	9360	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
***Gonyaulax* sp.**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	8656	4	8656	4	7574	0	0	1	2164	0	0	0	0	0	0	0	0
Flagellates 5µm							0	0	0	0			0	0							0	0																		
Flagellates < 5µm/unicells	18	625	121	4241	17	587	162	5672	121	4218	103	3598	76	2662	159	5567	77	2682	94	3296	90	3153	85	2973	78	2746	45	1591	30	1060	127	4431	52	1818	162	5662	163	5692	17	606

Lake Taupo phytoplankton enumeration (50 m van Dorne) 2011-12

Cell counts and biovolume

Cells per ml numbers may be affected by rounding

Sample code	XK3	XK3	XY3	XY3	XY6	XY6	ZG3	ZG3	ZY3	ZY3	ZY6	ZY6	BC3	BC3	BC6	BC6	CL3	CL3	CL6	CL6	ED3	ED3	FH3	FH3	HD3	HD3	JA3	JA3	JA6	JA6	KW3	KW3	LT3	LT3	LT6	LT6	NA3	NA3
Sampling date	24/08/2011	24/08/2011	7/09/2011	7/09/2011	28/09/2011	28/09/2011	25/10/2011	25/10/2011	8/11/2011	8/11/2011	22/11/2011	22/11/2011	8/12/2011	8/12/2011	22/12/2011	22/12/2011	12/01/2012	12/01/2012	26/01/2012	26/01/2012	16/02/2012	16/02/2012	7/03/2012	7/03/2012	10/04/2012	10/04/2012	7/05/2012	7/05/2012	31/05/2012	31/05/2012	14/06/2012	14/06/2012	3/07/2012	3/07/2012	18/07/2012	18/07/2012	1/08/2012	1/08/2012
Species composition by class	Cell	Biovolume	Cell	Biovolume	Cell	Biovolume	Cell	Biovolume	Cell	Biovolume	Cell	Biovolume	Cell	Biovolume	Cell	Biovolume	Cell	Biovolume	Cell	Biovolume	Cell	Biovolume	Cell	Biovolume	Cell	Biovolume	Cell	Biovolume	Cell	Biovolume	Cell	Biovolume	Cell	Biovolume	Cell	Biovolume	Cell	Biovolume
	(per ml)	(µm^3)	(per ml)	(µm^3)	(per ml)	(µm^3)	(per ml)	(µm^3)	(per ml)	(µm^3)	(per ml)	(µm^3)	(per ml)	(µm^3)	(per ml)	(µm^3)	(per ml)	(µm^3)	(per ml)	(µm^3)	(per ml)	(µm^3)	(per ml)	(µm^3)	(per ml)	(µm^3)	(per ml)	(µm^3)	(per ml)	(µm^3)	(per ml)	(µm^3)	(per ml)	(µm^3)	(per ml)	(µm^3)	(per ml)	(µm^3)
Blue greens (Cyanophyceae)																																						
Dolichospermum c.f. lemmermannii (formally; Anabaena c.f. lemmermannii)	0.2	24	0.0	0	0.0	0	0.0	0	10.4	1204	0.1	12	0.0	0	0.0	0	6.1	709	13.5	1569	2.1	247	14.2	1645	2.7	318	0.0	0	0.4	49	0.4	42	0.0	0	0.0	0	0.0	0
Leptolyngbya sp.	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Anabaena planktonica/Dolichospermum planctonicum	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.9	363	2.3	906	0.0	0	0.0	0	1.3	527	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Anabaena flos-aquae	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Anabaena sp./ *Dolichospermum* sp.	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.2	22	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Anabaena circinalis / Dolichospermum circinalis	0.2	50	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Chroococcus sp.	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Aphanocapsa sp.	0.6	5	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	4.0	36	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Heteroleibleinia sp.cf	0.0	0			0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.9	8
Microcystis sp.	0.8	16	1.7	35	1.0	20	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Snowella sp.	0.0	0	0.8	21	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	2.6	65	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.2	6	0.0	0	0.0	0	0.0	0
Phormidium sp.	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Aphanothece sp.	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.3	3	0.0	0
Aphanizomenon sp.	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Pseudanabaena sp.	0.0	0	0.0	0	0.2	3	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.3	5	0.3	5	0.0	0	0.0	0	0.2	5	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Greens (Chlorophyceae)							0	0	0	0			0	0							0	0																
Actinastrum hantschii	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Monoraphidium sp. / *Ankistrodesmus falcatus*	70	2948	2	98	110	4619	34	1425	26	1081	11	442	9	393	3	123	16	688	102	4300	41	1720	42	1769	11	467	32	1351	16	663	74	3096	70	2948	30	1278	71	2973
Stichococcus contortus	19	337	0	0	44	790	38	684	16	295	0	0	11	190	0	0	32	569	88	1580	60	1074	0	0	0	0	11	190	16	284	1	21	0	0	0	0	52	937
Kirchneriella contorta	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	77	0	0	0	0	0	0	0	0	0	0	0	0	22	734	0	0	0	0
Botryococcus braunii (colonies)	0.0	433	0.0	0	0.0	0	0	0	0	0	0.0	0	0.0	19668	0.0	13471	0.0	63155	0.0	0	0	0	0.0	0	0.0	41063	0.0	0	0.0	0	0.0	1352426	0.0	0	0.0	2142	0.0	0
Chlamydomonas sp.	0	0	0	0	2	491	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	246
Crucigeniella sp	0	0	2	152	0	0	0	0	0	0	2	114	0	0	0	0	4	228	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	304
Dictyosphaerium	29	1577	0	0	7	386	58	3185	5	257	0	27	26	1416	0	18	0	0	22	1223	168	9266	0	0	7	386	0	0	13	740	31	1705	26	1448	6	354	42	2317
Gloeocystis planctonica	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Elakotothrix gelatinosa	11	1106	0	0	0	0	2	246	0	0	1	123	0	0	0	0	1	123	6	676	0	0	1	123	4	369	1	123	0	0	8	799	0	0	1	61	2	246
Eudorina elegans	21	5391	0	0	11	2845	18	4493	0	0	9	2246	0	0	0	0	0	0	16	4193	7	1797	0	0	0	0	0	0	0	0	7	1797	15	3894	2	449	0	0
Lagerheimia sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nephrocytium agardhianum	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nephrocytium lunatum	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oocytsis sp.	6	831	6	831	3	415	0	0	0	0	10	1412	2	332	9	1246	0	0	13	1828	9	1329	1	83	4	498	4	581	0	0	22	3157	5	748	16	2243	5	748
Planktosphaeria gelatinosa	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Quadrigula lacustrus	0	0	2	384	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scenedesmus sp.	2	122	0	0	0	0	0	0	0	0	7	365	0	0	0	0	0	0	0	0	9	487	0	0	0	0	0	0	1	61	0	0	0	0	0	0	0	0
Sphaerocystis schroeteri	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tetraedon gracile	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	386	0	0	0	0	0	0
Volvox aureus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Westella botryoides	0	0	4	228	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	76	0	0
Apiocystis sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Paulschulzia sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	298	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diatoms (Bacillariophyceae)							0	0	0	0			0	0							0	0																
Asterionella formosa	420	117608	170	47502	44	12449	31	8681	11	2948	18	4914	3	819	2	491	25	6880	26	7371	19	5242	1	164	8	2293	4	983	7	1966	16	4423	44	12285	35	9664	111	30958
Aulacoseira granulata	22	6710	35	10881	50	15596	46	14145	23	7073	0	0	23	7254	0	0	11	3446	17	5259	3	907	1	363	1	363	0	0	0	0	2	725	0	0	6	1814	19	5803
Aulacoseira granulata var. *angustissima*	76	19773	82	21446	111	28747	52	13537	25	6388	26	6845	0	0	9	2434	0	0	4	1065	0	0	6	1673	5	1217	7	1901	12	3042	3	761	4	913	8	2129	0	0
Aulacoseria sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cocconeis	4	1836	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	612	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	306	0	0	0	0
Cyclotella stelligera	9	1404	7	1123	16	2527	19	3089	8	1217	4	562	2	374	2	281	4	562	4	655	0	47	1	187	0	0	0	0	0	0	1	94	2	374	0	0	2	374
Fragilaria crotonensis	73	26179	64	22828	36	12985	101	36231	37	13194	40	14241	63	22409	47	16964	81	29111	84	29948	144	51520	53	18849	11	3770	5	1675	30	10681	39	14032	91	32462	82	29530	37	13404
Fragilaria sp.											0	0			1	419							0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	838
Nitzschia sp.	6	2282	1	228	11	4107	4	1369	2	684	1	228	1	228	1	456	6	2510	11	4335	7	2738	2	913	17	6616	8	3194	6	2282	4	1597	2	913	1	456	2	684
Synedra sp.	2	691	0	0	1	461	0	0	0	0	0	0	1	230	0	0	0	0	1	230	0	0	0	0	0	0	0	0	1	230	0	0	0	0	0	0	0	0
Amphora sp.	1	306	0	0	1	612	0	0	0	0	0	0	1	306	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	1836
Eunotia sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Selenastrum minutum											0	0			0	0							0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Small unknown diatom sp.	2	257	0	0	4	386	3	322	0	0	0	0	9	965	0	0	0	0	2	257	0	0	6	708	0	0	0	0	2	257	0	0	2	193	0	0	3	322
Desmids (Mesotaeniaceae, Desmidiaceae)							0	0	0	0			0	0							0	0	0	0														
Closterium aciculare	0	0	0	0	0	0	0	0	0	0	1	350	0	0	0	0	0	0	0	0	0	0	0	0	1	701	0	0	0	0	0	0	0	0	0	0	0	0
Closterium acutum var. *variable*	1	441	1	221	2	882	1	441	1	221	1	221	2	662	0	0	0	0	4	1544	0	0	0	0	0	0	2	662	1	441	1	221	2	662	1	441	1	221
Cerasterias staurastroides	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mougeotia sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spirogyra sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Staurastrum sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	0	0	0	0
Staurastrum tangaroaii	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Staurodesmus unicorns var. *gracilis*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	2000	0	0
Chrysophtya (Chrysophyceae)							0	0	0	0			0	0							0	0																
Dinobryon sp.	16	932	2	104	33	1933	53	3141	0	0	0	0	0	0	13	759	0	0	0	0	6	345	31	1829	7	414	1	69	0	0	3	173	12	725	0	0	19	1139
Cryptomonas sp.	0	0	1	84	0	0	0	0	0	0	0	0	1	168	0	0	1	168	2	253	1	168	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Synura sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dinoflagellates (Dinophyceae)			0	0			0	0	0	0	0	0	0	0							0	0																
Ceratium hirundinella	1	12285	0	0	1	12285	0	0	0	0	0	420	0	0	0	840	0	0	1	12285	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	210	0	0
Gymnodinium sp. 1	1	644	0	0	0	0	1	644	2	1931	0	0	1	1287	0	0	0	0	0	0	0	0	2	1931	0	0	0	0	0	0	0	0	1	1287	0	0	0	0
Gymnodinium sp. 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1200	0	400	0	1200	0	0	0	3600	0	0	0	0	0	0
Peridinium sp.	0	0	0	0	1	2340	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2340	0	0	0	0
Gonyaulax sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	25740	0	0	0	0	0	0	1	1170	0	0	0	0	0	0
Flagellates 5µm							0	0	0	0			0	0							0	0																
Flagellates < 5µm/unicells	64	2232	78	2744	53	1863	137	4812	76	2662	38	1331	78	2744	56	1945	90	3153	58	2027	83	2907	129	4525	99	3481	66	2314	29	1024	184	6429	50	1761	163	5692	67	2334

Lake Taupo phytoplankton enumeration (10-m tube) 2010-11

Cell counts and biovolume

Cells per ml numbers may be affected by rounding

Sample code	FY1	FY1	FY5	FY5	HQ1	HQ1	IV4	IV4	KC1	KC1	KS1	KS1	LE1	LE1	LV1	LV1	MJ1	MJ1	MJ4	MJ4	OP1	OP1	PL1	PL1	QN1	QN1	RK1	RK1	TQ1	TQ1	UI1	UI1	UX1	UX1	UT1	UT1	WU1	WU1
Sampling date	10/08/2010	10/08/2010	24/08/2010	24/08/2010	13/09/2010	13/09/2010	26/10/2010	26/10/2010	10/11/2010	10/11/2010	25/11/2010	25/11/2010	8/12/2010	8/12/2010	21/12/2010	21/12/2010	11/01/2011	11/01/2011	27/01/2011	27/01/2011	17/02/2011	17/02/2011	1/03/2011	1/03/2011	15/03/2011	15/03/2011	13/04/2011	13/04/2011	10/05/2011	10/05/2011	31/05/2011	31/05/2011	22/06/2011	22/06/2011	5/07/2011	5/07/2011	9/08/2011	9/08/2011
Species composition by class	Cell	Biovolume	Cell	Biovolume	Cell	Biovolume	Cell	Biovolume	Cell	Biovolume	Cell	Biovolume	Cell	Biovolume	Cell	Biovolume	Cell	Biovolume	Cell	Biovolume	Cell	Biovolume	Cell	Biovolume	Cell	Biovolume	Cell	Biovolume	Cell	Biovolume	Cell	Biovolume	Cell	Biovolume	Cell	Biovolume	Cell	Biovolume
	(per ml)	(µm^3)	(per ml)	(µm^3)	(per ml)	(µm^3)	(per ml)	(µm^3)	(per ml)	(µm^3)	(per ml)	(µm^3)	(per ml)	(µm^3)	(per ml)	(µm^3)	(per ml)	(µm^3)	(per ml)	(µm^3)	(per ml)	(µm^3)	(per ml)	(µm^3)	(per ml)	(µm^3)	(per ml)	(µm^3)	(per ml)	(µm^3)	(per ml)	(µm^3)	(per ml)	(µm^3)	(per ml)	(µm^3)	(per ml)	(µm^3)
Blue greens (Cyanophyceae)																																						
Dolichospermum c.f. lemmermannii (formally; Anabaena c.f. lemmermannii)	0.8	87	0.8	90	17.1	1980	27.5	3195	44.0	5106	11.2	1299	0.9	100	3.4	398	0.8	94	9.6	1118	5.7	660	21.4	2482	12.2	1411	34.7	4021	26.5	3072	8.5	991	0.1	14	0.2	23	0.0	0
Leptolyngbya sp.	1.3	14	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.7	7	1.2	13	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Anabaena planktonica/Dolichospermum planctonicum	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	2.7	1057	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Anabaena flos-aquae	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0			0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Anabaena sp./ *Dolichospermum* sp.	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	1.1	99	0.0	0
Anabaena circinalis / Dolichospermum circinalis	0.3	67	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	1.4	287	0.0	0	0.0	0
Chroococcus sp.	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.1	1	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.1	2
Aphanocapsa sp.	1.0	9	0.0	0	0.5	5	0.9	8	0.6	5	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	3.6	32	0.0	0	0.0	0	0.0	0	16.4	148	3.4	31
Heteroleibleinia sp.cf	0.0	0	0.0	0	0.0	0			0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0			22.7	409	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Microcystis sp.	0.4	8	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	1.5	32	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	1.8	37
Snowella sp.	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Phormidium sp.	0.0	0	0.0	0	0.4	9	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	6.6	139	0.0	0	0.5	11	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Aphanothece sp.	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Aphanizomenon sp.	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Pseudanabaena sp.	0.0	0	0.1	3	1.2	23	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.8	15	1.3	25	0.0	0	2.4	46	0.7	13	1.8	35	0.0	0	0.0	0	0.0	0	0.0	0	0.3	5
Greens (Chlorophyceae)																																			0.0	0		
Actinastrum hantschii	0	0	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Monoraphidium sp. / *Ankistrodesmus falcatus*	72	3022	128	5385	121	5090	151	6339	215	9043	77	3249	117	4931	50	2113	58	2431	105	4431	6	250	6	273	10	432	0	0	0	0	0	0	263	11043	184	7725	63	2636
Stichococcus contortus	29	526	32	584	60	1071	0	0	15	273	0	0	0	0	0	0	14	253	0	0	0	0	0	0	2	39	0	0	0	0	0	0	4	78	0	0	14	253
Kirchneriella contorta	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	107	2	71	0	0	0	0
Botryococcus braunii (colonies)	0.0	6160	0.0	18946	0.0	0	0.0	0	0.0	3178	0.0	0	0.0	21852	0.0	0	0.0	0	0.0	0	0.0	0	0.0	36000	0.0	0	0.0	12008	0.0	4358	0.0	16933	0.0	0	0.0	2674	0.0	1462
Chlamydomonas sp.	2	341	3	568	5	1022	0	0	0	0	0	0	0	0	0	0	2	341	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Crucigeniella sp	3	211	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dictyosphaerium	9	506	0	0	33	1815	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	803	1	30	6	357
Gloeocystis planctonica	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Elakotothrix gelatinosa	6	682	4	454	6	682	0	0	0	0	0	0	0	0	0	0	2	227	0	0	1	114	6	682	215	22552	2	227	0	0	0	0	2	227	2	227	13	1363
Eudorina elegans	16	4155	6	1662	6	1662	0	92	0	0	0	0	0	0	0	0	0	0	0	10	0	0	0	0	0	0	0	18	0	36	0	31	0	20	0	0	15	3878
Lagerheimia sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nephrocytium agardhianum	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nephrocytium lunatum	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oocytsis sp.	3	384	6	845	6	922	5	768	6	922	1	154	0	0	3	461	5	691	0	0	14	1997	38	5378	43	6146	44	6223	15	2074	14	1997	5	768	13	1844	4	615
Planktosphaeria gelatinosa	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Quadrigula lacustrus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	355	0	0
Scenedesmus sp.	0	0	8	394	10	535	2	113	0	0	2	113	0	0	1	56	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sphaerocystis schroeteri	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tetraedon gracile	0	0	0	0	0	0	0	0	0	0	2	238	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Volvox aureus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Westella botryoides	0	0	0	0	0	0	0	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	8	0	0
Apiocystis sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Paulschulzia sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diatoms (Bacillariophyceae)																																			0	0		
Asterionella formosa	155	43323	268	74983	319	89222	136	38173	68	19086	19	5302	16	4544	8	2272	6	1818	1	303	1	151	0	0	0	0	2	606	21	5756	35	9695	23	6362	17	4847	117	32871
Aulacoseira granulata	52	16268	81	24989	113	34884	144	44611	90	28008	34	10566	12	3690	4	1174	0	0	0	0	0	0	0	0	0	0	9	2683	0	0	0	0	0	0	3	839	4	1174
Aulacoseira granulata var. *angustissima*	57	14910	13	3376	14	3517	16	4079	16	4220	0	0	1	141	0	0	6	1688	5	1407	0	70	2	422	4	985	0	0	16	4220	13	3376	8	2110	10	2532	28	7174
Aulacoseria sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0
Cocconeis	5	2829	3	1415	2	849	0	0	2	849	0	0	2	1132	0	0	2	849	1	283	0	0	0	0	0	0	0	0	0	0	1	566	2	1132	0	0	1	566
Cyclotella stelligera	11	1818	8	1212	5	779	10	1558	5	779	1	87	2	260	0	0	2	260	1	87	0	0	0	0	2	260	2	260	2	346	4	692	10	1645	4	606	2	260
Fragilaria crotonensis	108	38542	122	43578	69	24597	2	775	25	8909	17	6004	0	0	1	194	14	5036	11	4067	3	968	0	0	0	0	9	3099	128	45902	36	12976	8	2711	4	1549	64	23048
Fragilaria sp.							12	4261	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	775	0	0	0	0	0	0	5	1743	0	0		
Nitzschia sp.	3	1266	2	633	9	3587	12	4642	32	12659	6	2321	4	1477	3	1266	3	1055	1	211	1	211	1	211	2	844	1	422	1	422	2	844	2	844	3	1055	5	1899
Synedra sp.	6	2345	11	4263	12	4903	1	426	3	1066	0	0	0	0	0	0	1	213	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Amphora sp.	0	0	0	0	1	283	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	283	0	0	0	0	1	566	0	0	0	0
Eunotia sp.	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Selenastrum minutum							4	476	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Small unknown diatom sp.	4	417	1	60	13	1428	2	179	3	357	0	0	2	179	1	60	2	179	1	119	0	0	0	0	0	0	0	0	2	179	0	0	5	536	14	1547	4	417
Desmids (Mesotaeniaceae, Desmidiaceae)							0	0																											0	0		
Closterium aciculare	2	1296	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	324	0	0
Closterium acutum var. *variable*	0	0	3	1020	4	1428	1	204	1	204	0	0	1	204	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	204
Cerasterias staurastroides	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mougeotia sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spirogyra sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Staurastrum sp.	0	0	0	0	1	148	0	0	0	0	0	0	1	74	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	148	1	148	0	0	0	0	0	0
Staurastrum tangaroaii	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Staurodesmus unicorns var. *gracilis*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chrysophtya (Chrysophyceae)																																			0	0		
Dinobryon sp.	5	287	0	0	37	2202	49	2873	173	10214	18	1053	4	255	2	96	0	0	0	0	4	255	13	766	32	1883	23	1341	0	0	0	0	8	479	0	0	0	0
Cryptomonas sp.	3	390	4	545	3	390	0	0	0	0	0	0	1	78	0	0	0	0	0	0	0	0	0	0	1	78	0	0	0	0	1	156	0	0	0	0	0	0
Synura sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dinoflagellates (Dinophyceae)																																			0	0		
Ceratium hirundinella	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	22722	0	3150	0	0
Gymnodinium sp. 1	0	0	0	0	4	4166	2	1785	0	0	0	0	0	0	1	1190	1	1190	2	2380	1	595	1	595	1	595	1	595	0	0	0	0	0	0	0	0	0	0
Gymnodinium sp. 2	0	0	0	0	0	0	1	10820	9	183940	0	0	0	0	1	10820	0	0	0	0	0	0	1	21640	0	0	0	0	0	0	0	0	0	0	0	800	0	0
Peridinium sp.	0	0	1	2164	0	0	0	0	0	0	0	0	7	28132	1	2164	4	17312	6	25968	0	0	0	0	1	2164	0	0	0	0	1	2164	0	0	0	0	0	0
Gonyaulax sp.	0	0	0	0	0	0	5	10820	0	0	24	47608	2	3246	4	8656	0	0	0	0	3	5410	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Flagellates 5µm																																			0	0		
Flagellates < 5µm/unicells	70	2443	84	2954	111	3901	105	3692	108	3787	181	6343	104	3654	102	3560	70	2462	65	2291	22	776	48	1685	39	1382	29	1004	30	1060	29	1004	36	1269	87	3049	47	1628

Lake Taupo phytoplankton enumeration (50 m van Dorne) 2010-11

Cell counts and biovolume

Cells per ml numbers may be affected by rounding

Sample code	FY3	FY3	FY7	FY7	HR1	HR1	IV6	IV6	KC3	KC3	KS3	KS3	LE3	LE3	LV3	LV3	MJ3	MJ3	MJ6	MJ6	OP3	OP3	PL3	PL3	QN3	QN3	RK3	RK3	TQ3	TQ3	UI3	UI3	UX3	UX3	UT3	UT3	WU3	WU3
Sampling date	10/08/2010	10/08/2010	24/08/2010	24/08/2010	13/09/2010	13/09/2010	26/10/2010	26/10/2010	10/11/2010	10/11/2010	25/11/2010	25/11/2010	8/12/2010	8/12/2010	21/12/2010	21/12/2010	11/01/2011	11/01/2011	27/01/2011	27/01/2011	17/02/2011	17/02/2011	1/03/2011	1/03/2011	15/03/2011	15/03/2011	13/04/2011	13/04/2011	10/05/2011	10/05/2011	31/05/2011	31/05/2011	22/06/2011	22/06/2011	5/07/2011	5/07/2011	9/08/2011	9/08/2011
Species composition by class	Cell	Biovolume	Cell	Biovolume	Cell	Biovolume	Cell	Biovolume	Cell	Biovolume	Cell	Biovolume	Cell	Biovolume	Cell	Biovolume	Cell	Biovolume	Cell	Biovolume	Cell	Biovolume	Cell	Biovolume	Cell	Biovolume	Cell	Biovolume	Cell	Biovolume	Cell	Biovolume	Cell	Biovolume	Cell	Biovolume	Cell	Biovolume
	(per ml)	(µm^3)	(per ml)	(µm^3)	(per ml)	(µm^3)	(per ml)	(µm^3)	(per ml)	(µm^3)	(per ml)	(µm^3)	(per ml)	(µm^3)	(per ml)	(µm^3)	(per ml)	(µm^3)	(per ml)	(µm^3)	(per ml)	(µm^3)	(per ml)	(µm^3)	(per ml)	(µm^3)	(per ml)	(µm^3)	(per ml)	(µm^3)	(per ml)	(µm^3)	(per ml)	(µm^3)	(per ml)	(µm^3)	(per ml)	(µm^3)
Blue greens (Cyanophyceae)																																						
Dolichospermum c.f. lemmermannii (formally; Anabaena c.f. lemmermannii)	0.9	101	0.5	53	0.0	0	15.5	1796	3.8	443	7.4	863	0.9	103	1.2	137	0.3	30	0.0	0	0.3	35	0.0	0	0.0	0	0.0	0	1.7	191	0.3	39	1.3	148	0.0	5	3.1	357
Leptolyngbya sp.	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Anabaena planktonica/Dolichospermum planctonicum	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.2	64	0.0	0	0.0	0	0.0	0	0.4	172	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Anabaena flos-aquae	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0			0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Anabaena sp./ *Dolichospermum* sp.	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.5	41	0.0	0	2.0	178	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Anabaena circinalis / Dolichospermum circinalis	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.1	19	0.0	0	0.0	0	0.0	0
Chroococcus sp.	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Aphanocapsa sp.	2.0	18	0.6	6	0.0	0	0.0	0	0.3	3	0.0	0	0.4	4	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	7.6	68	0.0	0
Heteroleibleinia sp.cf	0.0	0	0.0	0	0.0	0			0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0			0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Microcystis sp.	0.0	0	0.0	0	0.2	5	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	1.7	36
Snowella sp.	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.6	14	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Phormidium sp.	0.0	0	0.0	0	0.0	1	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Aphanothece sp.	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Aphanizomenon sp.	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Pseudanabaena sp.	0.0	0	0.2	3	0.0	0	0.1	2	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.1	2	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.3	5	0.0	0	0.0	0
Greens (Chlorophyceae)																																			0	0		
Actinastrum hantschii	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4	0	0	0	0	0	0	0	0	0	0	0
Monoraphidium sp. / *Ankistrodesmus falcatus*	60	2531	85	3587	100	4201	71	2998	74	3120	33	1400	107	4496	26	1106	97	4079	35	1450	7	295	55	2310	44	1867	30	1278	20	860	9	393	147	6167	159	6683	73	3071
Stichococcus contortus	37	674	67	1200	51	916	11	200	23	421	11	190	16	295	0	0	18	326	9	168	0	0	6	116	0	0	7	126	0	0	0	0	5	84	0	0	13	232
Kirchneriella contorta	0	0	0	0	2	77	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Botryococcus braunii (colonies)	0.0	10258	0.0	812	0.0	3448	0.0	3000	0.0	0	0.0	1200	0.0	0	0.0	200	0.0	0	0.0	0	0.0	600	0.0	52500	0.0	0	0.0	3069	0.0	9535	0.0	0	0.0	365	0.0	215	0.0	4753
Chlamydomonas sp.	4	860	3	614	1	246	0	0	0	0	0	0	3	614	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Crucigeniella sp	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dictyosphaerium	15	837	0	0	9	483	3	139	0	23	0	25	0	13	0	0	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	1	44	0	0
Gloeocystis planctonica	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Elakotothrix gelatinosa	6	614	8	860	5	491	0	0	5	491	0	0	0	0	0	0	5	491	1	123	0	0	0	0	1	123	0	0	1	123	0	0	2	184	1	123	4	430
Eudorina elegans	13	3444	9	2246	0	0	0	0	16	4193	18	4643	12	2995	0	0	10	2546	33	8387	1	300	0	0	6	1647	5	1198	9	2246	9	2246	0	0	0	0	4	1048
Lagerheimia sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nephrocytium agardhianum	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nephrocytium lunatum	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oocytsis sp.	9	1329	9	1246	12	1661	11	1495	4	498	1	166	1	166	2	332	8	1163	2	332	2	332	8	1080	4	498	5	748	15	2077	7	997	22	3074	8	1163	8	1080
Planktosphaeria gelatinosa	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Quadrigula lacustrus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	384	0	0
Scenedesmus sp.	5	243	18	943	4	183	0	0	6	304	0	0	0	0	0	0	0	0	2	122	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	122	0	0
Sphaerocystis schroeteri	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tetraedon gracile	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Volvox aureus	0	0	80	4774	94	5616	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Westella botryoides	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	608	0	0
Apiocystis sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Paulschulzia sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diatoms (Bacillariophyceae)																																			0	0		
Asterionella formosa	186	52088	309	86650	368	103030	163	45536	102	28665	50	14087	45	12613	82	22932	16	4586	7	1966	0	0	0	0	2	655	4	983	10	2785	8	2293	32	8845	23	6552	104	28993
Aulacoseira granulata	85	26477	90	27747	113	35182	336	104095	207	64017	122	37721	71	21943	43	13420	35	10700	8	2539	12	3627	0	0	17	5259	16	4896	15	4534	12	3627	12	3627	8	2358	7	2176
Aulacoseira granulata var. *angustissima*	21	5476	18	4715	20	5324	13	3498	25	6388	16	4107	12	3042	0	0	36	9430	10	2586	0	0	30	7909	15	3803	12	3194	16	4259	5	1217	22	5628	20	5171	35	9126
Aulacoseria sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0
Cocconeis	6	3366	4	1836	4	2142	0	0	1	612	2	918	1	306	0	0	3	1530	3	1530	0	0	0	0	0	0	1	306	0	0	1	612	0	0	0	0	2	1224
Cyclotella stelligera	13	2153	5	842	4	562	11	1685	8	1217	6	936	6	936	5	842	10	1591	2	374	3	468	1	187	2	374	5	842	5	842	3	468	6	1030	9	1404	4	562
Fragilaria crotonensis	124	44399	88	31624	27	9634	3	1047	18	6492	0	0	9	3351	1	209	0	0	6	2304	0	0	0	0	5	1675	0	0	108	38745	34	12147	0	0	33	11728	24	8587
Fragilaria sp.							3	1047	0	0	0	0	0	0	0	0	6	2094	0	0	0	0	0	0	19	6702	0	0	0	0	0	0	9	3141	0	0		
Nitzschia sp.	2	684	2	913	3	1141	19	7301	20	7757	8	2966	4	1597	0	114	2	913	1	456	1	228	0	0	1	456	1	456	2	684	1	228	4	1369	4	1369	6	2282
Synedra sp.	5	1844	9	3688	6	2535	0	0	5	1844	1	461	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	691
Amphora sp.	1	306	0	0	0	0	0	0	0	0	1	612	1	612	0	0	0	0	0	0	1	306	0	0	0	0	0	0	0	0	1	306	1	612	0	0	1	306
Eunotia sp.	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Selenastrum minutum							2	257	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Small unknown diatom sp.	1	129	2	257	6	708	0	0	2	257	0	0	1	64	0	0	2	193	2	193	1	129	0	0	0	0	2	193	2	257	0	0	2	257	11	1223	4	450
Desmids (Mesotaeniaceae, Desmidiaceae)							0	0																											0	0		
Closterium aciculare	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	420	0	0
Closterium acutum var. *variable*	4	1323	3	1103	2	662	1	221	1	441	2	882	1	221	2	662	1	441	0	0	0	0	0	0	1	441	2	882	1	441	2	662	0	0	0	0	2	662
Cerasterias staurastroides	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mougeotia sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spirogyra sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Staurastrum sp.	1	80	0	0	1	80	0	0	1	80	1	80	1	160	0	0	1	80	1	80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	0	0
Staurastrum tangaroaii	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Staurodesmus unicorns var. *gracilis*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chrysophtya (Chrysophyceae)															0	0																			0	0		
Dinobryon sp.	14	828	0	0	25	1484	33	1933	0	0	6	345	0	0	0	0	0	0	4	207	0	0	3	173	1	69	7	414	0	0	0	0	18	1070	1	50	11	621
Cryptomonas sp.	2	253	3	421	3	421	1	168	0	0	0	0	1	84	0	0	1	84	2	253	0	0	0	0	0	0	2	253	1	168	1	168	0	0	0	0	0	0
Synura sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	81	0	0
Dinoflagellates (Dinophyceae)																																			0	0		
Ceratium hirundinella	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	12285	0	2100	0	0
Gymnodinium sp. 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	644	0	0	0	0	0	0	0	0	0	0
Gymnodinium sp. 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	11700	0	0	0	0	0	0	0	0	0	0	0	0	0	400	0	0
Peridinium sp.	1	2340	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gonyaulax sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Flagellates 5µm																																			0	0		
Flagellates < 5µm/unicells	56	1966	58	2027	85	2989	161	5631	59	2068	78	2744	37	1310	144	5057	56	1945	31	1085	9	328	118	4136	21	737	27	942	43	1515	23	799	34	1188	128	4484	47	1658

Lake Taupo phytoplankton enumeration (10-m tube) 2009-10

Cell counts and biovolume

Cells per ml numbers may be affected by rounding

Sample code	**PH1**	**PH1**	**QJ1**	**QJ1**	**TT1**	**TT1**	**VA1**	**VA1**	**VA3**	**VA3**	**XF1**	**XF1**	**ZD1**	**ZD1**	**BX1**	**BX1**	**CU1**	**CU1**	**CU3**	**CU3**
Sampling date	**19/10/2009**	**19/10/2009**	**12/11/2009**	**12/11/2009**	**13/01/2010**	**13/01/2010**	**2/02/2010**	**2/02/2010**	**18/02/2010**	**18/02/2010**	**10/03/2010**	**10/03/2010**	**8/04/2010**	**8/04/2010**	**20/05/2010**	**20/05/2010**	**3/06/2010**	**3/06/2010**	**23/06/2010**	**23/06/2010**
Species composition by class	**Cell (per ml)**	**Biovolume (μm^3)**	**Cell (per ml)**	**Biovolume (μm^3)**	**Cell (per ml)**	**Biovolume (μm^3)**	**Cell (per ml)**	**Biovolume (μm^3)**	**Cell (per ml)**	**Biovolume (μm^3)**	**Cell (per ml)**	**Biovolume (μm^3)**	**Cell (per ml)**	**Biovolume (μm^3)**	**Cell (per ml)**	**Biovolume (μm^3)**	**Cell (per ml)**	**Biovolume (μm^3)**	**Cell (per ml)**	**Biovolume (μm^3)**
Blue greens (Cyanophyceae)																				
Dolichospermum c.f. lemmermannii (formerly; *Anabaena c.f. lemmermannii)*	0.0	0	77.4	6964	3.0	270	17.6	1582	182.5	21172	4.2	492	5.6	652	3.6	418	4.6	531	1.9	218
Dolichospermum planctonicum (formerly; *Anabaena planktonica)*	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.3	100	0.0	0	0.0	0	0.0	0	0.0	0
Dolichospermum sp. (formerly; *Anabaena sp.)*	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Dolichospermum circinalis (formerly; *Anabaena circinalis)*	6.9	1429	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Chroococcus sp.	0.0	0	0.0	0	0.0	0	0.0	0	0.8	11	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Microcystis sp.	0.0	0	0.6	13	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Leptolyngbya sp.	17.1	188	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.6	7	0.0	0	0.0	0
Snowella sp.	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Pseudanabaena sp.	0.7	14	0.0	0	0.2	4	0.0	0	0.0	0	0.1	2	0.1	1	0.8	15	0.0	0	0.4	7
Phormidium sp.	0.0	0	0.0	0	0.0	0	0.0	0	0.2	5	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Aphanocapsa sp.	4.0	36	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	2.0	18
Aphanothece sp.	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Aphanizomenon sp.	0.3	6	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Greens (Chlorophyceae)																				
Monoraphidium sp. / Ankistrodesmus falcatus	67	2818	32	1341	5	227	21	863	0	0	2	68	18	750	14	591	27	1113	11	477
Stichococcus contortus	11	204	0	0	0	0	9	166	0	0	0	0	0	0	0	0	0	0	0	0
Botryococcus braunii (colonies)	0	0	0.002	3900	0.000	1950	0	0	0	0	0	0	0	0	0	0	0.0	3248	0.0	1570
Chlamydomonas sp.	2	341	0	0	1	227	0	0	0	0	0	0	0	0	2	454	0	0	3	568
Elakotothrix gelatinosa	4	454	3	341	1	114	4	454	0	0	1	114	0	0	15	1591	6	682	2	170
Eudorina elegans	8	2077	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nephrocytium lunatum	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oocytsis sp.	9	1229	12	1690	22	3150	36	5070	45	6376	10	1383	34	4840	11	1613	11	1613	6	845
Tetraedon gracile	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Paulschulzia sp.	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Dictyosphaerium	45	0	0	0	6	0	8	0	0	0	0	0	0	0	0	0	4	238	0	0
Crucigeniella sp	17	1090	18	1160	77	4993	48	3095	8	492	0	0	0	0	0	0	1	70	0	0
Kirchneriella contorta	10	321	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	214	0	0
Planktosphaeria gelatinosa	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0
Scenedesmus sp.	0	0	0	0	4	225	0	0	0	0	0	0	0	0	0	0	4	225	0	0
Volvox aureus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	325	19476	173	10387	498	29863
Diatoms (Bacillariophyceae)																				
Asterionella formosa	186	51958	31	8786	3	757	0	0	0	0	4	1060	0	0	4	1212	10	2727	9	2575
Aulacoseira granulata	21	6541	23	7044	6	2013	0	0	0	0	0	0	0	0	12	3857	9	2683	9	2851
Aulacoseira granulata var. angustissima	54	13925	4	1125	1	281	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aulacoseria sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cyclotella stelligera	10	1558	3	519	4	606	2	346	1	173	0	0	0	0	0	0	0	0	2	346
Fragilaria crotonensis	158	56554	121	43190	60	21498	98	35249	8	2905	15	5229	12	4261	22	7941	57	20336	135	48226
Nitzschia sp.	2	844	1	211	2	633	3	1266	0	0	1	211	2	844	7	2743	2	633	0	0
Synedra sp.	1	426	0	0	1	213	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Amphora sp.	0	0	0	0	2	849	0	0	0	0	0	0	0	0	0	0	1	566	1	283
Cocconeis	1	566	0	0	0	0	2	849	0	0	6	3112	0	0	6	3395	8	3961	7	3678
Small unknown diatom sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	238	1	60	1	119
Desmids (Mesotaeniaceae, Desmidiaceae)									0	0										
Closterium aciculare	0	0	1	648	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Closterium acutum var. variable	1	408	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	204	1	408
Staurastrum sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	74	1	74	0	0
Chrysophtya (Chrysophyceae)																				
Dinobryon sp.	98	5809	289	17077	16	926	37	2202	29	1692	4	223	4	223	25	1468	0	0	6	383
Cryptomonas sp.	1	78	0	0	1	78	0	0	0	0	1	156	0	0	1	78	2	234	1	156
Dinoflagellates (Dinophyceae)																				
Ceratium hirundinella	0	0	0	0	1	11361	1	22722	0	0	0	0	0	0	0	0	0	0	0	0
Gymnodinium sp. 1	0	0	0	0	0	0	0	0	1	1190	0	0	0	0	1	595	1	595	0	0
Gymnodinium sp. 2	0	0	0	0	2	40575	0	0	1	27050	0	0	0	5410	0	0	0	0	0	0
Peridinium sp.	0	0	0	0	0	0	0	0	0	0	4	15148	0	0	3	12984	0	0	1	2164
Gonyaulax sp.	0	0	0	0	0	0	0	0	1	2164	0	0	3	6492	0	0	0	0	0	0
Flagellates 5μm																				
Flagellates < 5μm/unicells	153	5340	61	2140	43	1496	42	1477	85	2973	34	1193	33	1155	29	1004	23	795	36	1269

Lake Taupo phytoplankton enumeration (10-m tube) 2009-10 (continued)

Cell counts and biovolume **Cells per ml numbers may be affected by rounding**

Sample code	**EX1**	**EX1**	**FY1**	**FY1**
Sampling date	**13/07/2010**	**13/07/2010**	**10/08/2010**	**10/08/2010**
Species composition by class	**Cell (per ml)**	**Biovolume (µm^3)**	**Cell (per ml)**	**Biovolume (µm^3)**
Blue greens (Cyanophyceae)				
Dolichospermum c.f. lemmermannii (formerly; ***Anabaena c.f. lemmermannii)***	0.2	22	0.8	87
Dolichospermum planctonicum (formerly; ***Anabaena planktonica)***	0.0	0	0.0	0
Dolichospermum sp. (formerly; ***Anabaena sp.)***	0.0	0	0.0	0
Dolichospermum circinalis (formerly; ***Anabaena circinalis)***	0.0	0	0.3	67
Chroococcus sp.	0.0	0	0.0	0
Microcystis sp.	0.0	0	0.4	8
Leptolyngbya sp.	0.0	0	1.3	14
Snowella sp.	0.0	0	0.0	0
Pseudanabaena sp.	0.5	9	0.0	0
***Phormidium* sp.**	0.3	5	0.0	0
***Aphanocapsa* sp.**	2.4	22	1.0	9
***Aphanothece* sp.**	0.0	0	0.0	0
***Aphanizomenon* sp.**	0.0	0	0.0	0
Greens (Chlorophyceae)				
Monoraphidium sp. / Ankistrodesmus falcatus	68	2863	72	3022
Stichococcus contortus	0	0	29	526
Botryococcus braunii (colonies)	0.0	0	0.0	6160
Chlamydomonas sp.	0	0	2	341
Elakotothrix gelatinosa	6	625	6	682
Eudorina elegans	0	0	16	4155
Nephrocytium lunatum	0	0	0	0
Oocytsis sp.	4	538	3	384
Tetraedon gracile	0	0	0	0
Paulschulzia sp.	0	0	0	0
Dictyosphaerium	0	0	9	506
Crucigeniella sp	0	0	3	211
Kirchneriella contorta	0	0	0	0
Planktosphaeria gelatinosa	0	0	0	0
***Scenedesmus* sp.**	2	113	0	0
Volvox aureus	87	5194	0	0
Diatoms (Bacillariophyceae)				
Asterionella formosa	39	11058	155	43323
Aulacoseira granulata	23	7044	52	16268
Aulacoseira granulata var. angustissima	0	0	57	14910
Aulacoseria sp.	17	0	0	0
Cyclotella stelligera	8	1212	11	1818
Fragilaria crotonensis	62	22273	108	38542
Nitzschia sp.	1	422	3	1266
Synedra sp.	1	213	6	2345
Amphora sp.	0	0	0	0
Cocconeis	4	2264	5	2829
	4	417	4	417
Desmids (Mesotaeniaceae, Desmidiaceae)				
Closterium aciculare	0	0	2	1296
Closterium acutum var. variable	0	0	0	0
***Staurastrum* sp.**	0	0	0	0
Chrysophtya (Chrysophyceae)				
Dinobryon sp.	0	0	5	287
Cryptomonas sp.	4	623	3	390
Dinoflagellates (Dinophyceae)				
Ceratium hirundinella	0	0	0	0
Gymnodinium sp. 1	1	595	0	0
Gymnodinium sp. 2	0	0	0	0
Peridinium sp.	0	0	0	0
Gonyaulax sp.	0	0	0	0
Flagellates 5µm				
Flagellates < 5µm/unicells	59	2064	70	2443

Lake Taupo phytoplankton enumeration (10-m tube) 2008-09

Cell counts and biovolume

Cells per ml numbers may be affected by rounding

Sample code	RL4	RL4	SV2	SV2	UP4	UP4	XE2	XE2	XZ2	XZ2	XZ1	XZ1	AH2	AH2	AH4	AH4	DU1	DU1	EW2	EW2	GV2	GV2
Sampling date	16/09/2008	16/09/2008	14/10/2008	14/10/2008	26/11/2008	26/11/2008	22/12/2008	22/12/2008	13/01/2009	13/01/2009	28/01/2009	28/01/2009	11/02/2009	11/02/2009	25/02/2009	25/02/2009	26/03/2009	26/03/2009	15/04/2009	15/04/2009	7/05/2009	7/05/2009
Species composition by class	Cell (per ml)	Biovolume (µm^3)	Cell (per ml)	Biovolume (µm^3)	Cell (per ml)	Biovolume (µm^3)	Cell (per ml)	Biovolume (µm^3)	Cell (per ml)	Biovolume (µm^3)	Cell (per ml)	Biovolume (µm^3)	Cell (per ml)	Biovolume (µm^3)	Cell (per ml)	Biovolume (µm^3)	Cell (per ml)	Biovolume (µm^3)	Cell (per ml)	Biovolume (µm^3)	Cell (per ml)	Biovolume (µm^3)
Blue greens (Cyanophyceae)																						
Anabaena lemmermannii	0.0	0	0.0	0	46.5	1905	16.3	670	1.3	116	1.3	120	7.4	669	75.6	41	1.4	126	27.7	2495	13.6	1226
Pseudanabaena limnetica	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.1	2	0.0	0	4.4	83	0.0	0	0.0	0
Anabaena planktonica	0.0	0	0.0	0	0.0	0	0.0	0	0.8	299	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Anabaena sp.	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Anabaena circinalis	0.0	0	8.9	581	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Chroococcus sp.	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.3	4
Microcystis sp.	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0		
Leptolyngbya sp.	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	2.1	23
Snowella sp.																	0.0	0	0.0	0	0.0	0
Greens (Chlorophyceae)																						
Monoraphidium sp. / *Ankistrodesmus falcatus*	94	3956	4	172	4	172	16	688	53	2236	139	5848	56	2359	0	0	0	0	1	49	5	221
Stichococcus contortus	12	211	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Botryococcus braunii	0.0	218	0.0	0	0.0	8877	0.0	127636	0.0	0	0.0	1908	0.0	0	0.0	543	0	0	0.0	4213	0.0	6058
Chlamydomonas sp.	0	0	1	123	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Elakotothrix gelatinosa	4	369	0	0	0	0	0	0	5	491	12	1229	16	1720	18	1843	0	0	1	114	0	0
Eudorina elegans	0	0	0	0	0	0	0	0	6	1647	0	0	0	0	0	0	0	0	3	674	0	0
Nephrocytium lunatum	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0
Oocytsis sp.	14	1994	8	1163	5	748	5	665	0	0	2	249	5	665	0	0	0	0	5	748	4	498
Tetraedon gracile	0	0	0	0	0	0	20	2252	9	1030	1	64	0	0	0	0	0	0	0	0	0	0
Paulschulzia sp.	0	0	0	0	0	0	0	0	18	0	7	0	0	0	0	0	0	0	0	0	0	0
Dictyosphaerium sp.	0	0	0		0		0	0	0		0	0	0		0				5	0	0	0
Crucigeniella sp	0	0	0		7	456	4	228	2	152	0	0	0	0	0	0	0	0	30	1969	53	3422
Diatoms (Bacillariophyceae)																						
Asterionella formosa	64	18018	42	11794	29	8190	3	819	22	6061	35	9828	5	1310	1	328	4	1147	11	3112	19	5242
Aulacoseira granulata	15	4534	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	2539	0	0	0	0
Aulacoseira granulata var. *angustissima*	0	0	1	304	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aulacoseria sp.	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cyclotella stelligera	15	2340	2	374	7	1123	0	0	1	187	1	187	1	187	0	0	1	187	1	187	4	655
Fragilaria crotonensis	37	13194	33	11728	99	35603	66	23456	70	25132	21	7539	48	17173	16	5864	2	838	21	7539	8	2723
Nitzschia sp.	0	0	0	0	0	0	4	1369	0	0	4	1597	2	913	2	913	0	0	0	0	0	0
Synedra sp.	1	230	0	0	0	0	2	691	0	0	0	0	0	0	0	0	1	230	0	0	0	0
Amphora sp.	0	0	0	0	0	0	1	306	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cocconeis	1	306	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Desmids (Mesotaeniaceae, Desmidiaceae)																						
Closterium aciculare	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Closterium acutum var. *variable*	1	441	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chrysophtya (Chrysophyceae)																						
Dinobryon sp.	0	0	53	3106	313	18466	23	1381	0	0	2	104	38	2243	53	3141	0	0	11	621	13	794
Cryptomonas sp.	0	0	0	0	1	168	0	0	0	0	0	0	1	84	0	0	0	0	0	0	0	0
Dinoflagellates (Dinophyceae)																						
Ceratium hirundinella	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gymnodinium sp. 1	0	0	0	0	1	205	1	205	1	205	4	4505	4	4505	3	3218	0	0	1	1287	1	644
Gymnodinium sp. 2	0	0	0	0	1	14625	0	0	0	0	0	0	0	0	0	0	0	150	0	50	0	25
Peridinium sp.	0	0	0	0	0	0	0	0	0	0	2	4680	1	2340	0	0	0	0	1	2340	0	0
Gonyaulax sp.																	1	1170	1	1170	0	0
Flagellates 5µm																						
Flagellates < 5µm/unicells	113	3972	68	2375	78	2723	249	8722	182	6368	57	2007	51	1781	83	2907	37	1290	51	1781	145	5078

Lake Taupo phytoplankton enumeration (10-m tube) 2008-09 continued

Sample code	GV4	GV4	JO1	JO1	KI1	KI1	NEW NAMES INTRODUCED	LT1	LT1	ND1	ND1
Sampling date	27/05/2009	27/05/2009	18/06/2009	18/06/2009	6/07/2009	6/07/2009	August 2009	13/08/2009	13/08/2009	7/09/2009	7/09/2009
Species composition by class	Cell	Biovolume	Cell	Biovolume	Cell	Biovolume		Cell	Biovolume	Cell	Biovolume
	(per ml)	(µm^3)	(per ml)	(µm^3)	(per ml)	(µm^3)		(per ml)	(µm^3)	(per ml)	(µm^3)
Blue greens (Cyanophyceae)							**Blue greens (Cyanophyceae)**				
Anabaena lemmermannii	9.4	849	5.8	41	0.3	28	*Dolichospermum c.f. lemmermannii* (formerly; *Anabaena c.f. lemmermannii)*	0.1	10	0.1	11
Pseudanabaena limnetica	0.0	0	0.0	0	1.0	19	*Pseudanabaena sp.*	0.0	0	0.0	0
Anabaena planktonica	0.2	88	0.0	0	0.0	0	*Dolichospermum planctonicum* (formerly; *Anabaena planktonica)*	0.0	0	0.0	0
Anabaena sp.	2.1	188	0.3	23	0.5	46	*Dolichospermum sp.* (formerly; *Anabaena sp.)*	0.0	0	0.0	0
Anabaena circinalis	0.0	0	0.0	0	0.0	0	*Dolichospermum circinalis* (formerly; *Anabaena circinalis)*	0.0	0	0.0	0
Chroococcus sp.	0.1	1	0.0	0	0.0	0	*Chroococcus sp.*	0.2	2	0.8	11
Microcystis sp.	0.0	0	0.0	0	0.0	0	*Microcystis sp.*	0.0	0	2.5	53
Leptolyngbya sp.	0.6	6	0.1	2	0.0	0	*Leptolyngbya sp.*	0.0	0	120.0	1320
Snowella sp.	0.1	3	0.0	0	0.0	0	*Snowella sp.*	3.3	83	222.9	5572
Greens (Chlorophyceae)							**Greens (Chlorophyceae)**			0.0	0
Monoraphidium sp. / *Ankistrodesmus falcatus*	14	590	42	1744	42	1750	*Monoraphidium sp. / Ankistrodesmus falcatus*	24	1022	225	9459
Stichococcus contortus	0	0	3	53	0	0	*Stichococcus contortus*	19	351	63	1141
Botryococcus braunii	0.0	15954	0.0	14315	0.0	30946	*Botryococcus braunii (colonies)*	0.0	0	0.0	205716
Chlamydomonas sp.	0	0	0	0	0	0	*Chlamydomonas sp.*	0	0	0	0
Elakotothrix gelatinosa	0	0	0	0	0	0	*Elakotothrix gelatinosa*	1	114	8	819
Eudorina elegans	0	0	0	0	0	0	*Eudorina elegans*	0	0	0	0
Nephrocytium lunatum	0	0	0	0	0	0	*Nephrocytium lunatum*	0	0	0	0
Oocytsis sp.	0	0	4	498	0	0	*Oocytsis sp.*	15	2151	0	0
Tetraedon gracile	0	0	0	0	0	0	*Tetraedon gracile*	0	0	0	0
Paulschulzia sp.	0	0	0	0	0	0	*Paulschulzia sp.*	0	0	0	0
Dictyosphaerium sp.	0	0	0		0	0	*Dictyosphaerium*	0	0	12	295
Crucigeniella sp	36	2358	11	722	9	598	*Crucigeniella sp*	2	141	0	0
Diatoms (Bacillariophyceae)							**Diatoms (Bacillariophyceae)**				
Asterionella formosa	10	2785	22	6143	55	15299	*Asterionella formosa*	366	102400	215	60333
Aulacoseira granulata	7	2176	0	0	102	31529	*Aulacoseira granulata*	30	9392	18	5441
Aulacoseira granulata var. *angustissima*	0	0	15	3955	0	0	*Aulacoseira granulata var. angustissima*	0	0	4	1014
Aulacoseria sp.	0	0	0	0	0	0	*Aulacoseria sp.*	0	0	0	0
Cyclotella stelligera	1	187	9	1404	2	346	*Cyclotella stelligera*	5	866	21	3432
Fragilaria crotonensis	18	6492	35	12566	24	8716	*Fragilaria crotonensis*	0	0	34	12217
Nitzschia sp.	1	456	2	913	2	844	*Nitzschia sp.*	5	2110	1	380
Synedra sp.	0	0	0	0	0	0	*Synedra sp.*	1	213	0	0
Amphora sp.	0	0	0	0	0	0	*Amphora sp.*	0	0	0	0
Cocconeis	0		1	306	0	0	*Cocconeis*	0	0	0	0
Desmids (Mesotaeniaceae, Desmidiaceae)							**Desmids (Mesotaeniaceae, Desmidiaceae)**				
Closterium aciculare	0	0	1	350	0	0	*Closterium aciculare*	0	0	0	0
Closterium acutum var. *variable*	0	0	0	0	1	204	*Closterium acutum var. variable*	0	0	1	368
Chrysophtya (Chrysophyceae)							**Chrysophtya (Chrysophyceae)**			0	0
Dinobryon sp.	8	449	0	0	0	0	*Dinobryon sp.*	0	0	0	0
Cryptomonas sp.	0	0	1	84	1	78	*Cryptomonas sp.*	0	0	0	0
Dinoflagellates (Dinophyceae)							**Dinoflagellates (Dinophyceae)**				
Ceratium hirundinella	0	0	0	0	0	0	*Ceratium hirundinella*	0	0	0	0
Gymnodinium sp. 1	1	1287	1	644	2	1785	*Gymnodinium sp. 1*	0	0	0	0
Gymnodinium sp. 2	0	0	0	2925	0	0	*Gymnodinium sp. 2*	0	0	0	0
Peridinium sp.	0	0	0	0	0	0	*Peridinium sp.*	0	0	0	0
Gonyaulax sp.	1	2340	1	1170	0	0	*Gonyaulax sp.*	0	0	0	0
Flagellates 5µm							**Flagellates 5µm**			0	0
Flagellates < 5µm/unicells	67	2334	51	1781	76	2651	Flagellates < 5µm/unicells	328	11494	193	6757

Lake Taupo phytoplankton enumeration (10-m tube) 2007-08

Cell counts and biovolume

Cells per ml numbers may be affected by rounding

Sample code	TZ2	TZ2	TZ4	TZ4	WF2	WF2	XX1	XX1	XX4	XX4	AM1	AM1	BM1	BM1	BM3	BM3	DT1	DT1	EO1	EO1	EO3	EO3	EO5	EO5
Sampling date	8/08/2007	8/08/2007	23/08/2007	23/08/2007	11/09/2007	11/09/2007	9/10/2007	9/10/2007	30/10/2007	30/10/2007	15/11/2007	15/11/2007	4/12/2007	4/12/2007	20/12/2007	20/12/2007	17/01/2008	17/01/2008	31/01/2008	31/01/2008	14/02/2008	14/02/2008	27/02/2008	27/02/2008
Species composition by class	Cell (per ml)	Biovolume (µm^{3})	Cell (per ml)	Biovolume (µm^{3})	Cell (per ml)	Biovolume (µm^{3})	Cell (per ml)	Biovolume (µm^{3})	Cell (per ml)	Biovolume (µm^{3})	Cell (per ml)	Biovolume (µm^{3})	Cell (per ml)	Biovolume (µm^{3})	Cell (per ml)	Biovolume (µm^{3})	Cell (per ml)	Biovolume (µm^{3})	Cell (per ml)	Biovolume (µm^{3})	Cell (per ml)	Biovolume (µm^{3})	Cell (per ml)	Biovolume (µm^{3})
Blue greens (Cyanophyceae)																								
Anabaena lemmermannii	2	64	3	108	1	27	17	696	51	2100	18	725	1	27	29	1175	28.7	1175	21.3	875	25.0	1025	85.8	3518
Pseudanabaena limnetica	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	2	0.0	0	0.0	0	0.5	9
Chroococcus sp.	0	0	1	6	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0	0.0	0	0.0	0	0.0	0
Microcystis sp.	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0.0	0	0.0	0	0.0	0	0.0	0
c.f Rivularia sp.	0	0	0	0	1	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aphanothece sp.	0	0	1	15	0	1	0	0	0	0	0	0	0	0	0	0	0.0	0	0.0	0	0.0	0	0.0	0
Aphanizomenon sp.	2	30	0	0	0	0	0	0	0	0	2	32	3	48	4	78	0.0	0	0.0	0	0.0	0	4.0	76
Leptolyngbya sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	8	0.0	0	0.0	0	0.0	0	0.0	0
Greens (Chlorophyceae)																								
Monoraphidium sp. / *Ankistrodesmus falcatus*	20	839	17	695	3	123	6	247	10	418	28	1189	18	737	114	4785	66	2764	0	0	0	0	0	0
Stichococcus contortus	175	0	97	1749	25	453	0	0	0	0	0	0	3	53	0	0	0	0	0	0	0	0	0	0
Kirchneriella contorta	0	0	0	0	56	1853	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Botryococcus braunii	0	0	0	4800	0	0	0	0	0	0	0	0	0	1100	1	92840	0	0	0	0	0	0	0	259720
Chlamydomonas sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Elakotothrix gelatinosa	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	532	0	0	0	0	0	0	2	246
Eudorina elegans	0	0	0	0	0	0	0	0	1	300	0	0	0	0	0	0	2	624	4	1108	0	0	3	749
Lagerheimia sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oocytsis sp.	0	0	0	0	1	166	5	758	5	665	0	0	1	166	6	839	2	277	0	0	0	0	0	0
Planktosphaeria gelatinosa	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Quadrigula lacustrus	0	0	5	788	3	480	0	0	0	0	0	0	0	0	3	554	0	0	0	0	0	0	0	0
Westella botryoides	10	634	29	1909	0	0	0	0	9	608	0	0	0	0	0	0	17	1077	0	0	0	0	0	0
Paulschulzia sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diatoms (Bacillariophyceae)																								
Asterionella formosa	275	77123	292	81787	753	210974	124	34838	62	17363	15	4187	4	983	2	473	50	14060	11	3181	0	0	2	655
Aulacoseira granulata	0	0	0	0	13	3990	0	0	16	5078	3	993	0	0	0	0	0	0	0	0	0	0	0	0
Aulacoseira granulata var. *angustissima*	52	13436	11	2777	0	0	0	0	3	761	0	0	0	0	0	0	2	507	0	0	0	0	0	0
Cyclotella stelligera	14	2184	11	1709	8	1310	9	1452	11	1685	0	0	0	0	0	0	1	156	0	0	0	0	0	0
Fragilaria crotonensis	57	20419	27	9750	0	0	0	0	0	0	2	574	1	209	9	3324	19	6806	5	1743	0	0	13	4607
Nitzschia sp.	0	0	5	2083	1	228	0	0	0	0	0	0	1	456	14	5596	1	380	0	0	0	0	2	684
Synedra sp.	1	0	0	0	1	1638	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Small unknown diatom sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	60	0	0	0	0
Desmids (Mesotaeniaceae, Desmidiaceae)																								
Closterium aciculare	0	0	0	0	0	0	0	160	0	0	1	320	1	350	1	506	0	0	0	0	0	0	0	0
Closterium acutum var. *variable*	1	551	1	201	1	221	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chrysophtya (Chrysophyceae)																								
Dinobryon sp.	21	1266	2	126	0	0	146	8633	297	17534	81	4789	76	4487	8	448	7	431	6	383	32	1915	73	4314
Cryptomonas sp.	0	0	1	77	0	0	1	77	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mallomonas sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dinoflagellates (Dinophyceae)																								
Gymnodinium sp. 1	0	1463	0	0	0	0	1	3204	1	1755	0	0	1	1755	1	2532	0	0	6	17853	4	10820	16	49140
Gymnodinium sp. 2	0	12188	1	13350	0	0	0	6675	0	0	0	0	0	7313	3	63300	0	6094	0	0	0	0	3	73125
Flagellates 5µm																								
Flagellates < 5µm/unicells	153	6582	296	10354	112	3911	129	4504	93	3256	78	2729	125	4382	526	18403	83	2901	99	3465	39	1373	60	2109

Sample code	**HT1**	**HT1**	**HT3**	**HT3**	**KB1**	**KB1**	**LB1**	**LB1**	**LB3**	**LB3**	**MW1**	**MW1**	**MW3**	**MW3**	**OL1**	**OL1**	**OL3**	**OL3**	**QA2**	**QA2**	**QA4**	**QA4**	**RL2**	**RL2**
Sampling date	**13/03/2008**	**13/03/2008**	**26/03/2008**	**26/03/2008**	**17/04/2008**	**17/04/2008**	**7/05/2008**	**7/05/2008**	**22/05/2008**	**22/05/2008**	**5/06/2008**	**5/06/2008**	**18/06/2008**	**18/06/2008**	**1/07/2008**	**1/07/2008**	**15/07/2008**	**15/07/2008**	**7/08/2008**	**7/08/2008**	**20/08/2008**	**20/08/2008**	**4/09/2008**	**4/09/2008**
Species composition by class	**Cell (per ml)**	**Biovolume (μm^3)**	**Cell (per ml)**	**Biovolume (μm^3)**	**Cell (per ml)**	**Biovolume (μm^3)**	**Cell (per ml)**	**Biovolume (μm^3)**	**Cell (per ml)**	**Biovolume (μm^3)**	**Cell (per ml)**	**Biovolume (μm^3)**	**Cell (per ml)**	**Biovolume (μm^3)**	**Cell (per ml)**	**Biovolume (μm^3)**	**Cell (per ml)**	**Biovolume (μm^3)**	**Cell (per ml)**	**Biovolume (μm^3)**	**Cell (per ml)**	**Biovolume (μm^3)**	**Cell (per ml)**	**Biovolume (μm^3)**
Blue greens (Cyanophyceae)																								
Anabaena lemmermannii	92	3778	7.0	288	56.6	2319	120.6	4946	2.2	91	1.1	46	1.7	71	12.2	500	9.8	403	0.8	32	0.2	7	0.9	37
Pseudanabaena limnetica	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	2.8	53	0.3	5	0.0	0	0.0	0
***Chroococcus* sp.**	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
***Microcystis* sp.**	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
***c.f Rivularia* sp.**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
***Aphanothece* sp.**	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
***Aphanizomenon* sp.**	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Leptolyngbya sp.	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	1.4	16	0.0	0
Greens (Chlorophyceae)																								
Monoraphidium* sp. / *Ankistrodesmus falcatus	0	0	0	0	0	0	5	197	0	0	0	0	0.0	0	188	7907	0	0	73	3047	73	3071	130	5479
Stichococcus contortus	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0	0	0	0	0	0.0	0	0	0	26	474
Kirchneriella contorta	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0	0	0	0	0	0.0	0	0	0	0	0
Botryococcus braunii	0.1	469151	0	14435	0.04	259837	0	104870	0	28871	0	132806	0.0	3609	0	5774	0.1	226456	0.0	5413	0	0	0.0	17746
***Chlamydomonas* sp.**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Elakotothrix gelatinosa	2	246	6	676	1	123	4	369	2	246	1	123	0	0	1	114	0	0	0	0	0	0	0	0
Eudorina elegans	8	2097	0	0	0	0	0	0	0	0	11	2696	0	0	0	0	0	0	0	0	9	2246	0	0
***Lagerheimia* sp.**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	1797
***Oocytsis* sp.**	0	0	0	0	1	166	5	665	2	332	0	0	0	0	6	914	0	0	5	665	7	997	0	0
Planktosphaeria gelatinosa	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	1412
Quadrigula lacustrus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Westella botryoides	0	0	0	0	0	0	15	951	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Paulschulzia sp.	0	0	0	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diatoms (Bacillariophyceae)																								
Asterionella formosa	19	5242	12	3276	5	1310	10	2785	28	7862	25	6880	22	6061	25	7043	102	28501	191	53399	79	22113	94	26208
Aulacoseira granulata	0	0	0	0	0	0	2	725	12	3808	13	4171	2	725	0	0	35	10700	151	46788	0	0	18	5622
Aulacoseira granulata* var. *angustissima	0	0	0	0	0	0	4	913	0	0	0	0	0	0	25	6388	0	0	0	0	57	14754	0	0
Cyclotella stelligera	0	0	0	0	0	0	3	468	1	187	2	374	1	94	4	562	1	94	1	187	12	1872	18	2902
Fragilaria crotonensis	0	0	15	5445	4	1466	0	0	57	20315	61	21781	84	29948	46	16545	30	10890	18	6283	49	17592	59	20943
***Nitzschia* sp.**	1	228	1	342	3	1141	2	684	2	913	0	0	1	228	4	1369	4	1597	1	456	0	0	2	684
***Synedra* sp.**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Small unknown diatom sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Desmids (Mesotaeniaceae, Desmidiaceae)																								
Closterium aciculare	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1051
Closterium acutum* var. *variable	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	221	0	0	1	441	0	0	0	0
Chrysophtya (Chrysophyceae)																								
***Dinobryon* sp.**	26	1519	2	104	4	242	8	483	8	466	9	518	0	0	9	518	0	0	0	0	0	0	20	1208
***Cryptomonas* sp.**	1	84	0	0	1	84	1	168	1	84	1	84	2	337	0	0	2	337	0	0	0	0	0	0
Mallomonas sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1053	0	0	0	0	0	0	0	0
Dinoflagellates (Dinophyceae)																								
***Gymnodinium* sp. 1**	6	19305	42	126360	12	36855	5	1843	35	12285	5	1638	4	1229	0	0	6	2048	0	0	0	0	0	0
***Gymnodinium* sp. 2**	0	0	0	0	0	0	0	0	0	0	1	29250	0	7313	0	0	1	14625	0	0	0	0	0	0
Flagellates 5µm																								
Flagellates < 5µm/unicells	57	1986	56	1945	73	2539	131	4586	47	1638	63	2191	111	3890	121	4238	115	4013	87	3030	207	7228	104	3645

Lake Taupo phytoplankton dominance plus enumeration (10-m tube) 2006-07

Dominance by biovolume (rank 1 = dominant,…rank 10 = rare), plus cell counts and biovolume from May 2007

Sample code	EM8	EM10	EM13	EM17	EM20	EM23	EM27	EM29	EM31	EM34	EM36	EM38	EM40	EM40	EM40	EM42	EM42	EM42	RY2	RY2	RY2	RY5	RY5	RY5
Sampling date	26/09/2006	18/10/2006	1/11/2006	5/12/2007	14/12/2007	9/01/2007	8/02/2007	21/02/2007	21/03/2007	3/04/2007	19/04/2007	8/05/2007	22/05/07	22/05/07	22/05/07	14/06/07	14/06/07	14/06/07	27/06/07	27/06/07	27/06/07	18/07/2007	18/07/2007	18/07/2007
Species composition by class	Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank	Biovolume (µm^3)	cell (per ml)	Rank	Biovolume (µm^3)	cell (per ml)	Rank	Biovolume (µm^3)	cell (per ml)	Rank	Biovolume (µm^3)	cell (per ml)
Blue greens (Cyanophyceae)																								
Anabaena lemmermannii	5	5	5	5	9	5	9	9	3	4	5	4	6	303	10	8	450	15	5	1091	36	4	3652	17
***Anabaena* sp.**														0	0		0	0	10	29	0		0	0
***Aphanizomenon* sp.**							8	8	7	7	9	9	10	5	0		0	0		0	0	10	27	1
***Phormidium* sp.**									10	10	10			0	0		0	0		0	0		0	0
Greens (Chlorophyceae)																								
Ankistrodesmus falcatus/ Schroederia sp.																			9	120	5		0	0
Botryococcus braunii	7	2	2	3	3	1	1	1	1	1	5	3	1	1014600	0	1	38448	1	8	438	0		0	0
***Chlorosarcinopsis* sp.**	10	10																						
Elakotothrix gelatinosa													6	342	4		0	0		0	0		0	0
Eudorina elegans	9	9	10	10	10		10	10	10	10		10		0	0		0	0		0	0		0	0
Kirchneriella contorta														0	0	10	157	7		0	0	10	21	1
Monoraphidium sp/ Ankistrodesmus falcatus	10	10	10	10	10	10	10	10	8	8	9	7	5	561	19	2	20456	259	2	5061	46	5	2574	12
***Oocytsis* sp.**	7	8	9	9	9	10	7	7	10	10	10		9	43	1	6	3210	11	4	1605	5	9	293	1
Quadrigula lacustrus	9													0	0		0	0		0	0		0	0
Stichococcus contortus														0	0		0	0	7	534	4	6	1073	5
Westella botryoides	9	9	9	10	10	10	10	10						0	0		0	0		0	0		0	0
Diatoms (Bacillariophyceae)																					0			
Asterionella formosa	2	2	6	4	4		4	5						0	0	6	3173	10	3	4414	14	2	25087	81
Aulacoseira granulata	3	1	1	1	2	9	6	2	2	2	1			0	0	4	6760	22	1	7863	25	2	29167	94
Aulacoseira granulata* var. *angustissima												2	3	5590	8		0	0		0	0		0	0
Cyclotella stelligera	5	5	9	7	6	6	5	6						0	0	8	427	3	10	71	0	8	468	3
Fragilaria crotonensis	1	4	7				6	7	6	6		7	4	2294	6	3	13382	37	10	33	0	1	109152	107
***Gomphonema* sp.**																5	5559	14	5	1042	3	7	952	2
***Nitzschia* sp.**	10	10	10	10	10	10	10	10	10	10	7		8	155	1									
unknown diatom sp.											8			0	0		0	0		0	0		0	0
Desmids (Mesotaeniaceae, Desmidiaceae)																								
Closterium acutum	9	10	10	9	9	7	8	8	10	10				0	0	7	1335	3	6	668	1		0	0
Closterium acutum* var. *variable	10	10	10	9	8	8	8	8						0	0		0	0		0	0	7	731	1
***Mougeotia* sp.**		10												0	0		0	0		0	0		0	0
***Staurastrum* sp.**	10	10				10					9	6		0	0		0	0		0	0		0	0
Chrysophtya (Chrysophyceae)																								
***Cryptomonas* sp.**	10	10	10				10	10	10	10	10			0	0	9	267	1	9	196	1	9	293	1
***Dinobryon* sp.**	9	3	3	2	1	2	6	8	3	5	2	1	7	256	1		0	0		0	0		0	0
Dinoflagellates (Dinophyceae)																								
Ceratium hirundinella		10	10	10	10		4	1	3					0	0		0	0		0	0		0	0
***Gymnodinium* sp.**	5	7	4	3	5	7	3	3	4	6	4		2	11748	1		0	0		0	0		0	0
***Gymnodinium* sp. 2**												8		0	0		0	0	3	4450	0		0	0
Flagellates 5µm																								
Flagellates < 5µm/unicells	3	6	8	6	6	6	2	4	5	4	3	4	4	2138	50	3	16227	381	1	7521	177	3	4133	97

Lake Taupo phytoplankton species composition and biovolume (μm^3) 2011-2012

From Site A (Mid Lake) 10/04/2012											
	Surface	**10m**	**50m**	**100m**	**150m**		**Surface**	**10m**	**50m**	**100m**	**150m**
	HC1	**HC2**	**HC6**	**HC11**	**HC16**		**HC1**	**HC2**	**HC6**	**HC11**	**HC16**
	10/04/2012	**10/04/2012**	**10/04/2012**	**10/04/2012**	**10/04/2012**		**10/04/2012**	**10/04/2012**	**10/04/2012**	**10/04/2012**	**10/04/2012**
	Cells/ml	**Cells/ml**	**Cells/ml**	**Cells/ml**	**Cells/ml**		**µm3**	**µm3**	**µm3**	**µm3**	**µm3**
Blue greens (Cyanophyceae)											
Dolichospermum c.f. lemmermannii (formally; Anabaena c.f. lemmermannii)	16.66	5.5	0.8	0	0.3		1933	636	92	0	32
Anabaena planktonica	0	0	1.1	0	0		0	0	439	0	0
Anabaena sp.	0	0	0	0	0.6		0	0	0	0	51
Snowella sp.	0	0	0.2	0.1	0		0	0	5	3	0
Phormidium sp.	0	0	0.7	0	0.1		0	0	14	0	3
Aphanothece sp.	0	0.7	0	0	0		0	6	0	0	0
Pseudanabaena sp.	2.8	0	0	0	0.2		54	0	0	0	3
Greens (Chlorophyceae)											
Monoraphidium* sp. */ Ankistrodesmus falcatus	49	45	35	3	4		2039	1892	1474	123	147
Botryococcus braunii (colonies)	0	0	0	0	0		0	38315	0	0	0
Dictyosphaerium	0	0	0	0	0		0	10	7	0	0
Elakotothrix gelatinosa	0	0	1	0	0		0	0	123	0	0
Eudorina elegans	0	4	0	0	0		0	899	0	0	0
Nephrocytium lunatum	0	2	0	0	0		0	0	0	0	0
***Oocytsis* sp.**	7	8	6	0	1		997	1163	831	0	166
***Scenedesmus* sp.**	0	0	0	0	1		0	0	0	0	61
Diatoms (Bacillariophyceae)											
Asterionella formosa	8	0	9	3	4		2293	0	2457	819	1147
Aulacoseira granulata	0	0	9	0	15		0	0	2720	0	4534
Aulacoseira granulata var. angustissima	0	4	0	2	17		0	1065	0	608	4411
Cyclotella stelligera	1	0	1	0	1		94	0	187	0	187
Fragilaria crotonensis	47	111	13	31	41		16754	39792	4817	11100	14660
Nitzschia sp.	8	10	18	6	8		2966	3879	7073	2282	2966
Synedra sp.	1	0	0	0	0		230	0	46	0	0
Desmids (Mesotaeniaceae, Desmidiaceae)											
Closterium aciculare	0	0	0	0	1		0	0	0	0	350
Closterium acutum* var. *variable	1	1	1	2	1		221	221	221	662	441
Chrysophtya (Chrysophyceae)											
***Dinobryon* sp.**	11	20	5	0	0		621	1208	276	0	0
***Cryptomonas* sp.**	0	1	1	0	0		0	168	168	0	0
Dinoflagellates (Dinophyceae)											
***Gymnodinium* sp. 1**	1	2	0	0	0		644	2574	0	0	0
***Gymnodinium* sp. 2**	0	0	0	0	0		0	0	260	0	20
***Gonyaulax* sp.**	4	4	0	0	0		7020	7020	0	0	0
Flagellates 5µm											
Flagellates < 5µm/unicells	94	178	75	12	22		3276	6245	2641	410	778

Lake Taupo phytoplankton species composition and biovolume (μm^3) 2011-2012

From Site A (Mid Lake) 25/10/2011

	Surface	10m	20m	50m	100m	150m		Surface	10m	20m	50m	100m	150m
	ZH1	ZH2	ZH16	ZH3	ZH6	ZH11		ZH1	ZH2	ZH16	ZH3	ZH6	ZH11
	25/10/2011	25/10/2011	25/10/2011	25/10/2011	25/10/2011	25/10/2011		25/10/2011	25/10/2011	25/10/2011	25/10/2011	25/10/2011	25/10/2011
	Cells/ml	Cells/ml	Cells/ml	Cells/ml	Cells/ml	Cells/ml		µm3	µm3	µm3	µm3	µm3	µm3
Blue greens (Cyanophyceae)													
Dolichospermum c.f. lemmermannii (formally; Anabaena c.f. lemmermannii)	4.1	0.0	0.0	4.6	0.0	0.1		478	0	0	529	0	10
Greens (Chlorophyceae)													
Monoraphidium sp. */ Ankistrodesmus falcatus*	0	1	3	3	27	3		0	25	123	123	1155	123
Stichococcus contortus	0	0	0	0	36	0		0	0	0	0	653	0
Botryococcus braunii (colonies)	0.0	0.0	0.0	0.0	0.0	0.0		0	18152	0	0	0	18152
Dictyosphaerium	0	0	0	2	0	0		0	0	0	129	0	0
Elakotothrix gelatinosa	1	1	0	2	2	1		114	123	0	246	184	123
Oocytsis sp.	5	2	0	3	4	5		768	332	0	415	498	665
Sphaerocystis schroeteri	0	0	0	0	24	10		0	0	0	0	0	0
unidentified Colonial green	4	2	0	2	2	0		0	0	0	0	0	0
Diatoms (Bacillariophyceae)													
Asterionella formosa	4	4	0	2	9	6		1060	1147	0	655	2621	1802
Aulacoseira granulata	6	6	11	23	25	16		1845	1995	3446	7073	7617	5078
Aulacoseira granulata var. *angustissima*	17	24	11	26	30	20		4501	6236	2738	6692	7757	5171
Cocconeis	0	1	0	0	0	0		0	306	0	0	0	0
Cyclotella stelligera	10	7	5	6	14	11		1645	1123	842	1030	2246	1685
Fragilaria crotonensis	13	18	0	31	20	11		4648	6283	0	11100	7121	3770
Nitzschia sp.	1	1	1	0	2	3		422	456	228	0	913	1141
Synedra sp.	0	0	1	1	1	2		0	0	230	230	461	922
Amphora sp.	0	0	1	0	0	1		0	0	306	0	0	306
Small unknown diatom sp.	0	0	0	1	1	1		0	0	0	129	64	129
Desmids (Mesotaeniaceae, Desmidiaceae)													
Closterium acutum var. *variable*	1	0	2	1	1	0		204	0	662	221	221	0
Chrysophtya (Chrysophyceae)													
Dinobryon sp.	14	32	0	30	12	0		798	1898	0	1795	725	0
Cryptomonas sp.	0	0	0	2	1	1		0	0	0	337	168	168
Dinoflagellates (Dinophyceae)													
Ceratium hirundinella	0	0	0	0	0	0		210	0	0	210	0	0
Flagellates 5µm													
Flagellates < 5µm/unicells	23	25	11	24	22	8		795	880	389	839	778	287

Lake Taupo phytoplankton species composition and biovolume (μm^3) 2010-2011

From Site A (Mid Lake) 10/11/2010

Sample code	KD1	KD2	KD3	KD6	KD11	KD16		KD1	KD2	KD3	KD6	KD11	KD16
Depth	Surface	10m	20m	50m	100m	150m		Surface	10m	20m	50m	100m	150m
	10/11/2010	10/11/2010	10/11/2010	10/11/2010	10/11/2010	10/11/2010		10/11/2010	10/11/2010	10/11/2010	10/11/2010	10/11/2010	10/11/2010
	Cells/ml	Cells/ml	Cells/ml	Cells/ml	Cells/ml	Cells/ml		µm3	µm3	µm3	µm3	µm3	µm3
Blue greens (Cyanophyceae)													
Anabaena c.f. lemmermannii	11.4	48.7	25.5	6.1	0.0	0.0		1023	4387	2293	547	0	0
***Aphanocapsa* sp.**	0.0	0.0	0.0	0.0	0.0	8.2		0	0	0	0	0	74
***Pseudanabaena* sp.**	0.0	0.0	0.0	0.0	0.1	40.6		0	0	0	0	3	772
Greens (Chlorophyceae)													
Actinastrum hantschii	0	0	0.0	0	0	0.2		0	0	0	0	0	0
Monoraphidium* sp. / *Ankistrodesmus falcatus	382	539	235	115	38	0.4		16042	22631	9884	4817	1593	15
Stichococcus contortus	0	0	0	18	9	0.0		0	0	0	321	160	0
Botryococcus braunii (colonies)	0.0	0	0	0	0	0		0	0	0	0	110	0
Dictyosphaerium sp.	1	20	2	9	0	0		0	0	0	0	0	0
Eudorina elegans	1	1	1	1	0	0		277	150	138	300	0	0
***Oocytsis* sp.**	4	2	2	9	2	0		615	332	307	1246	229	0
***Scenedesmus* sp.**	0	2	0	2	0	10		0	122	0	122	0	504
Diatoms (Bacillariophyceae)													
Asterionella formosa	102	129	73	104	10	6		28630	36036	20450	29156	2711	1582
Aulacoseira granulata	18	137	76	235	88	140		5534	42436	23479	72903	27390	43274
Aulacoseira granulata* var. *angustissima	0	0	0	18	5	0		0	0	0	4715	1259	0
Cyclotella stelligera	2	2	2	4	0	4		346	374	346	655	0	581
Fragilaria crotonensis	16	15	6	4	0	0		5810	5236	2130	1257	0	0
***Nitzschia* sp.**	0	5	3	2	4	4		0	1825	1266	684	1573	1731
***Synedra* sp.**	3	0	0	1	1	0		1279	0	0	461	318	0
Desmids (Mesotaeniaceae, Desmidiaceae)													
Closterium acutum* var. *variable	0	0	0	2	0	1		0	0	0	662	152	456
***Mougeotia* sp.**	0	0	0	2	0	0		0	0	0	0	0	0
Staurastrum tangaroaii	0	1	1	0	0	0		0	0	0	0	0	0
Chrysophtya (Chrysophyceae)													
***Dinobryon* sp.**	62	191	145	13	0	0		3639	11252	8554	759	0	0
***Cryptomonas* sp.**	0	0	0	1	1	0		0	0	0	168	116	0
Dinoflagellates (Dinophyceae)													
***Gymnodinium* sp. 1**	0	1	1	0	0	1		0	644	1190	0	0	888
***Gymnodinium* sp. 2**	0	0	1	1	0	0		0	0	27050	14625	0	0
***Gonyaulax* sp.**	207	2	4	0	0	0		413324	4680	7574	0	0	0
Flagellates 5µm													
Flagellates < 5µm/unicells	214	205	188	147	26	28		7498	7166	6589	5160	918	988

Lake Taupo phytoplankton species composition and biovolume (µm^3) 2010-2011

From Site A (Mid Lake) 13/04/2011

Sample code	RL1	RL2	RL6	RL11	RL16		RL1	RL2	RL6	RL11	RL16
Depth	0m	10m	50m	100m	150m		0m	10m	50m	100m	150m
	13/04/2011	13/04/2011	13/04/2011	13/04/2011	13/04/2011		13/04/2011	13/04/2011	13/04/2011	13/04/2011	13/04/2011
	Cells/ml	Cells/ml	Cells/ml	Cells/ml	Cells/ml		µm3	µm3	µm3	µm3	µm3
Blue greens (Cyanophyceae)											
Dolichospermum c.f. lemmermannii (formally; Anabaena c.f. lemmermannii)	16.7	5.0	0.4	0.0	0.0		1933	580	42	0	0
Gloeocapsa sp.	0.0	0.0	0.2	0.0	0.0		0	0	2	0	0
Snowella sp.	0.0	0.0	0.0	0.2	0.0		0	0	0	5	0
Pseudanabaena sp.	2.8	0.0	0.0	0.0	0.0		54	0	0	0	0
Greens (Chlorophyceae)											
Monoraphidium* sp. / *Ankistrodesmus falcatus	2	1	5	1	2		74	49	217	49	74
Botryococcus braunii (colonies)	0	1	0	0	0		8760	512447	0	0	0
Dictyosphaerium	2	2	2	0	0		97	97	97	0	0
Elakotothrix gelatinosa	2	0	0	0	0		227	0	0	0	0
Eudorina elegans	0	0	0	0	0		18	0	0	0	0
***Oocytsis* sp.**	44	55	1	0	0		6223	7808	166	0	0
Diatoms (Bacillariophyceae)											
Asterionella formosa	3	3	2	1	2		746	819	655	328	655
Aulacoseira granulata	6	1	4	2	2		1753	363	1088	544	725
Aulacoseira granulata var. angustissima	0	3	18	19	15		0	760	4563	4867	3802
Cyclotella stelligera	3	2	1	2	1		420	374	187	281	94
Fragilaria crotonensis	14	23	0	0	0		4889	8377	0	0	0
Fragilaria sp.	0	0	1	0	0		0	0	209	0	0
Nitzschia sp.	0	0	1	0	0		0	0	228	0	0
Synedra sp.	0	1	0	0	0		0	230	0	0	0
Rhoicosphenia sp.	0	0	1	0	0		0	0	306	0	0
Small unknown diatom sp.	0	0	1	0	0		0	0	129	0	0
Desmids (Mesotaeniaceae, Desmidiaceae)											
Closterium acutum* var. *variable	0	1	1	0	0		0	221	221	0	0
Chrysophtya (Chrysophyceae)											0
***Dinobryon* sp.**	13	13	0	1	1		751	794	0	35	35
***Cryptomonas* sp.**	0	1	2	0	0		0	84	253	0	0
Dinoflagellates (Dinophyceae)											0
***Gymnodinium* sp. 1**	1	1	0	0	0		595	643	0	0	0
Flagellates 5µm											0
Flagellates < 5µm/unicells	35	32	28	6	3		1214	1106	983	225	102

Lake Taupo phytoplankton species composition and biovolume (µm^3) 2009-2010

From Site A (Mid Lake) 19/10/2009

Sample code	OT1	OT2	OT3	OT6	OT8	OT11	OT16	OT1	OT2	OT3	OT6	OT8	OT11	OT16
Depth	Surface	10m	20m	50m	70m	100m	150m	Surface	10m	20m	50m	70m	100m	150m
	Cell (per ml)	Cell (per ml)	Cell (per ml)	Cell (per ml)	Cell (per ml)	Cell (per ml)	Cell (per ml)	Biovolume (µm^3)	Biovolume (µm^3)	Biovolume (µm^3)	Biovolume (µm^3)	Biovolume (µm^3)	Biovolume (µm^3)	Biovolume (µm^3)
Blue greens (Cyanophyceae)														
Dolichospermum c.f. lemmermannii (formally; Anabaena c.f. lemmermannii)	27.4	6.8	1.1	0.4	0.0	0.0	0.1	2470	610	99	40	0	0	9
***Chroococcus* sp.**	0.2	0.0	0.0	0.0	0.0	0.0	0.0	2	0	0	0	0	0	0
***Microcystis* sp.**	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0	19	0	0	0	0	0
Dictyosphaerium sp.	18.0	31.6	31.3	7.4	2.7	0.4	0.0	451	789	782	186	67	11	0
***Phormidium* sp.**	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0
***Pseudanabaena* sp.**	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0	0	0	0	4	0	0
Greens (Chlorophyceae)														
Monoraphidium* sp. / *Ankistrodesmus falcatus	2	4	0	0	12	0	0	68	147	0	0	491	0	0
Botryococcus braunii (colonies)	0.0	0	0	0	0	0	0	30946	0	950	0	0	0	1900
***Crucigeniella* sp**	4	8	0	0	0	2	0	281	494	0	0	0	152	0
Dictyosphaerium sp.	0	0	0	0	0	0	9	0	0	0	0	0	0	658
Eudorina elegans	0	0	0	11	0	0	0	0	0	0	2696	0	0	0
Nephrocytium agardhianum	0	11	5	0	0	0	0	0	790	351	0	0	0	0
***Oocytsis* sp.**	0	7	5	0	2	2	0	0	997	665	0	332	332	0
Westella botryoides	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Paulschulzia sp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diatoms (Bacillariophyceae)														
Asterionella formosa	128	218	97	78	26	4	43	35749	60934	27191	21785	7207	983	12121
Aulacoseira granulata* var. *angustissima	17	49	43	21	65	40	36	4360	12624	11103	5476	16883	10343	9278
Cyclotella stelligera	4	5	1	2	11	15	18	692	842	187	374	1778	2340	2808
Fragilaria crotonensis	267	467	352	153	76	32	47	95677	167335	126077	54871	27226	11519	16754
***Nitzschia* sp.**	1	0	1	0	0	0	0	422	0	228	0	0	0	0
***Synedra* sp.**	1	2	0	0	0	0	2	213	922	0	0	0	0	691
Desmids (Mesotaeniaceae, Desmidiaceae)														
Closterium aciculare	0	1	1	0	0	0	0	0	350	350	0	0	0	0
Closterium acutum* var. *variable	2	1	0	1	2	1	1	612	441	0	441	662	221	441
Chrysophtya (Chrysophyceae)														
***Dinobryon* sp.**	23	70	140	89	3	0	0	1373	4142	8284	5246	173	0	0
***Cryptomonas* sp.**	0	0	0	1	1	0	0	0	0	0	84	168	0	0
Dinoflagellates (Dinophyceae)														
***Gymnodinium* sp. 1**	1	0	0	0	0	0	0	595	0	0	0	0	0	0
***Gymnodinium* sp. 2**	0	0	0	0	0	0	0	0	0	2925	2925	0	0	0
***Peridinium* sp.**	0	0	0	0	0	0	0	0	0	0	1170	0	0	0
***Gonyaulax* sp.**	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Flagellates 5µm														
Flagellates < 5µm/unicells	144	294	211	172	159	79	102	5037	10299	7371	6020	5569	2764	3583

Lake Taupo phytoplankton species composition and biovolume (µm^3) 2009-2010

From Site A (Mid Lake) 7/04/2010

Sample code Depth	YZ1 Surface Cell (per ml)	YZ2 10m Cell (per ml)	YZ3 20m Cell (per ml)	YZ6 50m Cell (per ml)	YZ11 100m Cell (per ml)	YZ16 150m Cell (per ml)	YZ1 Surface Biovolume (µm^3)	YZ2 10m Biovolume (µm^3)	YZ3 20m Biovolume (µm^3)	YZ6 50m Biovolume (µm^3)	YZ11 100m Biovolume (µm^3)	YZ16 150m Biovolume (µm^3)
Blue greens (Cyanophyceae)												
Anabaena c.f. lemmermannii	10.2	27.6	15.4	5.3	0.3	0.6	921	2482	1390	475	27	53
Dolichospermum planctonicum (formerly***; Anabaena planktonica)***	0.6	0.0	0.0	0.0	0.0	0.0	242	0	0	0	0	0
***Aphanocapsa* sp.**	0.0	0.0	0.0	0.0	0.4	0.0	0	0	0	0	4	0
***cf Heteroleibleinia* sp.**	0.0	0.0	0.3	0.0	0.0	0.0	0	0	5	0	0	0
***Phormidium* sp.**	0.0	0.0	0.0	0.0	0.0	0.4	0	0	0	0	0	8
***Pseudanabaena* sp.**	0.0	0.0	0.0	0.0	2.3	0.3	0	0	0	0	44	6
Greens (Chlorophyceae)												
Monoraphidium* sp. */ Ankistrodesmus falcatus	0	0	0	111	0	0	0	0	0	4643	0	0
Botryococcus braunii (colonies)	0.0	0	0	0	0	0	1200	76	6621	0	76	76
Elakotothrix gelatinosa	1	0	0	0	0	0	157	0	0	0	0	0
Eudorina elegans	0	0	4	0	0	0	96	0	930	0	0	0
Nephrocytium agardhianum	10	2	2	2	0	0		182	0	0	0	0
Nephrocytium lunatum	0	5	0	0	0	0	784	387	121	121	0	0
***Oocytsis* sp.**	16	28	12	23	2	15	2225	4010	1719	3208	344	2177
Quadrigula lacustrus	1	0	0	0	0	0	245	0	0	0	0	0
***Scenedesmus* sp.**	0	2	0	3	0	0	0	84	0	168	0	0
Diatoms (Bacillariophyceae)												
Asterionella formosa	0	0	0	0	1	0	0	0	0	0	226	0
Aulacoseira granulata	0	0	0	0	0	8	116	0	0	0	0	2626
Aulacoseira granulata* var. *angustissima	0	0	0	1	5	0	0	0	0	210	1259	0
Cocconeis	0	0	0	0	0	0	0	0	211	0	0	0
Cyclotella stelligera	4	0	0	2	0	1	716	0	0	323	0	194
Fragilaria crotonensis	0	23	7	8	2	1	134	8088	2600	2744	578	433
***Nitzschia* sp.**	2	4	4	0	1	0	873	1416	1416	0	315	0
***Eunotia* sp.**	4	0	0	0	0	0	0	0	0	0	0	0
Desmids (Mesotaeniaceae, Desmidiaceae)												
Closterium acutum* var. *variable	0	0	0	1	1	0	0	0	0	304	456	152
***Staurastrum* sp.**	0	0	0	0	0	0	0	0	0	1	0	0
Chrysophtya (Chrysophyceae)												
***Dinobryon* sp.**	42	13	61	6	0	0	2487	738	3618	381	0	0
***Cryptomonas* sp.**	0	0	0	2	0	0	0	0	58	232	0	0
Dinoflagellates (Dinophyceae)												
Ceratium hirundinella	0	0	2	4	0	0	126	147	246	369	0	0
***Gymnodinium* sp. 1**	0	1	0	0	0	0	0	888	0	0	444	0
***Gymnodinium* sp. 2**	0	1	0	0	0	0	0	20172	0	0	0	0
***Gonyaulax* sp.**	6	5	3	0	0	0	12686	10490	5648	0	0	0
Flagellates 5µm												
Flagellates < 5µm/unicells	47	59	56	40	11	19	1658	2062	1949	1384	395	650

Lake Taupo phytoplankton species composition and biovolume (μm^3) 2008-2009

From Site A (Mid Lake) 15/04/2009

Sample code	SZ1	SZ2	SZ3	SZ6	SZ11	SZ16	SZ1	SZ2	SZ3	SZ6	SZ11	SZ16
Depth	Surface	10m	20m	50m	100m	150m	Surface	10m	20m	50m	100m	150m
	Cell (per ml)	Cell (per ml)	Cell (per ml)	Cell (per ml)	Cell (per ml)	Cell (per ml)	Biovolume (μm^3)	Biovolume (μm^3)	Biovolume (μm^3)	Biovolume (μm^3)	Biovolume (μm^3)	Biovolume (μm^3)
Species composition by class												
Blue greens (Cyanophyceae)												
Dolichospermum c.f. lemmermannii (formally; Anabaena c.f. lemmermannii)	0.0	1.3	0.0	0.8	0.0	0.0	0	51	0	31	0	0
Aphanothece sp.	0.0	0.0	0.0	0.0	7.3	0.0	0	0	0	0	66	0
Pseudanabaena sp.	0.0	0	0.0	0.0	22.2	5.3	0	0	0	0	422	100
Greens (Chlorophyceae)												
Monoraphidium sp. / Ankistrodesmus falcatus	68	71	0.5	55	13	6	2875	2998	22	2318	545	273
Stichococcus contortus	0	0	0.0	0	17	15	0	0	0	0	302	263
Kirchneriella contorta	0	0	0.0	1	0	0	0	0	0	36	0	0
Botryococcus braunii (colonies)	0.0	0	0.0	0.0	0	0	0	0	21653	16240	76507.95	0
Elakotothrix gelatinosa	5	10	2	2	0	0	491	1044	227	227	0	0
Nephrocytium agardhianum	2	0	0	0	0	0	0	0	0	0	0	0
Oocytsis sp.	6	1	4	1	4	1	831	166	581	166	498	166
Quadrigula lacustrus	2	0	0	0	0	0	384	0	0	0	0	0
Diatoms (Bacillariophyceae)												
Asterionella formosa	94	71	102	71	6	2	26372	19820	28501	19984	1802	655
Aulacoseira granulata	0	0	0	1	3	1	0	0	0	363	907	363
Aulacoseira granulata var. angustissima	1	22	8	8	0	0	304	5628	2129	1977	0	0
Cyclotella stelligera	5	4	11	4	2	2	842	562	1685	562	374	281
Fragilaria crotonensis	151	42	9	183	15	7	54033	14870	3141	65552	5236	2513
Synedra sp.	1	0	0	0	0	0	0	0	0	0	0	0
Eunotia sp.	0	1	0	0	0	0	0	0	0	0	0	0
Desmids (Mesotaeniaceae, Desmidiaceae)												
Closterium aciculare	1	1	0	1	0	0	701	701	0	701	0	0
Closterium acutum var. variable	0	0	1	0	1	1	0	0	221	0	221	221
Chrysophtya (Chrysophyceae)												
Dinobryon sp.	1	0	32	3	0	0	69	0	1898	173	0	0
Cryptomonas sp.	0	1	0	1	0	0	0	84	0	84	0	0
Dinoflagellates (Dinophyceae)												
Gymnodinium sp. 2	1	0	1	0	0	0	14625	0	14625	0	0	0
Flagellates 5µm												
Flagellates < 5µm/unicells	132	201	111	140	24	13	4607	7023	3870	4914	839	450

Lake Taupo phytoplankton species composition and biovolume (µm^3) 2008-2009

From Site A (Mid Lake) 14/10/2008

Sample code	EU1	EU2	EU6	EU8	EU11	EU16	EU1	EU2	EU6	EU8	EU11	EU16
Depth	Surface	10m	50m	70m	100m	150m	Surface	10m	50m	70m	100m	150m
	Cell (per ml)	Cell (per ml)	Cell (per ml)	Cell (per ml)	Cell (per ml)	Cell (per ml)	Biovolume (µm^3)	Biovolume (µm^3)	Biovolume (µm^3)	Biovolume (µm^3)	Biovolume (µm^3)	Biovolume (µm^3)
Species composition by class												
Blue greens (Cyanophyceae)												
Dolichospermum c.f. lemmermannii (formally; Anabaena c.f. lemmermannii)	1.2	8.5	1.6	0.0	0.0	0.0	104	767	143	4	0	0
Dolichospermum sp. (formally; Anabaena **sp.)**	0.5	0.9	0.0	0.0	0.0	0.0	49	83	0	0	0	0
Pseudanabaena sp.	0.0	0.0	0.0	1.7	0.3	0.6	0	0	0	33	5	11
Greens (Chlorophyceae)												
Monoraphidium sp. / Ankistrodesmus falcatus	0	0	54	2	19	2	0	0	2260	66	786	82
Botryococcus braunii (colonies)	0.0	1	0	0	1	0	123784	1111500	370500	0	741000	0
Crucigeniella sp	52	53	5	3	0	0	3399	3448	304	203	0	0
Elakotothrix gelatinosa	1	0	0	0	0	0	76	0	0	0	0	0
Eudorina elegans	0	11	2	0	0	0	0	2796	599	0	0	0
Oocytsis sp.	3	0	2	0	1	0	410	0	222	0	111	0
Westella botryoides	0	5	3	2	0	0	0	304	203	152	0	0
Paulschulzia sp.	2	0	0	0	0	0	0	0	0	0	0	0
Diatoms (Bacillariophyceae)												
Asterionella formosa	3	6	4	4	1	1	707	1638	1201	1092	218	218
Aulacoseira granulata	0	2	4	9	5	1	0	605	1209	2660	1693	242
Aulacoseira granulata var. angustissima	0	2	6	0	0	2	0	507	1622	0	0	406
Cyclotella stelligera	1	1	4	1	0	0	115	187	686	125	62	62
Fragilaria crotonensis	6	10	0	0	0	1	2066	3630	0	0	0	419
Nitzschia sp.	0	0	0	0	0	0	70	152	0	0	0	152
Desmids (Mesotaeniaceae, Desmidiaceae)												
Closterium aciculare	0	0	0	0	0	0	0	0	117	0	0	0
Closterium acutum var. variable	0	0	0	2	0	0	0	0	147	735	0	0
Chrysophtya (Chrysophyceae)												
Dinobryon sp.	7	2	0	0	0	0	426	138	0	0	0	0
Cryptomonas sp.	0	0	1	0	0	0	0	0	168	0	0	0
Dinoflagellates (Dinophyceae)												
Gymnodinium sp. 1	0	2	0	0	0	0	0	2145	0	0	0	0
Gymnodinium sp. 2	0	1	0	0	0	0	0	19500	0	0	0	0
Gonyaulax sp.	1	1	0	0	0	0	2164	1560	0	0	0	0
Flagellates 5µm												
Flagellates < 5µm/unicells	34	46	27	22	10	9	1174	1611	956	778	355	300

Lake Taupo phytoplankton species composition and biovolume (µm^3) 2007-2008

From Site A (Mid Lake) 30/10/2007

Sample code	**ZA1**	**ZA2**	**ZA3**	**ZA6**	**ZA8**	**ZA11**	**ZA16**	**ZA1**	**ZA2**	**ZA3**	**ZA6**	**ZA8**	**ZA11**	**ZA16**
Depth	**Surface**	**10m**	**20m**	**50m**	**70m**	**100m**	**150m**	**Surface**	**10m**	**20m**	**50m**	**70m**	**100m**	**150m**
Species composition by class	cell (per ml)	cell (per ml)	cell (per ml)	cell (per ml)	cell (per ml)	cell (per ml)	cell (per ml)	Biovolume (µm^3)	Biovolume (µm^3)	Biovolume (µm^3)	Biovolume (µm^3)	Biovolume (µm^3)	Biovolume (µm^3)	Biovolume (µm^3)
Blue greens (Cyanophyceae)														
Anabaena lemmermannii	18.7	22.0	2.9	0.4	0.0	0.0	1.6	1683	1976	257	33	0	0	140
Chroococcus sp.	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0	0	0	1	0	0	0
Aphanocapsa sp.	0.0	0.0	0.0	6.9	0.0	5.8	6.6	0	0	0	62	0	52	59
Planktolyngbya sp.	21.3	0.0	0.0	0.0	0.0	0.0	0.0	192	0	0	0	0	0	0
Pseudanabaena sp.	0.0	0.0	0.0	0.0	0.0	4.9	0.3	0	0	0	0	0	94	6
Greens (Chlorophyceae)														
Monoraphidium sp. / *Ankistrodesmus falcatus*	52	21	29	15	6	0	0	2187	885	1229	614	270	0	0
Stichococcus contortus	39	6	13	15	6	2	4	706	116	242	274	116	42	63
Botryococcus braunii (colonies)	0	0	0	1	0	0	0	0	0	0	235139	0	804	0
Eudorina elegans	13	3	7	0	0	0	0	3295	749	1797	0	0	0	0
Crucigeniella sp.	0	2	8	5	5	0	0	0	152	532	304	304	0	0
Nephrocytium agardhianum	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oocytsis sp.	9	4	0	1	0	9	1	1246	498	0	166	0	1246	166
Diatoms (Bacillariophyceae)														
Asterionella formosa	33	73	102	62	34	4	14	9173	20311	28665	17363	9500	983	3931
Aulacoseira granulata	15	37	91	25	9	25	13	4715	11606	28109	7617	2902	7617	4171
Aulacoseira granulata var. angustissima	0	0	0	0	0	3	0	0	0	0	0	0	761	0
Cyclotella stelligera	6	8	22	9	5	9	10	1030	1217	3557	1404	842	1404	1591
Fragilaria crotonensis	11	14	22	7	7	20	2	3770	5026	7958	2513	2513	7330	838
Nitzschia sp.	0	0	0	0	0	1	0	0	0	0	0	0	228	0
Desmids (Mesotaeniaceae, Desmidiaceae)														
Closterium aciculare	1	1	0	1	1	1	1	701	350	0	526	526	350	350
Closterium acutum var. *variable*	1	1	0	0	0	0	0	221	265	0	44	0	0	0
Chrysophtya (Chrysophyceae)														
Dinobryon sp.	275	182	227	135	108	1	0	16222	10734	13392	7938	6351	69	0
Cryptomonas sp.	0	0	1	1	0	0	0	0	0	168	168	0	0	0
Dinoflagellates (Dinophyceae)														
Gymnodinium sp. 1	0	1	1	1	1	0	0	0	3510	3510	1755	1755	0	0
Gymnodinium sp. 2	0	1	0	1	0	0	0	0	14044	26750	1463	0	0	0
Flagellates 5µm														
Flagellates < 5µm/unicells	139	404	406	243	144	25	13	4853	14148	14210	8497	5037	860	450

Lake Taupo phytoplankton species composition and biovolume (µm^3) 2007-2008

From Site A (Mid Lake) 17/04/2008

Sample code	KA1	KA2	KA3	KA6	KA11	KA16	KA1	KA2	KA3	KA6	KA11	KA16
Depth	Surface	10m	20m	50m	100m	150m	Surface	10m	20m	50m	100m	150m
Species composition by class	cell (per ml)	cell (per ml)	cell (per ml)	cell (per ml)	cell (per ml)	cell (per ml)	Biovolume (µm^3)	Biovolume (µm^3)	Biovolume (µm^3)	Biovolume (µm^3)	Biovolume (µm^3)	Biovolume (µm^3)
Blue greens (Cyanophyceae)												
Anabaena lemmermannii	44.8	46.9	24.3	0.0	6.5	1.4	4031	4220	2183	0	584	16
Pseudanabaena sp.	0.0	0.0	0.0	0.0	0.0	17.4	0	0	0	0	0	331
Greens (Chlorophyceae)												
Monoraphidium sp. / *Ankistrodesmus falcatus*	14	3	8	8	0	1	590	123	344	344	0	49
Stichococcus contortus	6	26	6	0	0	0	116	463	116	0	0	0
Botryococcus braunii (colonies)	0	0	0	0	0	1	54	31352	6431	26908	1608	156759
Elakotothrix gelatinosa	0	1	1	0	1	0	0	154	123	0	123	0
Eudorina elegans	0	6	0	0	0	0	75	1498	75	0	0	0
Crucigeniella sp.	0	0	0	1	0	0	0	0	0	76	0	0
Oocytsis sp.	2	10	2	0	2	1	332	1412	332	0	332	83
Westella botryoides	0	0	0	0	0	0	0	0	0	8	0	0
Diatoms (Bacillariophyceae)												
Asterionella formosa	12	23	32	12	3	4	3276	6552	8935	3276	819	983
Aulacoseira granulata	5	16	5	12	5	9	1484	4946	1484	3808	1632	2720
Cyclotella stelligera	2	6	2	5	1	1	340	936	340	749	94	94
Fragilaria crotonensis	4	10	39	1	1	1	1523	3427	14089	419	419	209
Nitzschia sp.	0	0	22	0	0	0	0	0	8442	0	0	0
Small unknown diatom sp.	0	0	0	0	1	0	0	0	0	0	64	0
Desmids (Mesotaeniaceae, Desmidiaceae)												
Closterium aciculare	0	1	0	0	1	0	105	701	105	0	350	4
Closterium acutum* var. *variable	0	1	2	2	0	0	0	221	662	662	0	22
Chrysophtya (Chrysophyceae)												
Dinobryon sp.	64	164	101	0	0	0	3797	9664	5971	0	0	0
Cryptomonas sp.	1	1	1	3	0	0	84	84	84	421	0	0
Dinoflagellates (Dinophyceae)												
Gymnodinium sp. 1	1	1	1	0	0	0	3191	3191	3191	0	0	0
Gymnodinium sp. 2	0	0	0	0	0	0	0	0	0	146	134	0
Flagellates 5µm												
Flagellates < 5µm/unicells	46	126	196	37	7	3	1619	4411	6850	1290	246	102

Lake Taupo phytoplankton species composition and biovolume (µm3) 2006-2007

From Site A (Mid Lake) 1/11/2006

Sample code	HW1	HW3	HW6	HW11	HW16	HW1	HW3	HW6	HW11	HW16
Depth	surface	20 m	50 m	100 m	150 m	surface	20 m	50 m	100 m	150 m
	cell (per ml)	cell (per ml)	cell (per ml)	cell (per ml)	cell (per ml)	Biovolume (µm^3)	Biovolume (µm^3)	Biovolume (µm^3)	Biovolume (µm^3)	Biovolume (µm^3)
Species composition by class										
Blue greens (Cyanophyceae)										
Anabaena lemmermannii	63	25	0	0	0	3488.1	1367	25	15	0
Aphanocapsa sp.	0	0	2	3	0	0	0	14	31	0
Greens (Chlorophyceae)										
Botryococcus braunii (colonies)	0	0	0	0	0	5151	5901	7321	0	0
Chlorosarcinopsis sp.	3	0	2	2	0	259	0	182	208	0
Eudorina elegans	2	5	6	0	0	621	1198	1498	0	0
Kirchneriella contorta	5	4	0	0	0	176	116	0	0	0
Lagerheimia sp.	0	1	1	0	0	0	125	166	0	0
Monoraphidium sp. / *Ankistrodesmus falcatus*	3	0	0	0	0	143	0	0	0	0
Oocytsis sp.	7	6	6	6	3	1034	872	831	831	415
Westella botryoides	0	0	7	0	0	0	0	0	0	0
Diatoms (Bacillariophyceae)										
Asterionella formosa	14	8	7	8	2	3806	2129	1884	2211	573
Aulacoseira granulata	63	54	49	47	54	19413	16866	15052	14689	16594
Aulacoseira granulata var. *angustissima*	0	0	2	3	0	0	0	456	837	0
Cyclotella stelligera	46	8	4	7	4	7301	1264	562	1123	655
Fragilaria crotonensis	5	0	2	8	3	1912	0	628	2723	1047
Nitzschia sp.	2	1	1	0	0	947	342	342	0	0
Desmids (Mesotaeniaceae, Desmidiaceae)										
Closterium aciculare	0	0	0	0	0	0	35	175	0	0
Closterium acutum var. *variable*	0	0	0	0	0	0	0	110	0	0
Chrysophtya (Chrysophyceae)										
Dinobryon sp.	8	4	6	0	0	458	242	362	0	0
Dinoflagellates (Dinophyceae)										
Gymnodinium sp. 1	0	1	0	0	0	0	2633	1316	0	88
Gymnodinium sp. 2	0	0	0	0	0	6068	0	0	0	0
Flagellates 5µm										
Flagellates < 5µm/unicells	50	19	31	23	4	1750	676	1085	788	143

Lake Taupo phytoplankton species composition and biovolume (µm3) 2006-2007

From Site A (Mid Lake) 2/04/2007

Sample code	**HW17**	**HW18**	**HW19**	**HW22**	**HW27**	**HW32**	**HW17**	**HW18**	**HW19**	**HW22**	**HW27**	**HW32**
Depth	**surface**	**10 m**	**20 m**	**50 m**	**100 m**	**150 m**	**surface**	**10 m**	**20 m**	**50 m**	**100 m**	**150 m**
	cell (per ml)	cell (per ml)	cell (per ml)	cell (per ml)	cell (per ml)	cell (per ml)	Biovolume (μm^3)	Biovolume (μm^3)	Biovolume (μm^3)	Biovolume (μm^3)	Biovolume (μm^3)	Biovolume (μm^3)
Species composition by class												
Blue greens (Cyanophyceae)												
Anabaena lemmermannii	36	65	56	0	2	0	1493	2655	2286	5	86	10
Greens (Chlorophyceae)												
Botryococcus braunii (colonies)	1	0	0	0	0	0	27630	0	0	41446	0	0
Monoraphidium sp. / *Ankistrodesmus falcatus*	49	17	17	0	1	0	2064	725	725	0	25	0
Oocytsis sp.	2	1	1	0	1	0	332	166	125	0	166	0
Stichococcus contortus	0	0	0	0	0	1	0	0	0	0	0	21
Diatoms (Bacillariophyceae)												
Asterionella formosa	0	0	1	0	0	1	0	82	246	0	0	164
Aulacoseira granulata	2	0	0	5	11	8	544	0	0	1541	3264	2630
Aulacoseira granulata var. *angustissima*	0	0	0	0	7	2	0	0	0	76	1901	608
Cyclotella stelligera	1	1	1	1	2	1	168	94	94	234	374	140
Eunotia sp.	0	0	0	0	4	0	0	0	0	0	0	0
Fragilaria crotonensis	0	0	0	0	0	1	0	0	0	0	0	209
Nitzschia sp.	2	0	1	0	0	0	799	114	228	0	0	0
Small unknown diatom sp.	0	0	0	0	1	0	0	0	0	0	64	0
Desmids (Mesotaeniaceae, Desmidiaceae)												
Closterium aciculare	0	0	0	1	4	0	0	0	0	350	2453	0
Closterium acutum var. *variable*	0	0	0	1	0	0	0	0	0	331	0	0
Chrysophtya (Chrysophyceae)												
Cryptomonas sp.	0	1	1	4	0	0	0	211	126	590	0	0
Dinobryon sp.	0	0	0	1	0	0	0	0	0	86	0	0
Dinoflagellates (Dinophyceae)												
Gymnodinium sp. 1	1	0	0	0	0	0	2106	878	878	176	0	0
Gymnodinium sp. 2	1	1	1	0	0	0	14625	21938	14625	0	0	0
Flagellates 5µm												
Flagellates < 5µm/unicells	185	97	84	127	16	10	6470	3389	2928	4433	573	338

Appendix 6. Historical data

Historical data held by NIWA has frequently been referred to and included in some analysis or comparison of the data from the long-term monitoring programme. To ensure that these data are always readily available, copies of the relevant historical data are included in this report. These data are the spring and autumn profiles of NO_3-N and DRP from 1974 to 1990 extracted from archived data books. The nitrate data for 27 September 1979 was taken from Vincent (1983). Subsequent data can be found in the previous appendices.

Note that the profiles given are aligned with the spring data above the corresponding autumn data, by date. Note also that the early profiles were to a depth of 110 m rather than 150 m. Also, as there was no March or April data collected in 1976, for completeness, the last valid profile in that series (12 January 1976) has been included.

The elapsed time given is the number of days between the spring profile in about October and the autumn profile in March/April of the following year. The average elapsed time between the two samplings across all data from 1974 to 2006 is 165 days.

The historical data also include an un-paired profile from July 1987. As there were no data for April 1987 and the lake was still stratified in July, when the next period of monitoring began, the July 1987 may be used as an indication of the total mass of nutrient accumulation in that year. Because these data are for an un-paired profile in July and not April, if the data are converted to rate estimates the assumption must be made that there was no spring carryover and the elapsed time is longer, being estimated as the average elapsed time plus three months.

Because the 1976 and 1987 data are for periods other than spring (October/November) to autumn (March/April), these data points have been excluded from any regression analysis of time-series data although the data points have been plotted as an indication of levels/rates for those years.

Historical data from Site A in Lake Taupo

Nitrate concentrations (mg m^{-3})

Spring

Date	**18/11/1974**	**16/10/1975**	**4/10/1977**	**10/10/1978**	**27/09/1979**	**5/10/1987**	**17/10/1988**	**6/10/1989**
Depth (m)								
0	0.8	0.3	1.1	0.0	0.0	0.3	2.6	1.2
10	0.3	0.4	1.2	1.4	0.0	0.4	2.7	1.8
20	0.0	0.0	0.6	0.8	0.5	0.5	2.8	1.0
30	0.3	0.4	0.0	0.7	0.5	0.4	2.8	1.4
40	0.8	0.0	0.1	0.6	1.0	0.6	3.0	1.3
50	2.1	0.3	0.6	0.7	1.0	0.8	2.9	1.0
60	4.9	0.0	1.0	0.8	0.5	1.2	2.5	0.8
70	4.1	0.4	1.1	0.8	1.0	1.0	2.9	1.6
80	5.3	0.0	3.2	1.2	1.5	1.4	2.9	1.6
90	5.4	0.0	1.3	1.2	1.0	1.5	2.5	1.7
100	8.4	1.8	3.3	1.4	1.5	1.2	2.6	1.7
110	12.0	4.1	2.8	1.4	1.5	6.0	2.4	0.8
120			2.8	1.7	2.5	0.7	2.7	1.6
130			2.7	2.1	5.0	1.2	2.7	1.1
140			1.7	2.1	6.0	1.2	3.1	1.1
150			1.4	2.5	7.0	1.1	2.4	0.3

Autumn

Date	**14/04/1975**	**12/01/1976**	**14/03/1978**	**10/04/1979**	**10/03/1980**	**7/07/1987**	**5/04/1988**	**4/04/1989**	**10/04/1990**
Depth (m)									
0	0.8	0.5	0.0	0.3	0.0	2.0	1.1	2.1	0.1
10	0.4	1	0.0	0.0	0.3	1.6	1.3	2.5	0.6
20	0.2	0.2	0.0	0.0	0.0	1.0	1.3	2.4	1.3
30	0.1	0	0.0	0.0	0.0	0.2	1.1	2.5	1.2
40	0.3	0.2	0.0	0.3	0.2	0.9	2.2	2.4	1.7
50	0.5	0.3	0.0	1.0	0.8	1.1	4.0	4.9	4.9
60	4.2	1.3	0.0	7.3	4.9	14.5	12.3	5.2	3.4
70	5.6	1.5	2.2	11.1	6.2	16.4	14.6	5.1	12.0
80	9.2	8.3	4.9	12.7	9.4	16.1	16.9	10.9	11.2
90	11.2	11.1	5.8	13.5	13.5	18.5	19.0	13.5	12.4
100	12.4	14	7.4	15.0	14.4	19.8	20.7	17.1	17.1
110	16.0		9.2	14.8	15.7	20.2	19.1	20.4	16.2
120			10.1	15.0	16.7	20.9	18.6	23.3	18.2
130			8.0	16.6	18.9	21.9	21.5	24.2	17.9
140			11.0	17.3	19.4	22.1	25.4	27.1	22.4
150			14.2	19.7	19.9	21.5	27.0	28.6	24.2

DRP concentrations (mg m^{-3})

Spring

Date	**18/11/1974**	**16/10/1975**	**4/10/1977**	**10/10/1978**	**5/10/1987**	**17/10/1988**	**6/10/1989**
Depth (m)	???						
0	8.7	1.1	0.3	0.6	0.2	0.2	0.0
10	8.0	1.2	0.0	0.6	0.1	0.1	0.2
20	8.3	1.1	0.1	0.5	0.2	0.0	0.1
30	7.5	0.9	0.0	0.3	0.3	0.1	0.0
40	8.4	0.8	0.3	0.2	0.2	0.1	0.0
50	7.6	0.8	0.2	0.3	0.4	0.1	0.0
60	8.3	0.7	0.0	0.3	0.3	0.2	0.0
70	7.7	0.7	1.1	0.4	0.3	0.2	0.0
80	8.1	0.8	0.7	0.5	0.3	0.2	0.3
90	7.9	1.0	0.8	0.4	0.2	0.3	0.1
100	8.5	1.7	0.4	0.4	0.2	0.3	0.1
110	9.8	1.6	0.4	0.4	0.4	0.5	0.1
120			0.5	0.4	0.4	0.4	0.0
130			0.4	0.3	0.4	0.4	0.2
140			0.6	0.3	0.4	0.5	0.3
150			0.5	0.4	0.3	0.5	0.2

Autumn

Date	**14/04/1975**	**12/01/1976**	**14/03/1978**	**10/04/1979**	**10/03/1980**	**7/07/1987**	**5/04/1988**	**4/04/1989**	**10/04/1990**
Depth (m)									
0	0.8	1.4	0.2	0.1	0.7	1.9	0.1	0.0	0.2
10	0.5	1.4	0.2	0.1	0.4	2.2	0.1	0.0	0.0
20	0.5	7.0	0.2	0.1	0.3	0.9	0.2	0.0	0.1
30	0.5	2.5	0.2	0.1	0.2	1.0	0.2	0.0	0.2
40	0.5	0.2	0.2	0.4	0.5	0.9	0.6	0.2	0.5
50	0.5	0.9	0.7	1.0	0.7	0.7	1.1	0.5	1.1
60	1.0	0.1	0.7	1.6	1.0	3.4	2.0	0.6	0.9
70	1.0	0.8	1.0	2.0	1.1	3.7	2.2	0.9	1.9
80	1.7	1.2	1.5	2.2	1.6	3.6	2.7	1.1	1.7
90	2.0	2.0	1.8	2.4	2.2	4.1	2.9	1.3	1.8
100	2.2	3.3	1.9	2.7	2.4	4.6	3.1	1.9	2.6
110	2.9		2.4	2.8	2.6	4.5	2.9	2.7	2.1
120			2.7	2.9	2.7	4.7	3.0	3.4	2.5
130			2.1	3.0	3.7	5.1	3.4	3.8	2.4
140			2.8	3.6	3.6	5.3	4.4	4.5	3.5
150			0.9	3.8	3.8	5.0	4.6	4.8	4.0
Elapsed period (days)									
	147	88	161	182	165	270*	183	169	186

??? = possible analytical problem (e.g., Si interference)
* = average period of 165 days plus 3 months