Water Quality Trends In Kalamalka, Wood, And Ellison Lakes 1969 To 1999

Ministry Of Water Land And Air Protection
Southern Interior Region

Technical Report

E. V. Jensen And J. E. Bryan

December 2001

Water Quality Trends In Kalamalka, Wood, And Ellison Lakes 1969-1999.

E. V. Jensen And J. E. Bryan

ABSTRACT

This report describes nearly three decades of sampling by the Ministry of Water, Land and Air Protection, on Kalamalka, Wood, and Ellison Lakes, the first three main-valley lakes of the Okanagan watershed. The report was written to facilitate planning in the upper Okanagan Basin and inform the public regarding water quality trends. Although receiving similar inflow of water, each lake has unique physical and chemical attributes resulting in markedly different levels of macronutrients, phytoplankton, and zooplankton. There are trends in some of these characteristics which may be related to changes in natural and human manipulated water residence times, and changes in non-point source (NPS) loading of nutrients. Kalamalka Lake is oligotrophic but tends towards mesotrophy with relatively low nutrient levels and moderately good water clarity. Increasing phytoplankton abundance in the north end of Kalamalka Lake probably indicates the effects of NPS nutrient loading from the Coldstream watershed. Limited seasonal data suggests nitrate limitation of phytoplankton may occur as early as June in some years.

Wood Lake water quality has improved over the period of study due to the transfer of Okanagan Lake water into Ellison Lake immediately upstream of Wood Lake. This higher quality water has reduced nutrient levels in Wood Lake, and increased water clarity. Despite this improvement, Wood Lake continues to be meso-eutrophic. The transfer of water from Okanagan Lake has increased the flow of high nutrient water from Wood Lake into Kalamalka Lake, and nutrient levels in Kalamalka Lake have risen during this time period. Ellison Lake continues to be eutrophic with high primary production and poor water clarity. Other parameters such as nitrate nitrogen and chloride are steadily increasing in Wood and Kalamalka Lakes, indicating that human activities in the watershed are changing the water quality of these lakes.

Acknowledgements

Many support staff, particularly different students temporarily working for the Ministry of Water, Land and Air Protection, assisted with sampling of these lakes to obtain the data necessary for this report; they will not be named as complete lists were not kept but we are grateful to them all. Thanks to Nellie Peppin, electronic retrieval of historic data sets, was possible. Jodi Unger created historic data tables for inclusion in this report, and Bev Russell formatted the final version of the document. We thank the following people for reviewing and commenting on the manuscript: Don Holmes, Geri Huggins and Rick Nordin.

INTRODUCTION

This report presents water quality information for Kalamalka, Wood, and Ellison Lakes, collected by the BC Ministry of Water, Land and Air Protection, Pollution Prevention Program, or its equivalent (Environmental Protection, Waste Management, Pollution Control Branch) from approximately 1969 to 1999. The data are useful to document trends in water quality and to assess the possible impacts of waste discharges on ground water flowing into these lake systems. The lake quality data can also provide evidence about the effect of non-point source (NPS) contaminants on the lake system.

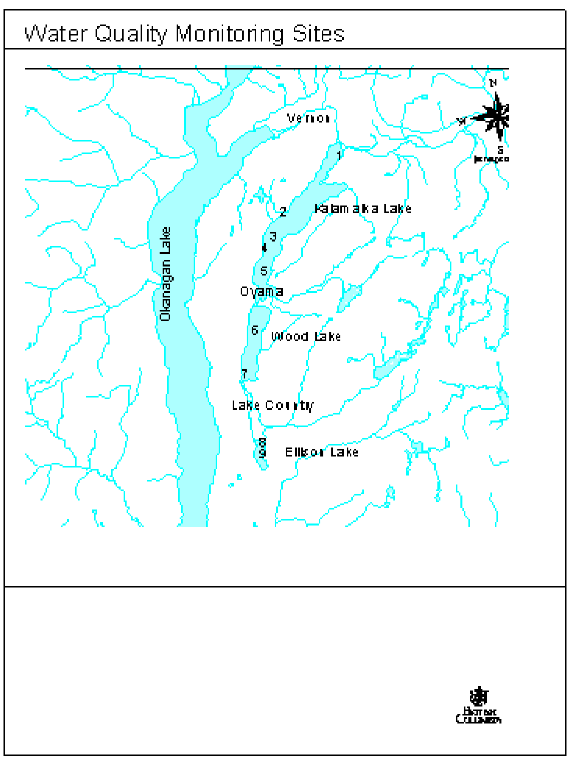
These lakes, located in the north Okanagan Valley, are the first three in the chain of valley bottom lakes; the other lakes downstream are: Okanagan, Skaha, Vaseux, and Osoyoos Lakes (Figure 1). All of the lakes receive water from headwater lakes, most of which are located at higher elevations above the Okanagan Valley; data for these headwater lakes have been compiled during the Okanagan Basin Study (Koshinsky and Andres, 1972). Previous studies have reported Kalamalka Lake as oligotrophic, or relatively low in productivity, and Wood and Ellison Lakes as eutrophic, or relatively high in productivity (Anon. 1974a, Anon. 1985, Bryan 1990). As the lakes are intimately linked hydrologically, the physical differences between the lakes (Table 1) largely account for the different water quality of each lake. None of the lakes receive any point source discharge of nutrients, thus each lake is largely influenced by anthropogenic or human related non-point source nutrient inputs from septic tanks, agriculture, urbanization, and forestry. In addition, internal processes affecting nutrient cycles differ among the lakes as described below with physical attributes of the lakes.

Algal blooms on Wood Lake in 1971 prompted the first detailed limnological study of these three lakes and established nutrient loading estimates (Anon. 1974a). A subsequent review and recalculation in 1980 concluded that 60% of the non-point source phosphorus load to Kalamalka Lake was from animal wastes, 30% from septic tanks and 9% from logging (Anon. 1985). For Wood Lake, 42% of the phosphorus load was from septic tanks, animal wastes and logging contributed 27% and 24% respectively; however as with any model, these were estimates prepared with the best assumptions and data available at the time.

Although water flowing from Ellison to Wood and then to Kalamalka Lake is not impeded, a dam at the outlet of Kalamalka Lake affects lake levels and controls the flows from Kalamalka Lake into Okanagan Lake via Vernon Creek. There have been a number of changes to water movement in the system worthy of mention. In 1908, a canal was excavated between Wood and Kalamalka Lakes to allow navigation between the two. As a result, water levels dropped 0.6m in Wood Lake and rose 0.25m in Kalamalka Lake (Anon 1974a). Water diversions from upstream of Ellison and Wood Lake between 1930 and 1970 are thought to have increased the water residence or renewal time of Wood Lake from 14 to 30 years during that period. In 1971, the Hiram Walker Distillery began pumping water from Okanagan Lake to cool its still. The warm water resulting from this process was discharged into Vernon Creek at the north end of Ellison Lake. This cooling water contained much less phosphorus and nitrogen than the ambient water of Ellison or Wood Lakes. It was discharged to Vernon Creek just upstream of Ellison Lake, at an average rate of 13,600 m^3/d from 1972 to 1990. After the distillery stopped operating in 1992, the cooling flows were significantly reduced to maintenance flows of less than 380 m3/d, and ceased entirely in June 1995.

The low-nutrient water diluted the high-nutrient levels in Ellison and Wood Lakes, however the additional flow pushed higher-nutrient Wood Lake water into low-nutrient Kalamalka Lake. The Kalamalka-Wood Lake Basin Study included predictions about eutrophication of Kalamalka Lake due to the extra load of nutrients from this source (Anon. 1974a). Subsequent reviews had suggested that nitrate in Hiram Walker wastewater discharged to ground might enhance spring phosphorus uptake by phytoplankton thus avoiding blue-green algal blooms in mid-summer (Jasper and Gray 1982). Other studies suggest the reduction in water residence time for Wood Lake, perhaps in concert with other hydrologic (Walker 1993) and climatic trends, has resulted in an improvement in Wood Lake water quality (Nordin 1994).

Figure 1. The north Okanagan and the first three main-valley lakes, Kalamalka, Wood and Ellison, in the Okanagan basin drainage.



Some of the physical features of these lakes are shown in Table 1. Kalamalka Lake is considerably larger in volume and surface area, and deeper than Wood or Ellison lakes. Ellison Lake is so shallow that it does not develop thermal stratification in the summer. Consequently its water circulation and nutrient transfer between sediment and water occurs daily as is typical of ponds. Wood Lake is sufficiently deep to develop stable thermal stratification but still shallow relative to its surface area so that the volume of water in its hypolimnion is small and easily depleted of oxygen. Consequently, there have been years when the bottom waters were anoxic in late summer and fall allowing phosphorus to move from the bottom sediment back into the water column. Kalamalka Lake, in contrast, has a large volume of hypolimnetic water with very little oxygen depletion.

As mentioned above, the theoretical flushing times for the lakes were altered by the Hiram Walker Distillery diversion from 1971 through to approximately 1996 and has now returned to pre-diversion values. During that period, approximately $4.9x10^6$ M^3 per annum was diverted from Okanagan Lake into the Kalamalka Wood lake basin by Hiram Walker in Winfield. This transfer approximately restored flows lost upstream of Ellison Lake due to irrigation diversions (Anon. 1974a).

Table 1. Morphological Characteristics of Kalamalka, Wood and Ellison Lakes

Characteristic	**unit**	**Ellison**	**Wood**	**Kalamalka**
Surface Area[1]	ha	210	930	2590
Volume[1]	DAM3	5400	199,500	1,520,000
Mean Depth[1]	m	2.5	22	59
Maximum Depth[1]	m	5	34	142
Elevation	m	431	391	391
Perimeter	km	4.65	13.5[2]	35.01
Watershed Area[7]	km2	138	151	572
Theoretical Flushing Time[5]	yr	0.3[1]to 2.1[4]	14[1] to 30[3]	37[1] to 65[3]
Kalamalka Wood Study[6]	yr	1.4 - 2.1	14 - 18	42 - 48

1. Anon. 1985. Phosphorus in the Okanagan Main Valley Lake: Sources, Water Quality Objectives and Control Possibilities.
2. Nordin, R. in The Canadian Book of Lakes (Allen *et.al.* 1994)
3. Okanagan Basin Study (Anon. 1974b)
4. Anon. 1974 Kalamalka-Wood Basin Water Resource Management Study
5 Lower number reflects reduced water residence time during Hiram Walker discharge of Okanagan Lake water into Ellison Lake.
6 Theoretical increase in water residence times forecast by reduction of Hiram Walker diversion flows of 510 m^3/hr
7 Water Survey of Canada 1991 records for Vernon Creek at outlets of Ellison and Kalamalka lakes and inlet of Vernon Creek to Wood Lake

METHODS

Nine sites in these lakes were monitored (Figure 1): Ellison Lake was sampled at two sites, one near the centre of the basin, and the other approximately 300 m from the north end and west of Vernon Creek's mouth at the lake. Wood Lake was sampled approximately 500 m from the south end just west of the point where Vernon Creek enters the south end of the lake. Wood Lake was also sampled near its deepest point close to the centre of the basin. There were two slightly different sites-one of which was closer to the south end which was sampled between 1973 to 1985 (site 0500245) and the other sampled between 1983 through 2000 (site 0500848). This latter site is about 1km farther north and about 3m deeper than the other. Kalamalka Lake was sampled at five locations: at the deepest point; at 3 km north of the south end; at 600m south of north end and west of Coldstream Creek's mouth; at the mouth of Bailey Creek or Downstream Effluent Spray Irrigation; and approximately 2 km to the south as Upstream Effluent Spray Irrigation.

Kalamalka and Wood Lakes were usually sampled within days of each other during each spring and autumn. The preferable time of spring sampling was as soon after ice cover melt as practical. For Kalamalka and Wood Lakes this was usually middle of February to late March, but due to its smaller size and shallower depth, Ellison often developed a thicker ice cover and consequently was not open and workable until mid March or early April. In autumn, all three lakes were generally sampled in August until the early 1980s after which Kalamalka and Wood Lakes were usually sampled in September whereas Ellison continued to be sampled in August. The dates of sampling for each lake are listed in Appendix Table 10. Monthly sampling of Kalamalka and Wood lakes occurred in 1987 and 1988 (unreported). Kalamalka Lake was sampled monthly in 1996-1998 (McEachern, in Ashley et al. 1999).

The water chemistry samples were collected using a Van Dorn water bottle. At each location sampled, water was collected and composited from different depths in the lake. Usually water was collected at three shallow depths (1, 5, and 10 m). As Ellison Lake is only 4 m deep, there was only a composite sample of shallow water (1, 2, and 3 m). The same sampling depths were used at the two shallow sites in Kalamalka Lake (Upstream and Downstream of Effluent Spray Irrigation). Three volumes of water were also collected from hypolimnion depths and pooled to form one composite sample. The three depths chosen varied depending upon the depth of the particular site, but the top depth was always 20 m, the bottom depth was the less of 45 m or 2 m above lake bottom, and the middle depth half way in between the two. Thus, there was a composite sample from shallow depths and another composite sample from deep depths both submitted for laboratory analysis on each date the lake was sampled. Over the years, samples have been analyzed by a variety of labs following standard analytical methods. During the Okanagan Basin Study (1969-72) analyses were performed by a variety of federal laboratories (Anon. 1974). The BC Environmental Laboratory analyzed water and plankton samples from 1973 to 1989. Zenon Laboratories performed the analyses from 1989 to 1997. The Pacific Environmental Science Centre has provided water chemistry analytical services since 1997. All provincial data (1973-99) is currently archived on the provincial Environment Management System (EMS).

In the figures where a single value is reported, it represents only the shallow composite sample. All the figures comparing water quality of different lakes, use data for the epilimnion composite at the deep or main site on each lake. For Ellison Lake, the Central site was chosen as most representative of the lake; and for Wood and Kalamalka Lakes the Deep Basin sites were chosen. Data for each of the nine sites individually is presented in Appendix Tables 1 to 9 and Appendix Figures 1 to 16. For sites with a hypolimnion, data are presented separately for epilimnion and hypolimnion depths.

Profiles of temperature and oxygen were measured in the fall at each site using a YSI or Hydrolab meter. Temperature was confirmed independently with a hand thermometer and oxygen with the Hach variation of the Winkler method.

Phytoplankton samples were collected with a Van Dorn at the shallow depths sampled. Phytoplankton was always measured as chlorophyll *a* on the composited surface water samples. Analyses for chlorophyll *a* and all other chemical tests were done by B. C. Ministry of Environment Laboratory (1971-1988), Zenon (1989-April 1996), and Environment Canada (1996 to 1999).

Zooplankton samples were collected by hauling a plankton net vertically from 45m to the surface. This net was 50cm in diameter and had mesh openings of 150 microns. Thus the area sampled was 0.1964m2 and the volume 8.64m3. The samples were preserved with formalin or alcohol and were periodically submitted for taxonomic analysis. Beginning in the 1980s, the samples were measured for the total settled volume of all zooplankton collected by pouring each sample into an Imhoff Cone and measuring the volume of zooplankton which had settled to the bottom of the cone overnight. Due to the shallow depth of Ellison Lake and the sites Upstream and Downstream of Effluent Spray Irrigation on Kalamalka, no zooplankton samples were collected.

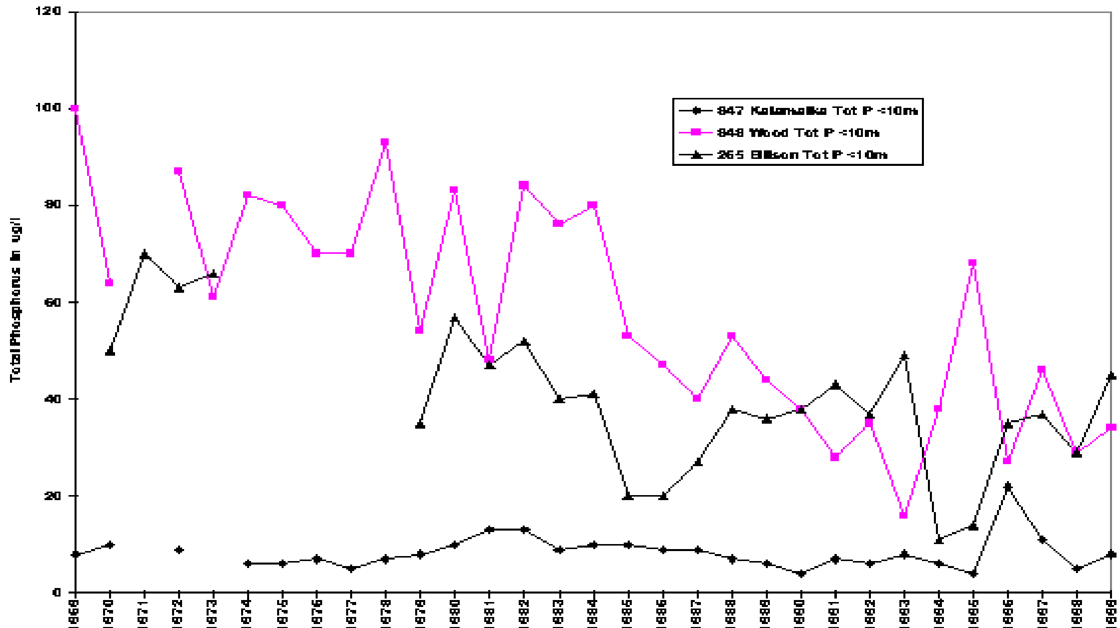
In order to enhance their legibility, the figures with several sites on them have lines connecting the symbols marking data points for particular years if the years were consecutive. In years when the symbols are not connected by lines, the observations were not consecutive, *i.e.* one or more years have missing data.

RESULTS AND DISCUSSION

Nutrients and plankton

Spring TP (total phosphorus) values are shown in Figure 2 for the main sites in each lake for all years of record. Although spring TP in Ellison appears to have dropped between the early 1970's and early 1980's, the data for the early 1970's is discontinuous, so overall there has been no consistent trend in TP in Ellison Lake over the past two decades. Wood Lake showed a decreasing trend in spring TP levels from 1969 until 1993; after 1993, spring TP levels in Wood Lake have trended slightly upwards. Kalamalka Lake spring TP levels showed no trend over the period of study. Higher spring TP levels in Kalamalka Lake in 1981, 1982 and 1996 may be related to years of greater annual discharge from Coldstream Creek or higher spring run-off. Trend plots of spring TP for each site and depth are presented separately in Appendix Figures 1-8.

Figure 2. Spring total phosphorus in Kalamalka, Wood and Ellison Lakes

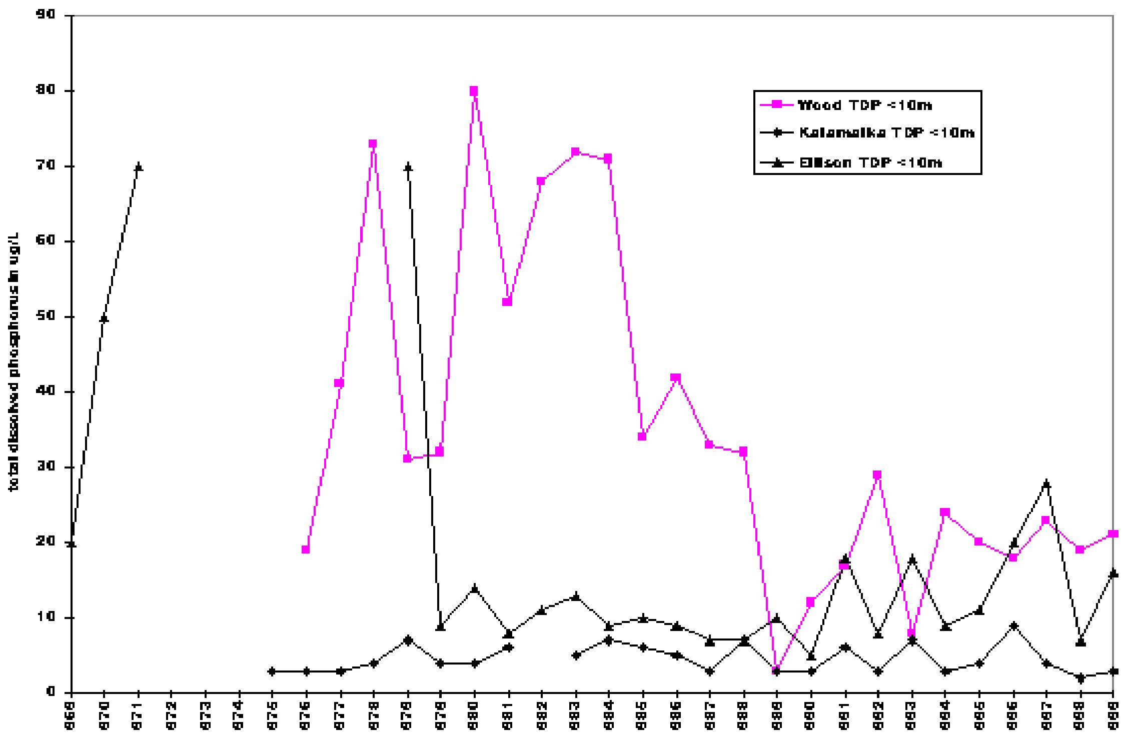


1969-1970 data added to Figure 2 from Stein and Coulthard (1971)
1972-1973 data added to Figure 2 from Kalamalka - Wood Lake Basin Study (1974).

As with spring TP, the most pronounced changes in TDP (total dissolved phosphorus) occurred in Wood Lake with a decreasing trend over a decade from the early 1980's through to the early 1990's (Figure 3). A similar, although less well defined decrease in TDP appears to have occurred in the Ellison Lake following the 1970's. No trend is apparent in TDP data at the main site for Kalamalka Lake.

As with spring phosphorus, the most pronounced changes in spring total nitrogen (TN) have occurred in Wood Lake, with a decreasing trend from the 1970s through to 1991 (Figure 4). A decreasing trend in spring TN in Ellison Lake also occurred from 1974 to 1991. A decrease in spring nitrate nitrogen in Wood Lake may have occurred between 1986 (0.2mg/L) and 1999 (0.082mg/L), however, there was considerable year to year variation for this parameter (Appendix Figure 17). There are recent indications that spring nitrogen, (Figure 4) and particularly nitrate nitrogen (Appendix Figure 18) has been increasing in Kalamalka Lake, from 0.045 mg/L in 1974 to 0.142 mg/L in 1999.

Figure 3. Annual spring total dissolved phosphorus in Kalamalka, Wood and Ellison Lakes



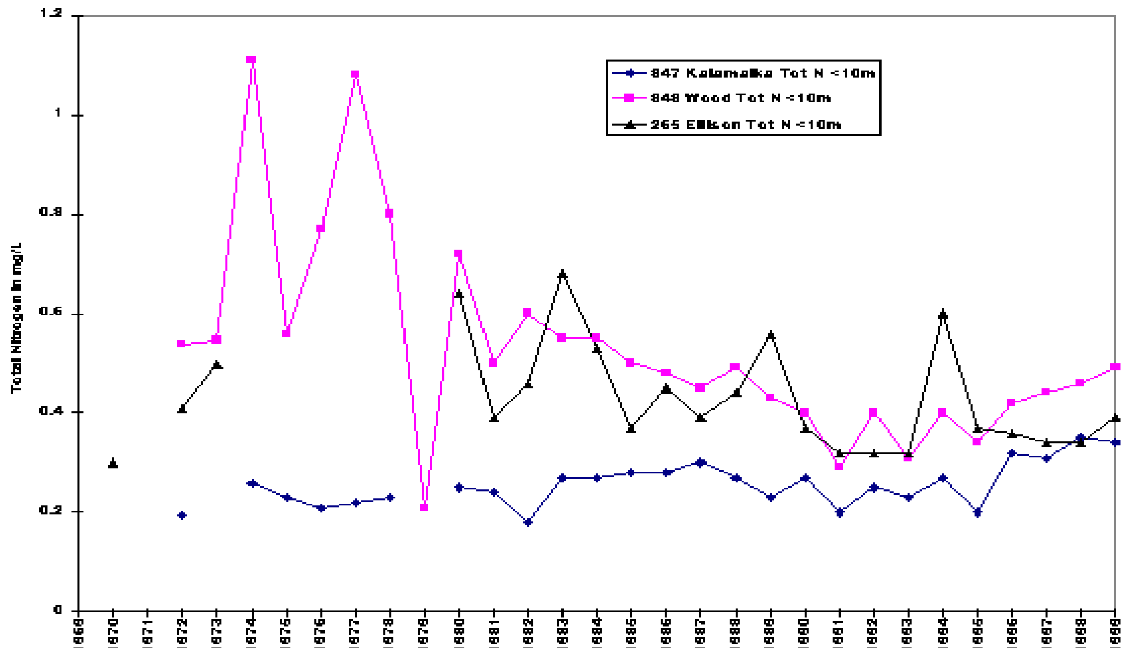
1969-1970 data added to Figure 2 from Stein and Coulthard (1971)

For Kalamalka Lake, spring TN:TP ratios were always greater than 14:1 and nitrate nitrogen to total dissolved phosphorus ratios are generally greater than 10:1. This indicates phosphorus as the nutrient limiting phytoplankton growth (Nordin 1984). Seasonal data gathered in 1997/98 however shows nitrate limitation of phytoplankton occurring by June of both years (Figure 5). Unpublished data for Kalamalka Lake in 1987/88 (MWLAP) suggests nitrate limitation may have been evident in the summers of those years, however, suitable detection limits for nitrate were not routinely used prior to 1997. For Ellison and Wood Lakes the ratio of spring TN:TP was often less than 14:1. Spring TN:TP ratios of less than 5 have been noted in the past for Wood Lake (Jasper and Gray, 1982).

Spring water clarity showed no trends of increase or decrease over the period of record for Ellison Lake (Figure 6) with Secchi Disk depths of approximately one metre. Wood Lake water clarity at the time of spring sampling has increased from approximately two metres in the mid 1970s to approximately six metres in 1980 after which time there has been no trend but considerable year to year variability. Spring water clarity in Kalamalka Lake shows no definitive trend, with good agreement among the three sites. Slightly reduced water clarity was often recorded downstream of the effluent spray irrigation in both spring and autumn. This may be associated with nutrient inputs, or re-suspension of sediments (Appendix Figures 8 & 16). Seasonal water clarity measurements as an indicator of changes in primary productivity in Kalamalka Lake are complicated by calcium carbonate precipitation during the summer months. Secchi disk measurements taken during spring plankton blooms but prior to carbonate precipitation may indicate a historic decrease in water clarity at least for the month of May (Appendix Figure 22).

Figure 4. Annual spring total nitrogen in Kalamalka, Wood, Ellison lakes.

1972-73 data from Kal Wood Study (1974); 1970 data from Stein and Coulthard (1971)



The levels of spring phytoplankton (free-floating algae measured as chlorophyll *a*) in the three lakes show considerable inter-annual variation but no overall trend for any lake over the period of record (Figure 7). Ellison Lake in almost all years yielded higher spring phytoplankton chlorophyll *a* levels than Wood Lake. Kalamalka Lake had the lowest spring chlorophyll *a* levels.

Figure 5. Total dissolved phosphorus, nitrate nitrogen, and phytoplankton chlorophyll A in Kalamalka Lake surface waters (1-10m), 1997 and 1998.

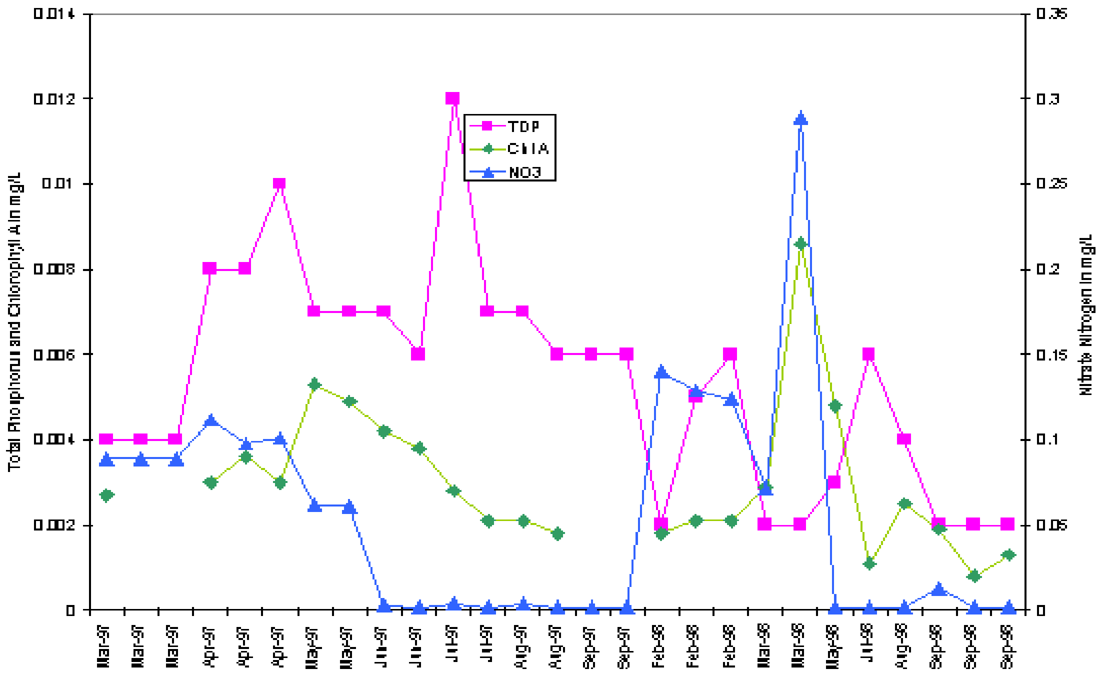


Figure 6. Spring water clarity in Kalamalka, Wood and Ellison lakes.

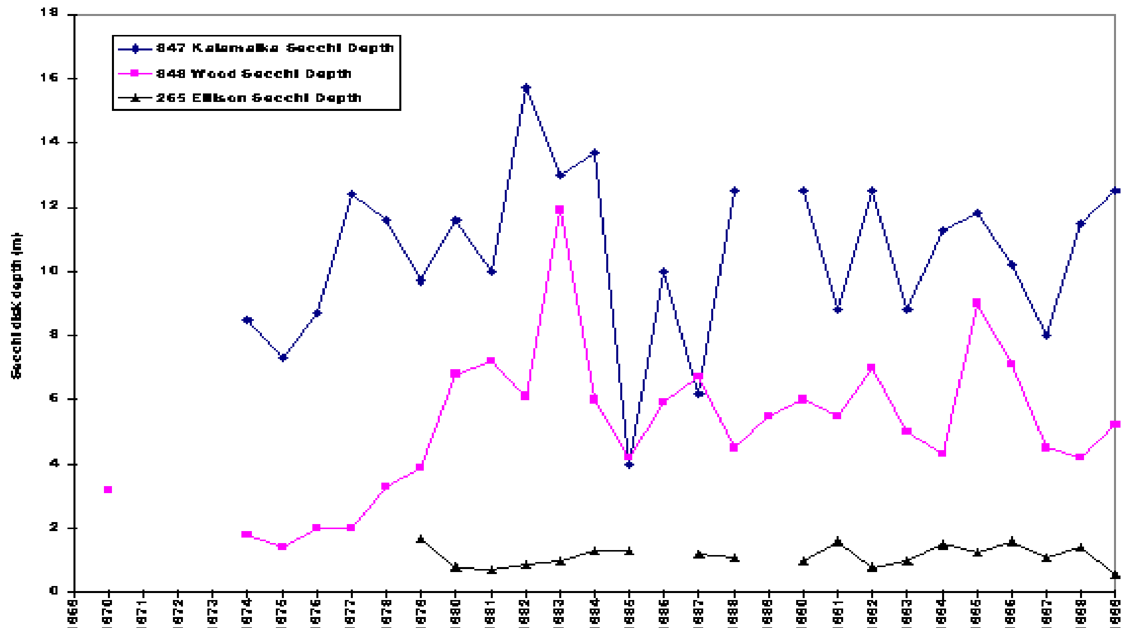


Figure 7. Spring planktonic algae in Kalamalka, Wood and Ellison Lakes.

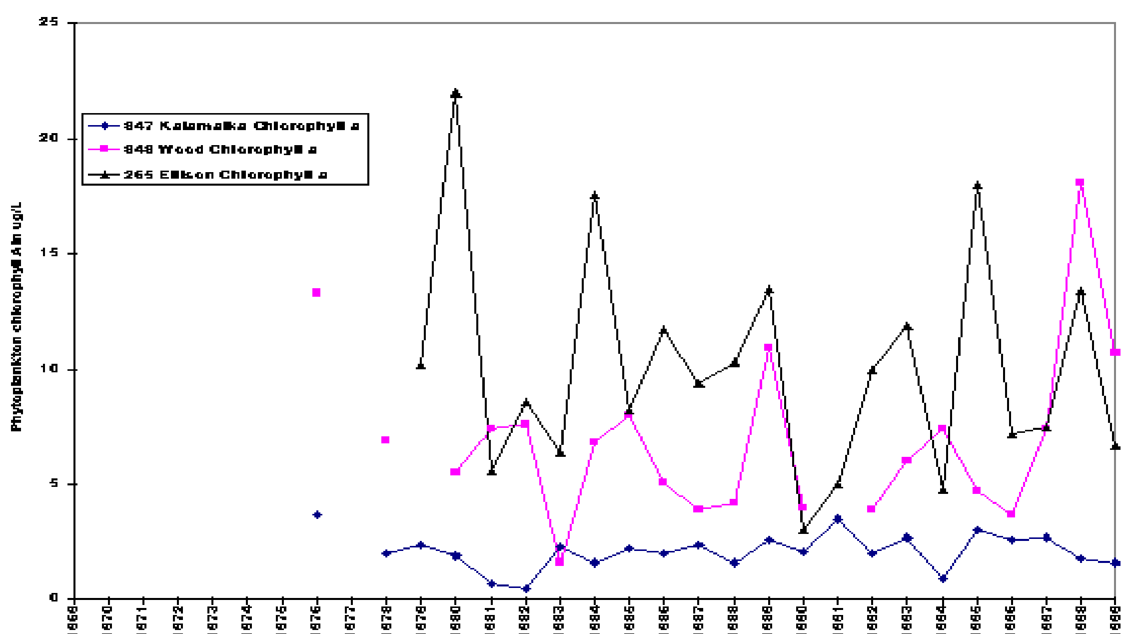


Figure 8. Spring planktonic algae in the Kalamalka Lake at Deep Basin (0500847), at South End (0500246) and south of Coldstream Creek (0500461).

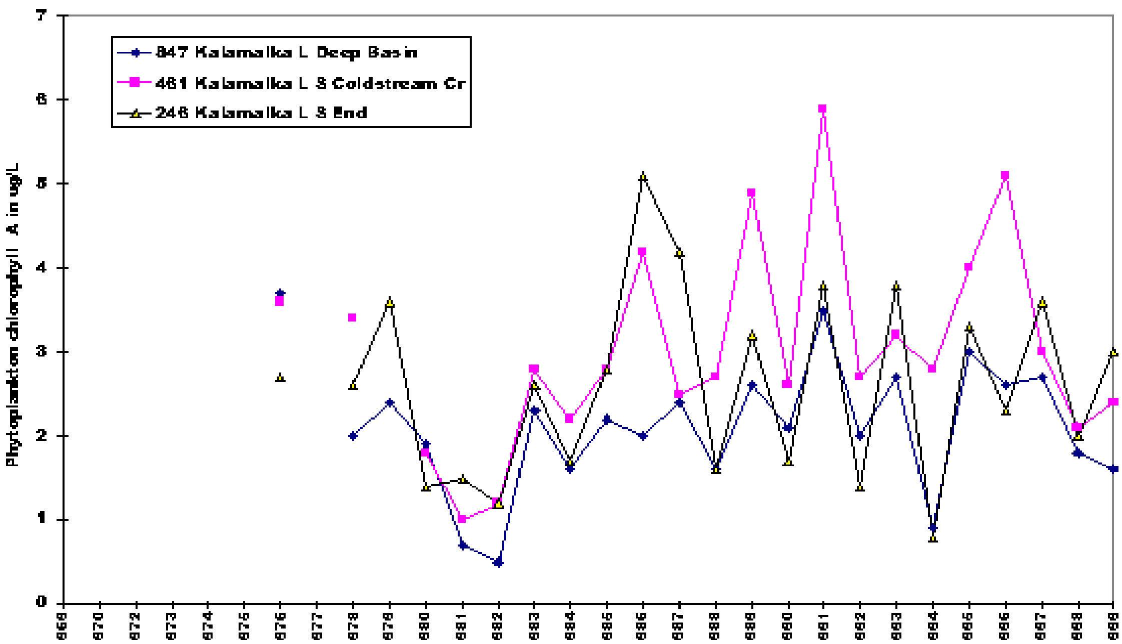


Figure 8 shows spring phytoplankton levels within Kalamalka Lake. Phytoplankton chlorophyll A was frequently highest at the north end site (South Coldstream Creek) and lowest at the South End or Deep Basin central site. Within Kalamalka Lake, year to year fluctuations in chlorophyll A at the different sites generally occurred in the same direction (Figure 8); where as, year to year fluctuations were asynchronous between lakes (Figure 7).

The autumn sampling in recent years has generally been carried out in early September, although Kalamalka and Wood were often sampled in August prior to 1981 and 1975 respectively. The autumn sampling of Ellison Lake was quite variable ranging from late August to mid-September. Figure 9 shows autumn total phosphorus in Kalamalka Lake was usually lower than in the spring but with no apparent trend. Unlike in the spring, autumn phosphorus levels in Wood Lake were distinctly lower than those in Ellison Lake and more like those of Kalamalka Lake. Wood Lake autumn TP, as with spring TP, shows a downward trend for the period of record. Autumn TP levels in Ellison Lake appear to have decreased from the late 1970s through to 1991 after which time there has been a gradual increase. Autumn TP values are generally lower than spring levels in Kalamalka and Wood Lake; the reverse is true of Ellison Lake, perhaps because of the re-suspension of particulate phosphorus in the shallow waters of Ellison Lake.

In Wood Lake, the autumn phosphorus values were significantly higher in the hypolimnion than in the epilimnion, particularly in the 1970s. The plots for individual sites in Appendix Figures 11 and 12 show this seasonal difference. Phosphorus increases in the hypolimnion because the upper and lower water layers do not mix during the summer and dead plankton continually settles into the hypolimnion where decomposition releases nutrients such as phosphorus. For Wood Lake where dissolved oxygen is deficient near the bottom, phosphorus may also be released out of the bottom sediment back into the water column.

Autumn total nitrogen (TN) in Kalamalka Lake shows no trend; where as levels in Ellison and Wood Lakes appear to have dropped between 1970s and the 1980s, after which no net change is apparent (Figure 10). A paucity of TN data diminishes the confidence in trend assessment prior to 1980.

Figure 9. Autumn total phosphorus in Kalamalka, Wood and Ellison Lakes.

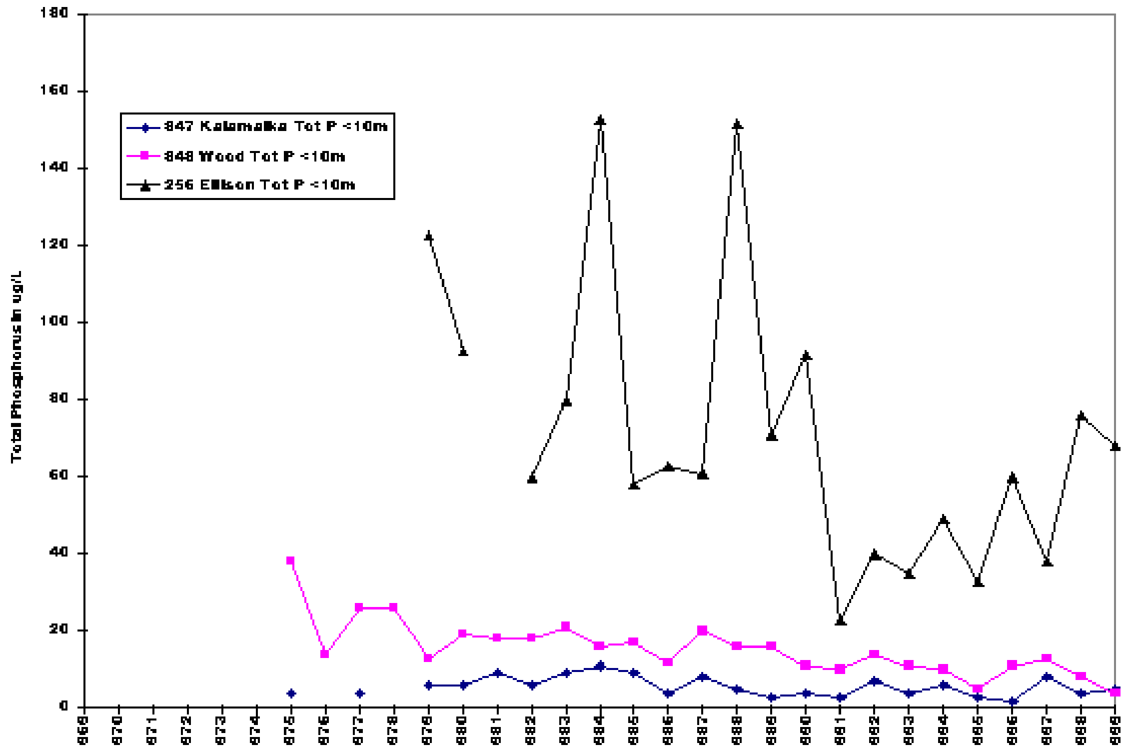
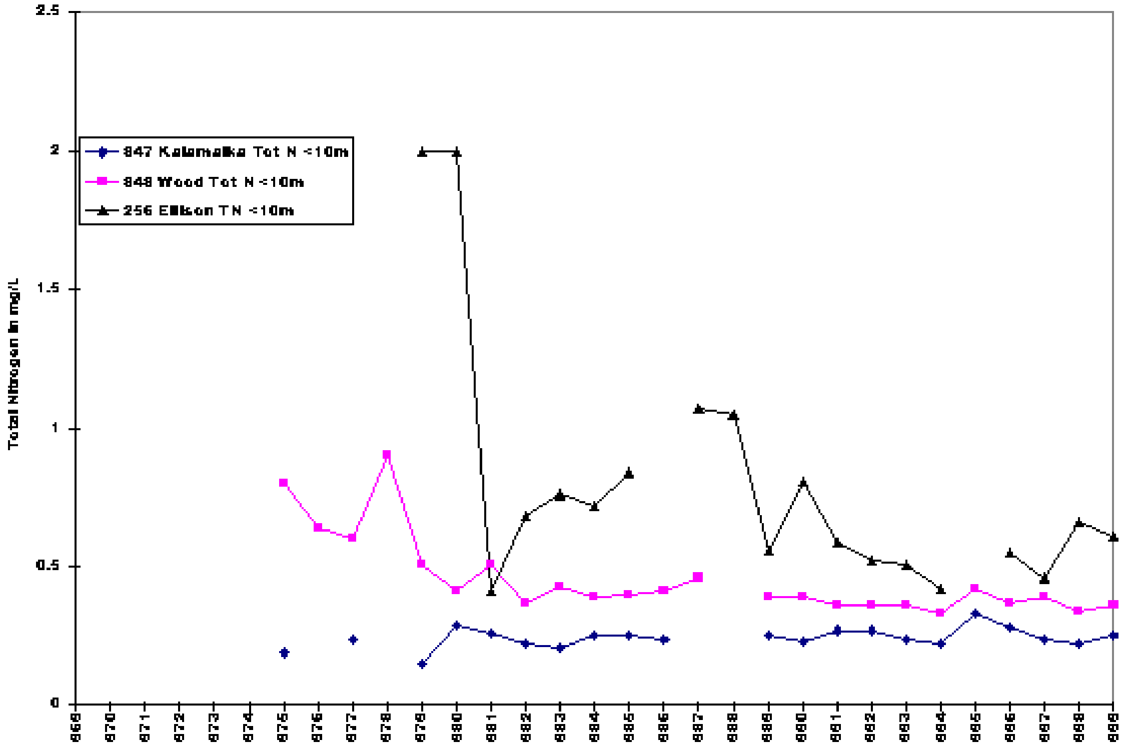


Figure 10. Autumn total nitrogen in Kalamalka, Wood, and Ellison Lakes.



Autumn water clarity in Kalamalka Lake showed considerable year to year variation but no trend (Figure 11). Kalamalka Lake waters in the autumn had less clarity than in the spring (Figures 6 and 11); much of this is due to the precipitation of calcium carbonate in the warmer surface waters during autumn. Wood Lake water clarity in autumn has been increasing over the period of study (Figure 11). Water clarity was often lower in the autumn at the south end of Wood Lake compared to the central site, although there was no difference in autumn phytoplankton chlorophyll *a* (Appendix Figures 11 and 12). Ellison Lake water clarity during autumn showed no trend, and as in the spring, had Secchi Disk values of approximately 1 m (Figure 11).

In autumn, the levels of phytoplankton chlorophyll *a* were lowest in Kalamalka Lake (Figure 12). For both Kalamalka and Wood Lakes, the autumn phytoplankton levels are generally lower than springtime values. Wood Lake decreased in autumn phytoplanktonbetween 1975 and 1978 with no trend after that time. Kalamalka Lake autumn phytoplankton had similar inter-annual variation at all three deep stations and there may be an increasing trend overall (Figure 13). Of note in Figure 13 is that autumn phytoplankton was frequently highest at the north end and lowest at the south end of the Kalamalka Lake. Morphometry of the lake and nutrient discharge from the Coldstream watershed at the north end of the lake may account for the higher plankton growth in those surface waters. Unlike the two larger lakes, the autumn phytoplankton levels in Ellison Lake were usually greater than values recorded the previous spring (Figures 7 and 12). Although there was considerable inter-annual variation in autumn phytoplankton, a decreasing trend is apparent in Ellison Lake (Figure 12).

Figure 11. Autumn water clarity in Kalamalka (0500847), Wood (0500848) and Ellison (0500256).

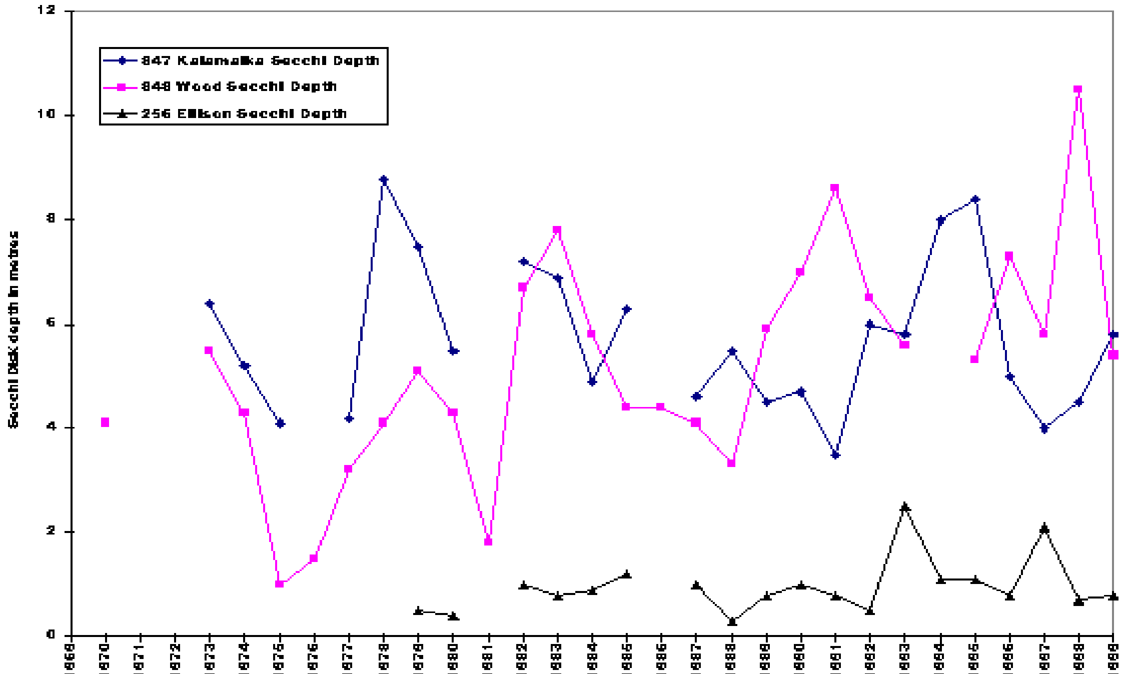


Figure 12. Autumn planktonic algae in the Kalamalka (0500847), Wood (0500848) and Ellison (0500256)

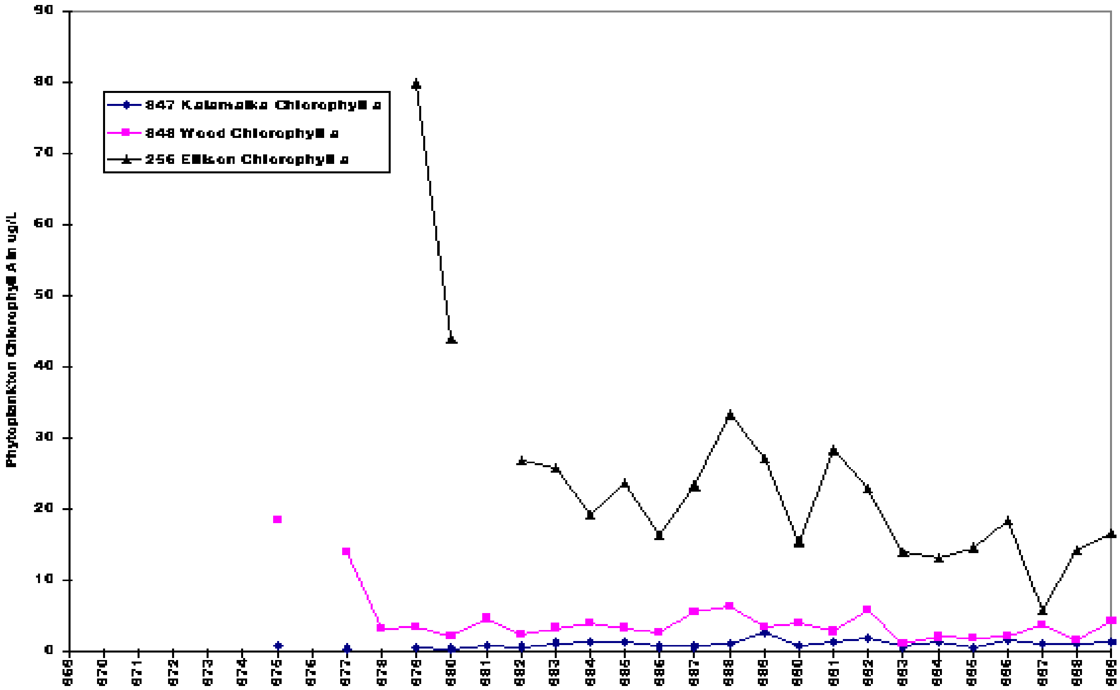


Figure 13. Autumn planktonic algae in the Kalamalka Lake at Deep Basin (0500847), at South End (0500246) and south of Coldstream Creek (0500461).

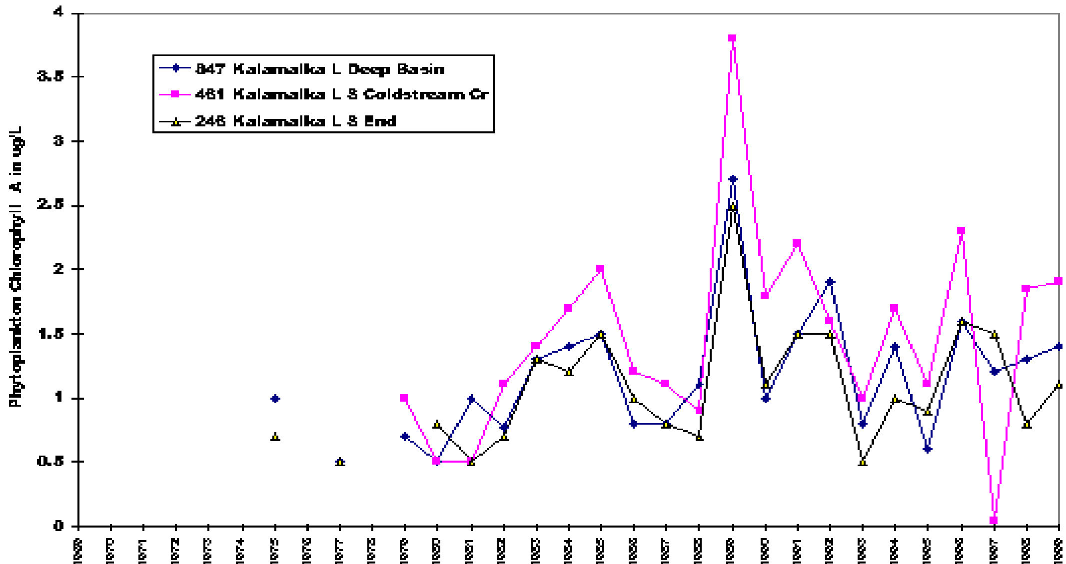


Figure 14. Autumn phytoplankton and water clarity in Kalamalka, Wood and Ellison Lakes 1975 to 1999.

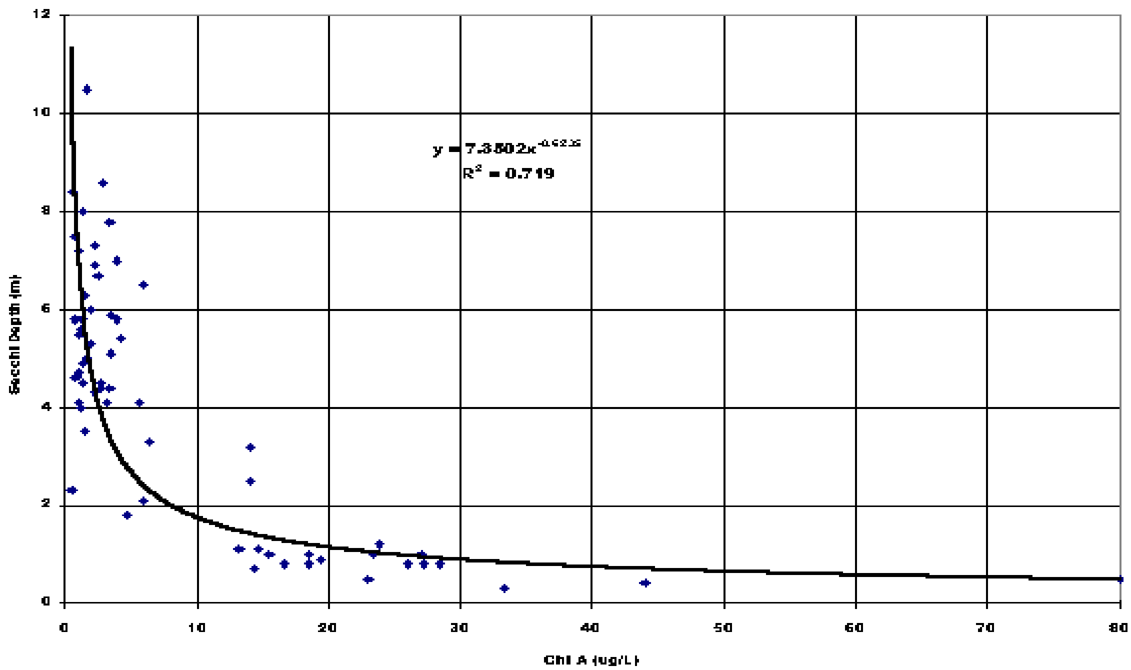


Figure 15. Spring phytoplankton and water clarity in Kalamalka, Wood and Ellison Lakes, 1976 to 1999.

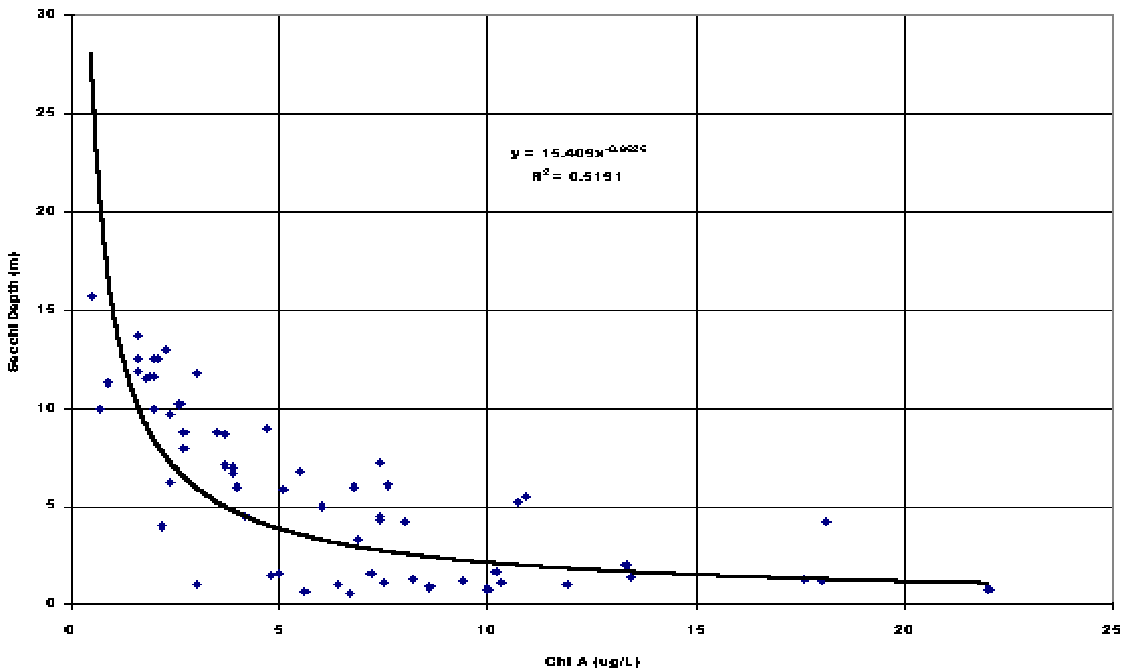
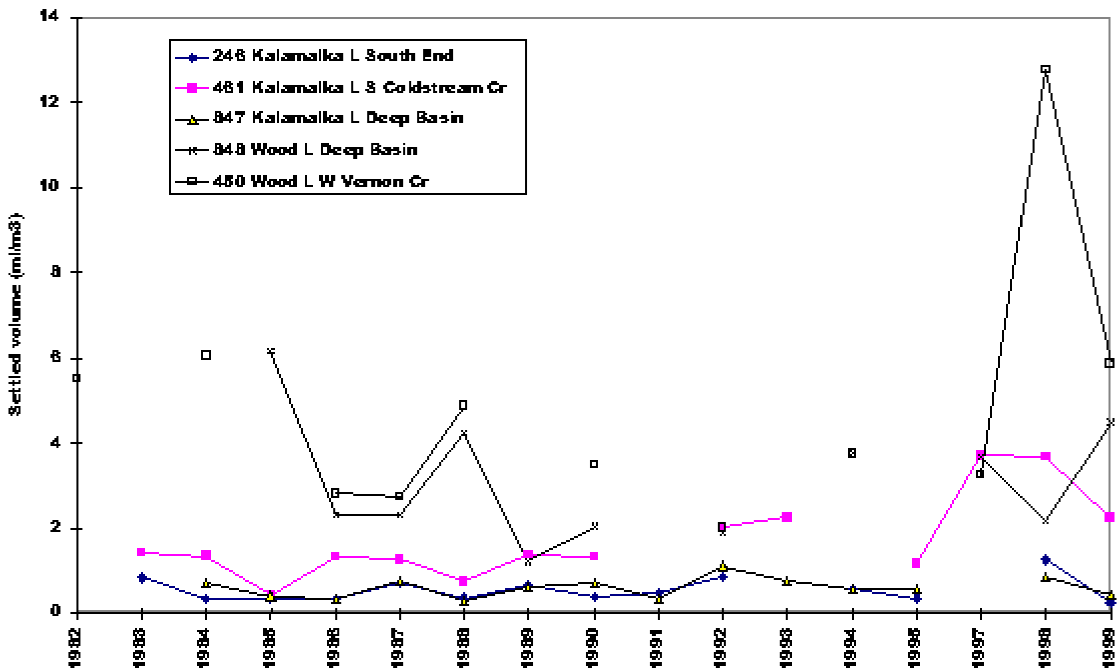
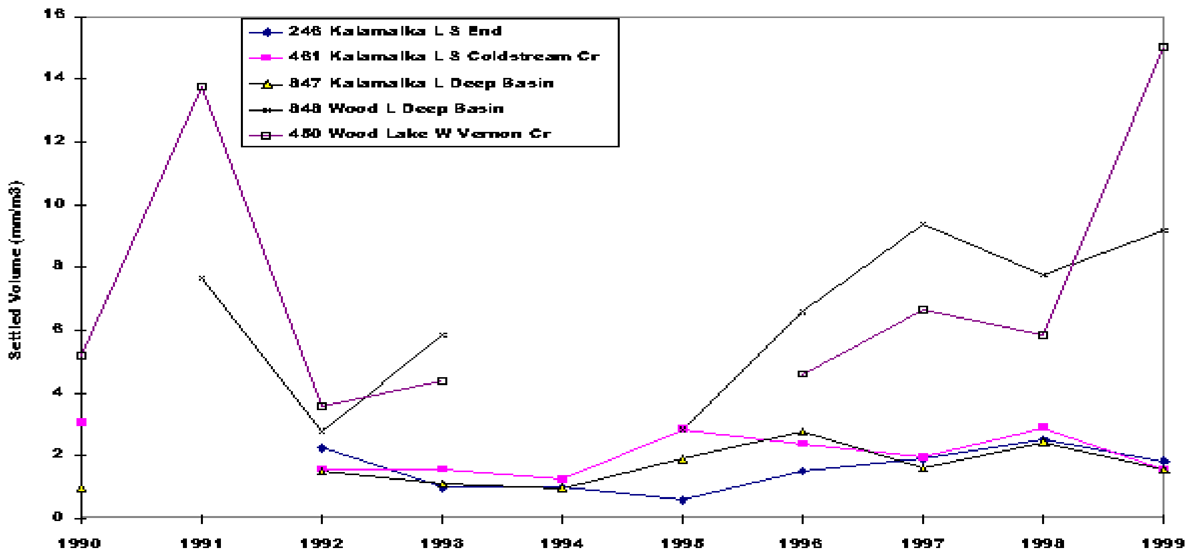


Figure 16. Annual zooplankton total standing crop in Kalamalka and Wood Lakes in the spring.



246 Kalamalka L South End
461 Kalamalka L S Coldstream Cr
847 Kalamalka L Deep Basin
848 Wood L Deep Basin
450 Wood L W Vernon Cr
Settled volume (ml/m3)
0
2
4
6
8
10
12
14
1982
1983
1984
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
1995
1997
1998
1999

Figure 17. Annual zooplankton total standing crop in the Kalamalka and Wood Lakes in the autumn.



When data for all three lakes were pooled, there was a stronger relationship between the amount of phytoplankton in the epilimnion and water clarity in the autumn (Figure 14), than the spring (Figure 15). Data for the individual lakes is presented in the Appendix Figures.

Figures 16 and 17 compare zooplankton abundance in Kalamalka and Wood Lakes. Zooplankton samples were not collected in Ellison Lake. There was usually more zooplankton in Wood Lake than Kalamalka Lake in the spring (Figure 16) and significantly more in Wood Lake in the autumn (Figure 17). Perhaps in response to the higher chlorophyll *a* in Kalamalka Lake South of Coldstream Creek, the spring zooplankton volumes at this site were higher than elsewhere in the lake, and in some years, similar to those of Wood Lake. There is an upward trend in spring zooplankton at the South of Coldstream Creek site on Kalamalka Lake.

The taxonomy of Ellison Lake phytoplankton has been infrequently studied. What information is available from these samples shows a pattern of cyanophyte or blue-green algal (*Aphanizomenon, Oscillatoria* or *Lyngbya*) dominance in the fall and diatom (*Melosira or Asterionella*) dominance in the spring (Figure 18). Ellison Lake phytoplankton cell counts in spring ranged from 146 to 3113 cells/ml and in the fall from 4378 to 71023 cells/ml. The prominence of diatoms in Ellison Lake during the early summer has been previously noted as well as other aspects of seasonal shifts in phytoplankton (Anon. 1974).

Between 1984 and 1998, phytoplankton in Wood Lake have been taxonomically identified more frequently in the spring than fall (Figure 19). Typical spring populations consist of *Fragilaria crotonensis, Cyclotella sp., and Stepahodiscus sp.*; in recent years a blue-green alga *Gomphospaeria palladium* has been common in spring, and *Anabaena flos-aquae, Aphanizomenon flos-*

aquae and *Gomphospaeria aponica* usually dominate in fall samples. *Lyngbya* sp. has been common only once during the study period, in the spring of 1992. Co-dominant in spring and fall was the crypotophyte *Chroomonas acuta*. Spring and fall phytoplankton densities ranged from 274 to 12,354 cells/ml and 765 to 1324 cells/ml respectively. Jasper *et. al*. (1982) reported Wood Lake phytoplankton biovolume was dominated in mid-summer by cyanophytes in 1980 with an *Anabaena flos-aquae* bloom in July replaced by *Lyngbya* in mid September. *Lyngbya* was noted as the dominant phytoplankter by volume in Wood Lake during the fall of 1979 (Deimert and Kelso 1980).

The taxonomy of Kalamalka Lake phytoplankton in 1996 through 1998 has been summarized by Jensen, in Ashley *et.al.* (1999). Spring and fall phytoplankton taxonomy cell counts (1984-1998) show cyanophyte *Lyngbya sp*. was usually dominant (Figure 20). Other cyanophytes such as *Anabaena sp., Anacystis elakista, and Oscillatoria sp.* were at times co-dominant. The cryptophyte *Chroomonas acuta* and chrysophyte *Dinobryon sp.* were common phytoplankters. Although Kalamalka Lake is considered oligotrophic or nutrient poor, diatoms such as *Synedra*, *Fragilaria* or *Cyclotell*a sp. are less often dominant in spring or autumn than was the case in mesotrophic Wood Lake. Diemert and Kelso (1980) also noted *Lyngbya sp.* dominance in spring and autumn in Kalamalka Lake. Total cell counts for Kalamalka Lake from 1996 through 1998 ranged from 290 to 11944 cells/ml. The classic succession pattern of spring dominance of diatoms with cyanophyte dominance in the summer and some resurgence of diatoms in the autumn, was reported for Kalamalka Lake in 1972 and 1973 (Anon. 1974). Stein and Coulthard (1971) reported the co-dominance of *Anabaena flos-aquae*, and *Lyngbya limnetica* with diatoms *Asterionella formosa* and *Fragilaria crotonensis* in June of 1969 and *Melosira italica* dominance in April of 1970.

It has been argued that algal biovolume more accurately represents the relative composition of phytoplankton populations (Jasper 1982). Phytoplankton biovolume charts for Ellison, Wood and Kalamalka lake are presented in Appendix Figures 20-22 using the biovolume data presented by Jensen, in Ashley *et.al.* (1999). Infrequent algal counts for Ellison and Wood lakes show a greater contribution of diatoms to the phytoplankton than cell counts. More frequent analysis of Kalamalka Lake algal assemblages suggests complex species dynamics with significant contributions from diatoms, cryptophytes and blue greens.

Zooplankton samples from Wood Lake have been occasionally submitted for taxonomic identification and counts. The zooplankton of Wood Lake has been dominated by copepods, such as cyclopoids *Diaptomus ashlandi, and Diacyclops bicuspidatus thomasi*, and by calanoids such as *Skistodiaptomus oregonensis*. Cladocerans such as *Daphnia* normally contributed less than 10% of the zooplankton count. Rotifers such as *Kellicottia longispina*, and occasionally *Keratella cochlearis* usually contributed less than 5 % of the sample count. Zooplankton densities ranged from approximately <1 to over 57 per litre in Wood Lake (Figure 20). The taxonomy of Kalamalka Lake zooplankton has been recently summarised by McEachern in Ashley *et al*. (1999); densities of *Daphnia* in 1996 and 1997 were similar to those in 1979 and 1980; zooplankton average annual densities were <3/L in 1996-98.

Figure 18. Phytoplankton cell count composition in Ellison Lake.

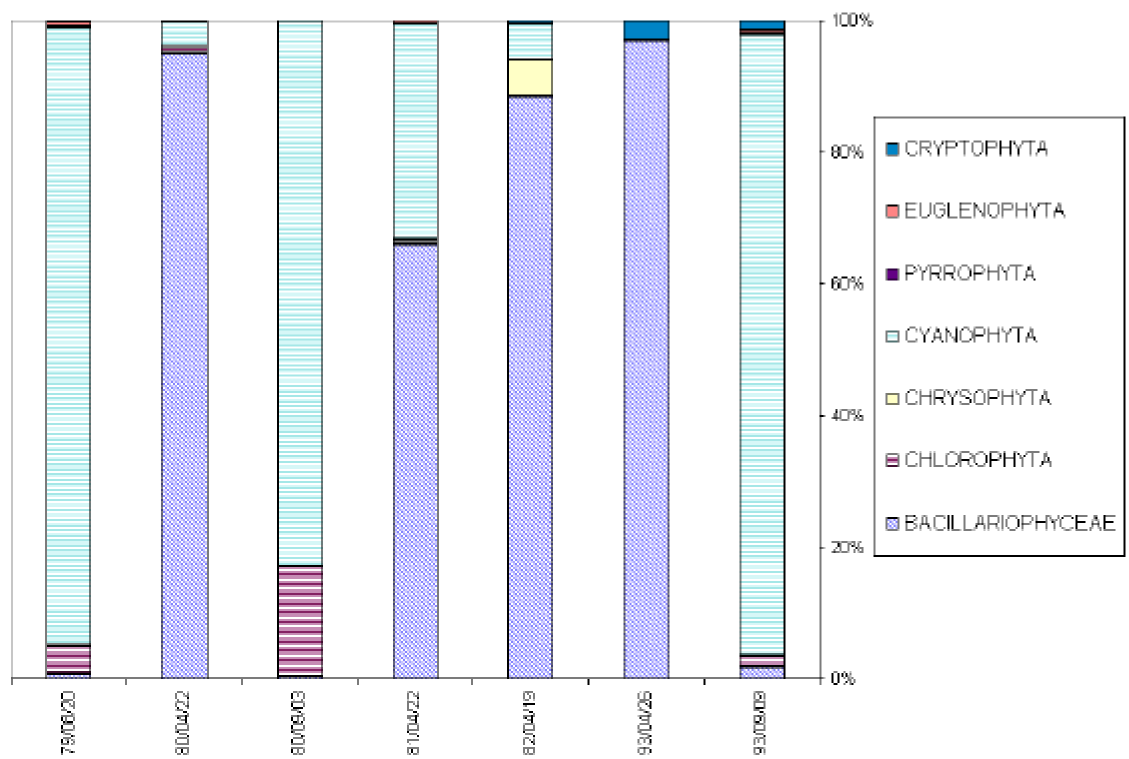


Figure 19. Phytoplankton cell count composition in Wood Lake

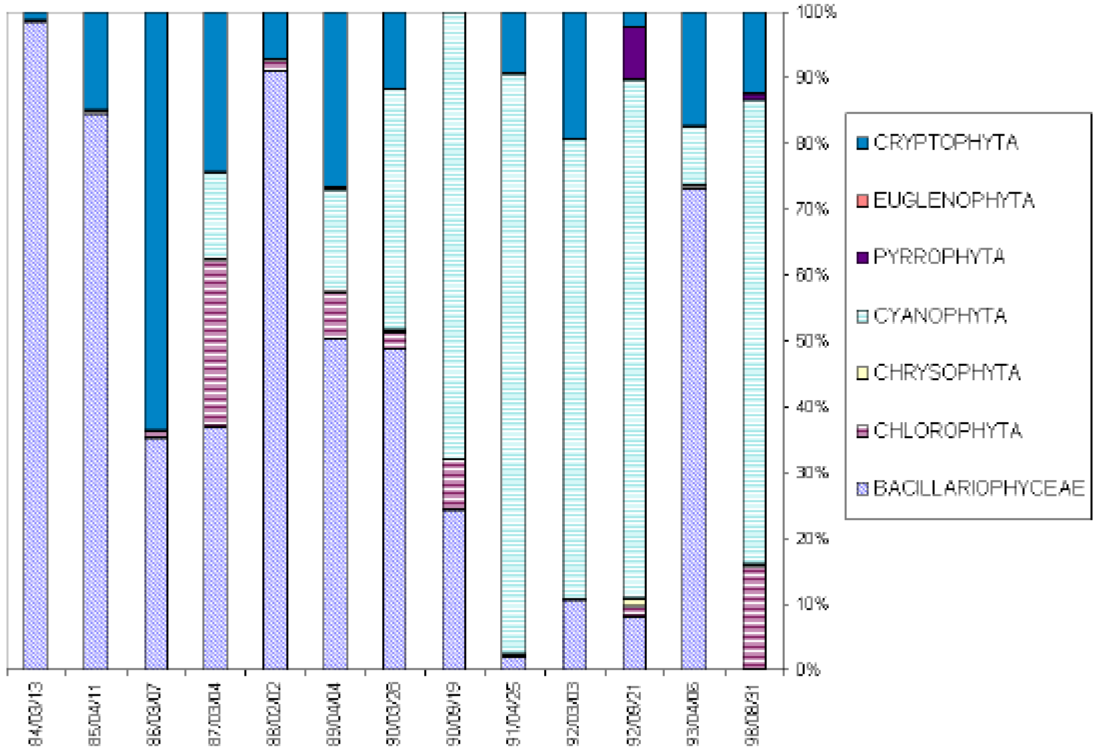


Figure 20. Phytoplankton cell count composition in Kalamalka Lake

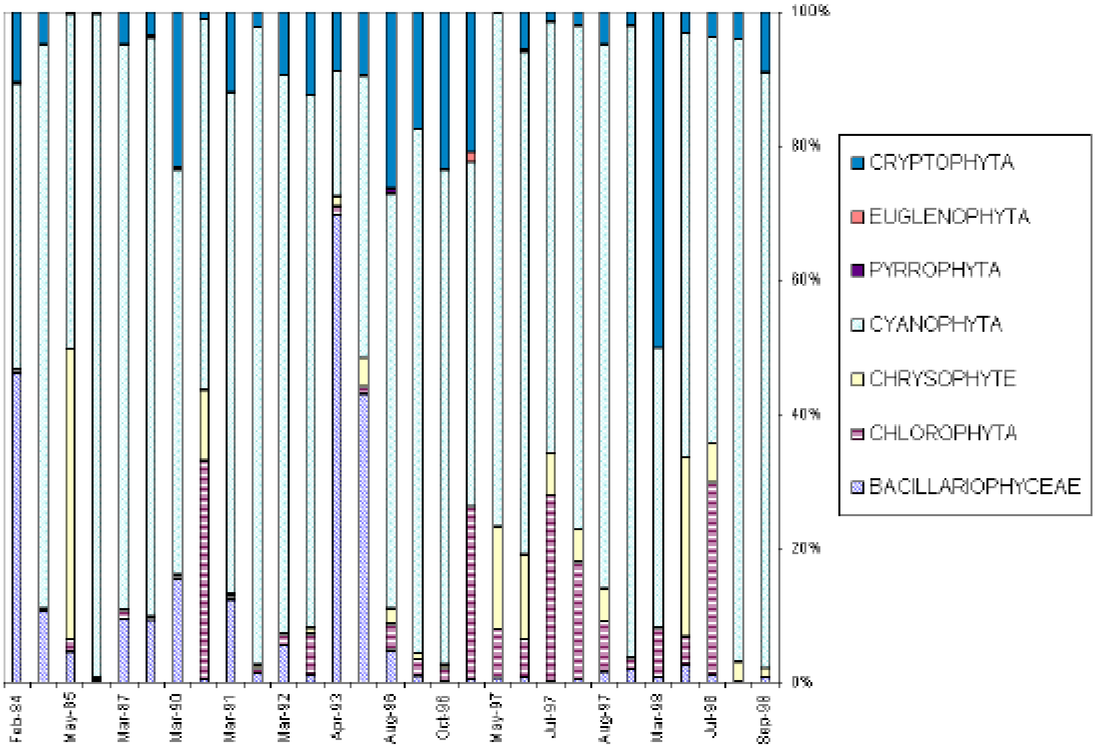
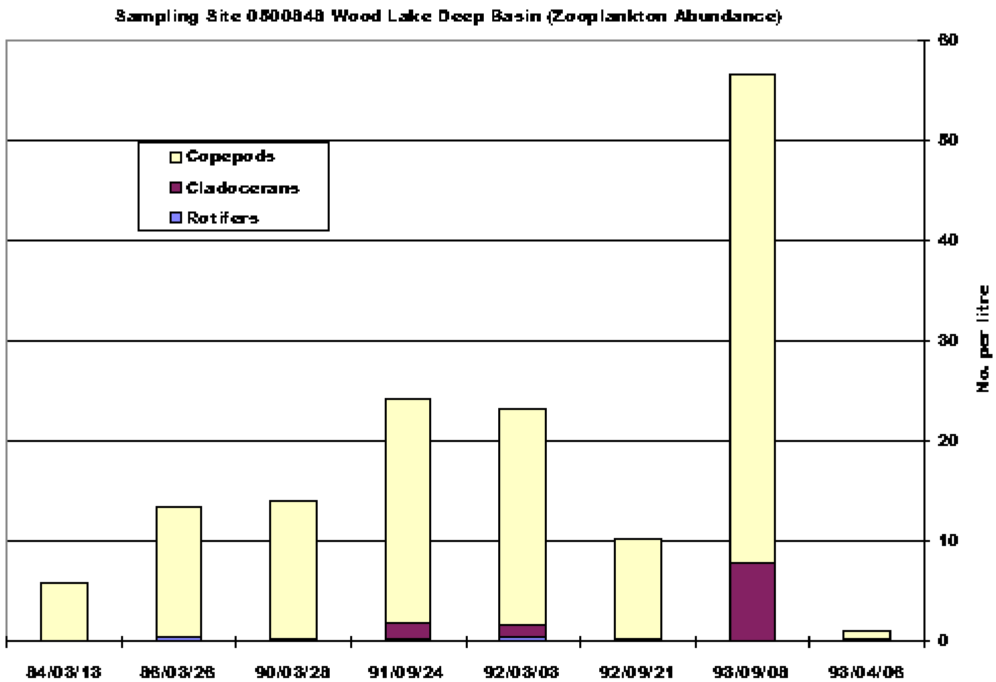


Figure 21. Zooplankton composition in Wood Lake

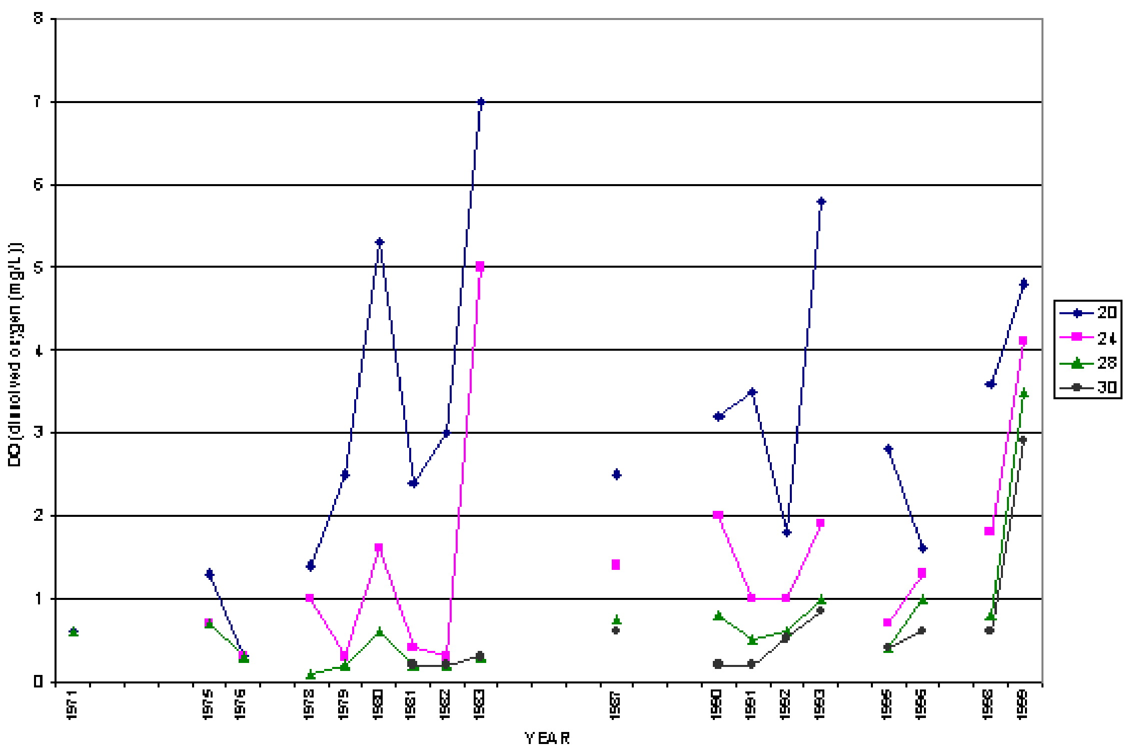


Dissolved Oxygen

After plankton has settled into the hypolimnion, it consumes oxygen in the lake bottom waters. The greater the amount of plankton produced during the summer, the greater is the amount of oxygen consumed during decomposition. Consequently, the oxygen levels in the hypolimnion in autumn give a measure of the total biological production during the growing season. Due to the depth of Kalamalka Lake, bottom water samples have not been collected to determine oxygen consumption, however, given the size of the hypolimnion and the relatively unproductive nature of the lake, it is anticipated that no significant degree of oxygen loss occurs at depth. In contrast, Ellison Lake is considerably more productive than Kalamalka Lake and could be expected to exhibit some dissolved oxygen depletion during periods of stagnation or ice cover. Wind mixing of the lake easily replenishes dissolved oxygen in bottom waters due to the shallow depth of Ellison Lake. No recent measurements of dissolved oxygen have been made during ice cover, however, through-ice measurements in 1973 found some depletion (6.5 mg/L) but no anoxia (Anon. 1974).

Figure 22 shows trends in dissolved oxygen levels in the hypolimnion of Wood Lake in the autumn. The measurements were made between the last week of August and the first week of October in different years, and there were a few years when such measurements are not available. In 1981, the sampling location was moved about 1 km south where the lake was about 3 m deeper in order to sample the same location as the Okanagan Basin Study and Kalamalka and Wood Lake Basin Study workers had used. Thus oxygen was also measured at 30 m after that time. As detailed above, dissolved oxygen decreases in the hypolimnion due to decomposition of dead plankton. When the phytoplankton production decreases in a stratified lake as is did in Wood Lake, then one would expect the summer oxygen consumption to decrease as well. It appears that this has happened to some extent in Wood Lake as the oxygen values in the 1970's are lower than those in later decades (Figure 22).

Figure 22. Autumn D.O. in the hypolimnion of Wood Lake by depth (20-30 metres) and year.



Other chemical and physical characteristics

Table 3 describes the trends in some other water quality characters when plotted through time without regard to season of measurement. Only the parameter data for the epilimnion have been utilized for these trend assessments in order to eliminate the seasonal hypolimnetic effects. No change has occurred in total alkalinity of these lakes. Specific conductance has been decreasing slightly in Wood and Kalamalka Lakes but not in Ellison. Specific conductance measures the ease with which a water sample conducts electricity, providing an index of the total number of ions dissolved in the water. Some of the ions contributing to specific conductivity have been changing, but not necessarily in the same direction as specific conductivity itself. Dissolved silica and sulphate have decreased in Kalamalka and Wood Lakes. Sodium has increased in Kalamalka Lake but decreased in Wood. Total calcium and particularly chloride have increased in both Kalamalka and Wood Lakes. Some of these changes may be related to hydrologic processes. Transfer of lower sulphate waters from Okanagan Lake into Wood and Kalamalka Lakes may explain the decrease in sulphate. Ellison Lake sulphate is significantly lower than Okanagan, Kalamalka or Wood Lakes, however, its rapid flushing rate would make it less sensitive to the inputs from Okanagan Lake. Similarly the decrease in Wood Lake sodium and increase in calcium is to be expected based on the lower sodium and higher calcium values of Okanagan Lake. In Kalamalka Lake sodium has increased slightly due to Wood Lake inputs or other watershed sources. Chloride has increased 5- fold in Kalamalka Lake and 3-fold in Wood Lake over the period of record. These increases are probably attributable to road salt and septic tank inputs to ground water draining to lakes. None of these trends are sufficient to cause water quality to deteriorate to the extent that aquatic life is affected or some water use alienated, however the data does highlight that even the largest of these three lakes is not immune to the changes occurring in its watershed.

Table 2. Comparison of trends among Kalamalka, Wood and Ellison lakes.

All data were plotted for surface waters at main sites in all years and seasons. Where more than one depth was sampled, the values were averaged. Increasing trends are indicated by +, decreasing trends by -, and trends with little or no slope by 0. i indicates inadequate data.

PARAMETER	**Kalamalka**	**Wood**	**Ellison**
Specific conductance	-	-	0
Sulphate	-	-	0
Silica	-	-	-
Sodium	+	-	i
Calcium	+	+	i
Acidity (8.3)	i	i	i
Total Alkalinity (4.5)	0	0	0
Magnesium	0	-	i
Turbidity	i	0	i
Chloride	+	+	-
Total Inorganic Carbon	i	i	i

CONCLUSIONS

In many ways it would be difficult to find three more different lakes in such close proximity with water inflows which are so similar. Kalamalka Lake is a relatively clear lake of low to moderate productivity, and the lake also displays calcium carbonate precipitation during the summer. The north end of Kalamalka Lake is more productive than the rest of the lake suggesting that nutrient loading from the Coldstream Creek drainage is measurably altering Kalamalka Lake water quality. Autumn phytoplankton appears to have been increasing in Kalamalka Lake; otherwise data for the lake shows no clear long-term trend in overall productivity. No significant difference is evident in pairs of samples collected upstream and downstream of the Vernon effluent spray irrigation area (Appendix Figure 8).

Wood Lake is a moderate to high productivity lake with moderate water clarity. Significant improvement in Wood Lake water quality is attributable to the increased flushing rate from 1972 to 1995. Ellison Lake is very shallow and highly productive, with very poor water clarity.

Limnologists ascribe trophic status to these lakes based on the levels of nutrients, productivity and clarity. For Ellison, Wood and Kalamalka Lakes, this is shown in Table 3 which also gives typical values for lakes that are in each of the three trophic categories (Nordin 1984). Oligotrophic lakes have little biological production, eutrophic lakes have considerable, and mesotrophic lakes are intermediate between the two. For Ellison, and Wood lakes, the values are averages of all data on record for both spring and autumn. For Kalamalka Lake, the average statistics combine data for the spring and autumn, as well as for two periods when seasonal data was also collected (1987/88; 1996/7). Accordingly, Ellison Lake may be termed eutrophic, Wood Lake varies from mestrophic to eutrophic and Kalamalka Lake is oligotrophic tending toward mesotrophic, with higher nitrogen than normally associated with this trophic level, and relatively high phytoplankton indicators and spring phosphorus.

Table 3. Typical ranges of phytoplankton and nutrient parameters for lakes of different trophic status (from Nordin 1984) and long term average values for Ellison (0500114), Wood (0500848) and Kalamalka (0500847) Lakes.

	Chl *a*(ug/L)	Phytoplankton Abundance (#/mL)	Total P (ug/L)	Total N (ug/L)	Secchi Depth (m)
Trophic Status	growing season mean	Growing season mean	at spring overturn	at spring overturn	growing season mean
Oligotrophic	0-2	<1000	1-10	<100	>6
Mesotrophic	2-5	1000-5000	10-20	100-500	3-6
Eutrophic	>5	>5000	>20	500-1000	<3
Kalamalka	1.7(90)	3450(29)	8(52)	265(38)	8(64)
Wood	13(102)	2990(13)	55(58)	503(47)	5.4 (63)
Ellison	17(82)	18,270(8)	42(48)	440(45)	1.0(75)

* values in brackets indicate sample size

Of particular interest to the future water quality of these lakes will be the removal of the Hiram Walker cooling water discharge of Okanagan Lake water into Ellison Lake. This water transfer enhanced Wood Lake water quality from 1972 to 1995. Recent installation of sewage collection and treatment with ground disposal for the municipality of Lake Country will, over time, reduce nutrient loading to Wood and Kalamalka Lakes. Efforts to reduce non-point source pollution from stormwater, septic tanks, agriculture and logging, will continue to be important in protecting water quality of these basins.

All of the nine sampling sites now have a long period of record and serve useful purposes. Although the two sites on Ellison Lake show very similar data, reducing the monitoring on Ellison Lake to one site would save little field time or lab funds. Both sites on Wood Lake are useful, particularly given the watershed changes which have occurred upstream of Wood Lake (*e.g.* wastewater collection and treatment; removal of Hiram Walker cooling water discharge). Given the size of Kalamalka Lake, all 5 sites presently sampled provide useful information. We therefore recommend that the monitoring program continue unchanged for now.

REFERENCES

Anon. 1974a. Kalamalka-Wood lake basin water resource management study. Water Investigations Branch, Dept. Lands Forests and Water Resources, Victoria, B.C. 208p

Anon. 1974b. Limnology of the major lakes in the Okanagan basin. Canada-British Columbia Okanagan Basin Agreement Technical Supplement 5. 261p

Anon. 1985. Phosphorus in the Okanagan valley lakes: sources, water quality objectives and control possibilities. BC Ministry of Environment. 163p.

Ashley, K., I. McGregor, B. Shephard, D. Sebastian, S. Matthews, L. Vidmanic, P. Ward, H. Yassien, L. McEachern, H. Andrusak, D. Lasenby, J. Quirt, J. Whall, E. Taylor, A. Kuiper, P.M Troffe,. C.Wong, G. Scholten, M. Zimmerman, P. Epp, V. Jensen, and R. Finnegan. Okanagan lake action plan year 3 (1998) report. Fisheries Management Branch, Ministry of Environment, Lands & Parks, Vancouver, BC.

Bryan, J.E. 1990. Water quality of Okanagan, Kalamalka and Wood Lakes. BC Ministry of Environment, Penticton, BC. 44p.

Deimert, D.D. and B.W. Kelso. 1980. Algal analysis of Okanagan area lakes in 1979. Environment Canada, Vancouver. B.C. 14p.

Jasper, S. and C.B.J. Gray. 1982. The chemical and microbiological limnology of Wood lake, B.C. 1980. National Water Research Institute, Inland Waters Directorate, Vancouver, BC. 107p.

Koshinsky, G. D. and J. E. Andres. 1972. The limnology - fisheries of the Okanagan headwater lakes. Canada-B. C. Okanagan Basin Study Agreement Preliminary Report 14. 144p.

Nordin, R. N. 1984. Water quality criteria for nutrients and algae. Water Quality Unit, Resource quality Section, Water Management, B. C. Environment, 90 p.

Nordin, R. N. 1994. Wood lake. In The Book of Canadian Lakes. Eds R.J. Allan, M. Dickman, C.B. Gray and V. Cromie. Canadian Association on Water Quality, Monograph No. 3 : 534-546

Stein, J.R. and T.L. Coulthard. 1971. A report of the Okanagan water investigation. Prepared by the UBC Departments of Agriculture Engineering and Mechanics for the Water Investigations Branch, BC Water Resources Service. 176p.

Walker, I.R., E.D. Reavie, S. Palmer and R.N. Nordin. 1993. A palaeoenvironmental assessment of human impact on Wood lake, Okanagan valley, British Columbia, Canada. Quarternary International 20: 51-70.

Appendix Table 1: Ellison Lake at centres (Site 0500114)

Code:80	Description:SOUTHERN INTERIOR, PENTICTON														
Parameter Code	Smpl St Cd	Smpl Desc Cd	Unit	Start Date	End Date	Data Points	Data Points Used	Std. Dev.	Max Result Letter	Max Result	Min Result Letter	Min Result	Mean	Median	90th Percentile
pH	FW	GE	pH units	04/10/85	04/13/00	37	37	0.4		8.9		7.3	7.9	7.8	8.5
Spec. Conductance	FW	GE	uS/cm	04/10/85	09/14/99	26	26	14		161		103	128	129	144.5
Temperature	FW	GE	C	04/10/85	09/11/00	33	33	6		21		4	15	18.4	20.5
DO	FW	GE	mg/L	03/29/88	08/28/95	16	16	2.3		11.9		4.1	9.3	9.6	11.8
Secchi Depth	FW	GE	m	04/10/85	09/11/00	21	21	0.4		1.6		0.3	0.9	1	1.2
P Alkalinity - 8.3	FW	GE	mg/L	03/24/86	04/26/93	7	0		<	0.5	<	0.5		0.5	0.5
T Alkalinity - 4.5	FW	GE	mg/L	03/24/86	09/14/99	9	9	6.7		70.3		49.4	57.3	53.6	62.8
0106	FW	GE	mg/L	03/19/98	09/14/99	2	2	0.01		0.08		0.07	0.08	0.1	0.1
TKN	FW	GE	mg/L	04/10/85	08/28/95	20	20	0.18		0.94		0.25	0.48	0.43	0.79
T. Nitrogen	FW	GE	mg/L	09/10/96	09/11/00	7	7	0.11		0.59		0.33	0.48	0.49	0.59
Acidity - 8.3	FW	GE	mg/L	03/27/90	03/27/90	1	1	0		3.5		3.5	3.5	3.5	3.5
Chlorophyll A	FW	GE	ug/L	03/24/87	09/11/00	31	11	0.0072	M	0.03	<	0.0005	0.0107	0.0107	0.0176
Chlorophyll A	PT	PH	ug/L	04/10/85	09/22/86	4	0		M	0.023	M	0.0056		0.0122	0.0198
Fecal Coliform	FW	GE	MPN	03/24/87	03/24/87	1	0		<	2	<	2		2	2

Fecal Coliform	FW	GE	CFU/100mL	08/31/87	03/15/95	7	5	4.1	<	10	<	0	3.6	2	8
Br-D	FW	GE	mg/L	03/19/98	04/13/00	3	0		<	0.05	<	0.05		0.05	0.05
Cl - D	FW	GE	mg/L	03/15/95	04/13/00	4	4	0.3		1.8		1.1	1.4	1.4	1.6
Fouride - D	FW	GE	mg/L	04/13/00	04/13/00	1	1	0		0.07		0.07	0.07	0.07	0.07
N - D Ammonia	FW	GE	mg/L	04/10/85	09/11/00	26	15	0.007	<	0.038	<	0.005	0.01	0.0	0.012
N - NO2+NO3 - D	FW	GE	mg/L	04/10/85	09/11/00	24	4	0.007	<	0.03	<	0.002	0.026	0.02	0.025
N - NO3 - D	FW	GE	mg/L	03/19/98	04/13/00	3	1	0.003	<	0.007	<	0.002	0.007	0.002	0.002
N - NO2 - D	FW	GE	mg/L	08/20/85	04/13/00	23	1	0.001	<	0.005	<	0.002	0.005	0.005	0.005
Ortho P - D	FW	GE	mg/L	03/19/98	09/11/00	6	2	0.027	<	0.05	<	0.001	0.0	0.026	0.05
Silica Reactive - D	FW	GE	mg/L	04/10/85	09/11/00	20	20	3.0		19.8		7.2	11.8	11.8	15.8
Sulphate - D	FW	GE	mg/L	03/19/98	04/13/00	3	3	0.7		6		4.6	5.2	5	5
Total Hardness	FW	GE	mg/L	03/19/98	09/14/99	2	2	4.1		56		50.2	53.1	53.1	53.1
AG-T	FW	GE	mg/L	03/19/98	03/19/98	1	0		<	0.01	<	0.01		0.01	0.01
AL-T	FW	GE	mg/L	03/19/98	03/19/98	1	1	0		0.45		0.45	0.45	0.45	0.45
AS-T	FW	GE	mg/L	03/19/98	03/19/98	1	0		<	0.06	<	0.06		0.06	0.06
B--T	FW	GE	mg/L	03/19/98	03/19/98	1	0		<	0.01	<	0.01		0.01	0.01
BA-T	FW	GE	mg/L	03/19/98	03/19/98	1	1	0		0.01		0.01	0.01	0.01	0.01
BE-T	FW	GE	mg/L	03/19/98	03/19/98	1	0		<	0.001	<	0.001		0.001	0.001
CA-E	FW	GE	mg/L	03/19/98	09/14/99	2	2	0.6		12.6		11.8	12.2	12.2	12.2

CA-T	FW	GE	mg/L	03/19/98	03/19/98	1	1	0		12.2		12.2	12.2	12.2	12.2
CD-T	FW	GE	mg/L	03/19/98	03/19/98	1	0		<	0.006	<	0.006		0.006	0.006
CO-T	FW	GE	mg/L	03/19/98	03/19/98	1	0		<	0.006	<	0.006		0.006	0.006
CR-T	FW	GE	mg/L	03/19/98	03/19/98	1	0		<	0.006	<	0.006		0.006	0.006
CU-T	FW	GE	mg/L	03/19/98	03/19/98	1	0		<	0.006	<	0.006		0.006	0.006
FE-T	FW	GE	mg/L	03/19/98	03/19/98	1	1	0		0.508		0.508	0.508	0.508	0.508
K--E	FW	GE	mg/L	03/19/98	09/14/99	2	2	0.2		1.7		1.4	1.6	1.6	1.6
K--T	FW	GE	mg/L	03/19/98	03/19/98	1	1	0		1.3		1.3	1.3	1.3	1.3
MG-E	FW	GE	mg/L	03/19/98	09/14/99	2	2	0.7		6		5	5.5	5.5	5.5
MG-T	FW	GE	mg/L	03/19/98	03/19/98	1	1	0		5.9		5.9	5.9	5.9	5.9
MN-T	FW	GE	mg/L	03/19/98	03/19/98	1	1	0		0.053		0.053	0.053	0.053	0.053
MO-T	FW	GE	mg/L	03/19/98	03/19/98	1	0		<	0.01	<	0.01		0.01	0.01
NA-E	FW	GE	mg/L	03/19/98	09/14/99	2	2	0.5		5.2		4.5	4.9	4.9	4.9
NA-T	FW	GE	mg/L	03/19/98	03/19/98	1	1	0		5		5	5	5	5
NI-T	FW	GE	mg/L	03/19/98	03/19/98	1	0		<	0.02	<	0.02		0.02	0.02
P--D	FW	GE	mg/L	04/10/85	09/11/00	26	26	0.006		0.03		0.004	0.012	0.012	0.0185
P--T	FW	GE	mg/L	04/10/85	09/11/00	29	28	0.025	<	0.135	<	0.011	0.050	0.047	0.083
PB-T	FW	GE	mg/L	03/19/98	03/19/98	1	0		<	0.06	<	0.06		0.06	0.06
S--T	FW	GE	mg/L	03/19/98	03/19/98	1	1	0		2.08		2.08	2.08	2.08	2.08
SB-T	FW	GE	mg/L	03/19/98	03/19/98	1	0		<	0.06	<	0.06		0.06	0.06
SE-T	FW	GE	mg/L	03/19/98	03/19/98	1	0		<	0.06	<	0.06		0.06	0.06

SI-E	FW	GE	mg/L	03/19/98	09/14/99	2	2	2.80		10.1		6.14	8.12	8.12	8.12
SI-T	FW	GE	mg/L	03/19/98	03/19/98	1	1	0		6.93		6.93	6.93	6.93	6.93
SN-T	FW	GE	mg/L	03/19/98	03/19/98	1	0		<	0.06	<	0.06		0.06	0.06
SR-T	FW	GE	mg/L	03/19/98	03/19/98	1	1	0		0.075		0.075	0.075	0.075	0.075
TI-T	FW	GE	mg/L	03/19/98	03/19/98	1	1	0		0.027		0.027	0.027	0.027	0.027
V--T	FW	GE	mg/L	03/19/98	03/19/98	1	0		<	0.01	<	0.01		0.01	0.01
ZN-T	FW	GE	mg/L	03/19/98	03/19/98	1	0		<	0.002	<	0.002		0.002	0.002

Appendix Table 2: Ellison Lake at center (Site 0500265)

Code:80	Description:SOUTHERN INTERIOR, PENTICTON														
Parameter Code	Smpl St Cd	Smpl Desc Cd	Unit	Start Date	End Date	Data Points	Data Points Used	Std. Dev.	Max Result Letter	Max Result	Min Result Letter	Min Result	Mean	Median	90th Percentile
Color - True	FW	GE	Col.unit	07/22/71	07/22/71	1	1	0		20		20	20	20	20
Oil & Grease	FW	GE	mg/L	07/22/71	07/22/71	1	1	0		0.93		0.93	0.93	0.93	0.93
pH	FW	GE	pH units	02/12/69	04/13/00	116	116	0.56		9.7		7.05	8	7.9	9
TS	FW	GE	mg/L	02/12/69	09/14/79	40	40	47		284		80	144	138	183
Residue - T Fix.	FW	GE	mg/L	04/16/70	07/22/71	6	6	10		118		93	105	106	115
TDS	FW	GE	mg/L	02/12/69	09/14/79	27	27	16		115		56	87	90	103
TSS	FW	GE	mg/L	02/12/69	09/14/79	35	35	46		184		4	45	32	80
Residue	FW	GE	mg/L	07/22	07/22	1	1	0		18		18	18	18	18

- Nonfilt. V				/71	/71										
Spec. Conductance	FW	GE	uS/cm	04/16/70	09/14/99	92	92	17		160		88	131	129	156
Temperature	FW	GE	C	02/12/69	09/11/00	129	129	6.5073		24.5		1.1111	15.6681	18.333	23
DO	FW	GE	mg/L	05/08/69	08/28/95	78	78	2.8		20		0.4	8.6	8.9	11.3
Turbidity	FW	GE	NTU	02/12/69	03/09/92	26	26	24		110		2	16	8	38
Secchi Depth	FW	GE	m	04/04/79	09/11/00	36	36	0.3		1.7		0.3	0.9	1	1.3
Color - TAC	FW	GE	TAC	02/12/69	03/20/84	20	20	21		100		6	33	30	50
P Alkalinity - 8.3	FW	GE	mg/L	02/12/69	04/26/93	32	26	1	<	3	<	0	1	0	2
T Alkalinity - 4.5	FW	GE	mg/L	04/16/70	09/14/99	22	22	6.3		70.1		47.2	56.1	55.3	63.1
Carbon - T Org.	FW	GE	mg/L	07/22/71	09/03/80	10	10	3		16		8	11	11	15
Chloride	FW	GE	mg/L	07/22/71	07/22/71	1	1	0		0.9		0.9	0.9	0.9	0.9
Cyanide T - Water	FW	GE	mg/L	07/22/71	07/22/71	1	1	0		0		0	0	0	0
Fluoride	FW	GE	mg/L	03/19/98	09/14/99	2	2	0.01		0.08		0.07	0.08	0.08	0.08
Hardness T: CaCO3	FW	GE	mg/L	04/16/70	03/20/84	7	7	5.6		62.7		45.5	52.1	50.1	56
T. Org. Nitrogen	FW	GE	mg/L	04/16/70	08/29/84	23	23	0.46		2		0.15	0.70	0.67	0.89
TKN	FW	GE	mg/L	04/04/79	08/28/95	37	37	0.4		2		0.3	0.6	0.5	0.9
T. Nitrogen	FW	GE	mg/L	04/16/70	09/11/00	29	29	0.41		2		0.29	0.69	0.61	1
BOD	FW	GE	mg/L	07/22/71	07/22/71	1	0		<	10	<	10		10	10
COD	FW	GE	mg/L	02/12	04/12	17	17	6.6		49.7		23.4	32.7	32	38.6

				/69	/71										
Phenol	FW	GE	mg/L	07/22/71	07/22/71	1	1	0		0.002		0.002	0.002	0.002	0.002
Silica - T	FW	GE	mg/L	04/16/70	07/22/71	6	6	4.1		26.8		15.7	21.1	20.7	25.5
Carbon - T Inorg.	FW	GE	mg/L	02/12/69	08/20/79	24	24	5.1		15		0.1	6.2	4.4	14
Acidity - 8.3	FW	GE	mg/L	04/19/82	03/27/90	4	4	0.6		3		1.6	2.1	2.0	2.5
Chlorophyll A	FW	GE	mg/L	04/04/79	08/29/84	16	9	0.0190	M	0.08	M	0.0056	0.0227	0.0185	0.041
Chlorophyll A	FW	GE	ug/L	03/24/87	09/11/00	31	11	0.0076	M	0.0334	<	0.0005	0.0115	0.0103	0.0187
Chlorophyll A	PT	PH	ug/L	04/10/85	09/22/86	4	0		M	0.0239	M	0.0082		0.0141	0.0202
Phaeophytin A	FW	GE	mg/L	06/11/79	08/30/82	11	6	0.0037	M	0.0098	<	0.0005	0.0040	0.0017	0.0066
Fecal Coliform	FW	GE	CFU/100mL	08/31/87	03/15/95	7	5	1	<	4	<	0	1	1	2
Fecal Coliform	FW	GE	MPN	04/04/79	03/24/87	8	1	0	<	2	<	2	2	2	2
Total Coliform	FW	GE	MPN	02/12/69	09/14/79	25	20	3213	<	16090	<	1	838	5	80
Br - D	FW	GE	mg/L	03/19/98	04/13/00	3	0		<	0.05	<	0.05		0.05	0.05
Cl - D	FW	GE	mg/L	02/12/69	04/13/00	35	33	1.5	<	7.5	<	0.1	2.3	2	3.5
Flouride - D	FW	GE	mg/L	07/22/71	04/13/00	2	1	0.08	<	0.13	<	0.01	0.13	0.07	0.07
Total Hardness - D	FW	GE	mg/L	02/12/69	09/14/79	21	21	11		88		24	52	50	60
N - D Ammonia	FW	GE	mg/L	04/04/79	09/11/00	43	29	0.021	<	0.1	<	0.005	0.025	0.008	0.039
N - NO2+NO3 - D	FW	GE	mg/L	04/04/79	09/11/00	41	7	0.009	<	0.06	<	0.002	0.030	0.02	0.02
N - NO3 - D	FW	GE	mg/L	03/19/98	04/13/00	3	0		<	0.002	<	0.002		0.002	0.002
N - NO2 - D	FW	GE	mg/L	02/12/69	04/13/00	51	18	0.012	<	0.05	<	0.002	0.025	0.005	0.03

Ortho P - D	FW	GE	mg/L	02/12/69	09/11/00	30	23	0.029	<	0.15	<	0.001	0.023	0.01	0.05
Silica Reactive Fix.	FW	GE	mg/L	02/12/69	09/11/00	53	52	3.7	<	19.8	<	0.5	13.5	13	17.8
Sulphate - D	FW	GE	mg/L	02/12/69	04/13/00	32	30	3.3	<	12	<	0.5	5.3	4.3	9.2
Surfactant - D	FW	GE	mg/L	07/14/70	07/22/71	2	1	0.018	<	0.025	<	0	0	0.013	0.013
Total Hardness	FW	GE	mg/L	09/14/99	09/14/99	1	1	0		50		50	50	50	50
AL-T	FW	GE	mg/L	03/28/83	03/20/84	2	2	0.06		0.3		0.22	0.26	0.26	0.26
AS-T	FW	GE	mg/L	07/22/71	03/20/84	3	1	0.14	<	0.25	<	0	0	0.25	0.25
CA-D	FW	GE	mg/L	02/12/69	09/14/79	24	24	1.7		15.6		8	12.0	11.9	14
CA-E	FW	GE	mg/L	09/14/99	09/14/99	1	1	0		11.8		11.8	11.8	11.8	11.8
CA-T	FW	GE	mg/L	04/04/79	03/20/84	6	6	1.2		15.9		13	14.6	14.7	15.8
CD-T	FW	GE	mg/L	03/28/83	03/20/84	2	0		<	0.01	<	0.01		0.01	0.01
CO-T	FW	GE	mg/L	03/28/83	03/20/84	2	0		<	0.1	<	0.1		0.1	0.1
CR-T	FW	GE	mg/L	03/28/83	03/20/84	2	0		<	0.01	<	0.01		0.01	0.01
CU-D	FW	GE	mg/L	02/12/69	07/22/71	7	4	0.01	<	0.03	<	0	0.01	0.02	0.02
CU-T	FW	GE	mg/L	03/28/83	03/20/84	2	1	0.01	<	0.02	<	0.01	0.02	0.02	0.02
FE-D	FW	GE	mg/L	02/12/69	07/22/71	25	25	1.14		5		0.06	0.89	0.58	1.54
FE-T	FW	GE	mg/L	02/12/69	03/20/84	19	19	2.5		8.8		0.4	2.1	1.4	3.5
HG-D	FW	GE	mg/L	07/22/71	07/22/71	1	0		<	0.00002	<	0.00002		0.00002	0.00002
HG-T	FW	GE	mg/L	07/22/71	08/22/88	2	0		<	0.00005	<	0.00002		0.00004	0.00004
K--D	FW	GE	mg/L	02/12/69	03/20/84	33	30	0.5	<	2.2	<	0	1.4	1.4	1.7

K--E	FW	GE	mg/L	09/14/99	09/14/99	1	1	0		1.6		1.6	1.6	1.6	1.6
MG-D	FW	GE	mg/L	02/12/69	08/20/79	20	20	1.14		6.6		0.95	4.78	4.9	6
MG-E	FW	GE	mg/L	09/14/99	09/14/99	1	1	0		5		5	5	5	5
MG-T	FW	GE	mg/L	04/16/70	03/20/84	12	12	0.51		5.79		4	5.01	5	5.61
MN-D	FW	GE	mg/L	04/16/70	07/22/71	6	6	0.02		0.09		0.04	0.07	0.08	0.09
MN-T	FW	GE	mg/L	03/28/83	03/20/84	2	2	0		0.04		0.04	0.04	0.04	0.04
MO-T	FW	GE	mg/L	03/28/83	03/20/84	2	0		<	0.01	<	0.01		0.01	0.01
NA-D	FW	GE	mg/L	02/12/69	03/20/84	28	28	1.5		6.5		1.8	4.6	5.3	6
NA-E	FW	GE	mg/L	09/14/99	09/14/99	1	1	0		4.5		4.5	4.5	4.5	4.5
NI-D	FW	GE	mg/L	07/22/71	07/22/71	1	0		<	0.01	<	0.01		0.01	0.01
NI-T	FW	GE	mg/L	03/28/83	03/20/84	2	0		<	0.05	<	0.05		0.05	0.05
P--D	FW	GE	mg/L	02/12/69	09/11/00	65	65	0.036		0.23		0.003	0.027	0.013	0.07
P--T	FW	GE	mg/L	04/16/70	09/11/00	51	51	0.034		0.161		0.011	0.057	0.047	0.093
PB-D	FW	GE	mg/L	04/16/70	07/22/71	6	5	0.017	<	0.05	<	0.003	0.023	0.017	0.037
PB-T	FW	GE	mg/L	03/28/83	03/20/84	2	0		<	0.1	<	0.1		0.1	0.1
SI-E	FW	GE	mg/L	09/14/99	09/14/99	1	1	0		9.96		9.96	9.96	9.96	9.96
V--T	FW	GE	mg/L	03/28/83	03/20/84	2	0		<	0.01	<	0.01		0.01	0.01
ZN-D	FW	GE	mg/L	04/16/70	07/22/71	6	6	0.02		0.06		0.02	0.04	0.04	0.06
ZN-T	FW	GE	mg/L	03/28/83	03/20/84	2	1	0.01	<	0.02	<	0.01	0.02	0.02	0.02

Appendix Table 3: Wood Lake West Vernon Creek (0500450)

Code:80	Description:SOUTHERN INTERIOR, PENTICTON														
Parameter. Code	Smpl St Cd	Smpl Desc Cd	Unit	Start Date	End Date	Data Points	Data Points Used	Std. Dev.	Max Result Letter	Max Result	Min Result Letter	Min Result	Mean	Median	90th Percentile
Color - True	FW	GE	Col.unit	07/22/71	07/22/71	1	0		<	5	<	5		5	5
Oil & Grease	FW	GE	mg/L	07/22/71	07/22/71	1	1	0		0.38		0.38	0.38	0.38	0.38
pH	FW	GE	pH units	07/22/71	09/13/00	200	200	0.50		9.1		5.58	8.14	8.2	8.7
Residue Total	FW	GE	mg/L	07/22/71	10/07/76	9	9	12		222		186	210	214	220
Residue T - Fix.	FW	GE	mg/L	07/22/71	07/22/71	1	1	0		140		140	140	140	140
Residue Total Diss.	FW	GE	mg/L	07/22/71	10/17/79	31	31	11		222		182	203	202	214
Residue Non-Filt.	FW	GE	mg/L	07/22/71	07/22/71	1	1	0		10.6		10.6	10.6	10.6	10.6
Residue Nonfilt. V	FW	GE	mg/L	07/22/71	07/22/71	1	1	0		3.4		3.4	3.4	3.4	3.4
Spec. Conductance	FW	GE	uS/cm	07/22/71	09/13/99	343	343	62.419		400		0.343	324.163	335	360
Temperature	FW	GE	C	04/24/75	09/13/00	434	434	6		25		2	10	9	20
DO	FW	GE	mg/L	08/25/75	07/12/94	359	357	3.9	<	15.6	<	0.1	8.8	9.3	13.6
Turbidity	FW	GE	NTU	07/22/71	10/17/79	31	31	1.5		5.7		0.6	2.3	2.1	3.7
Secchi Depth	FW	GE	m	04/24/75	09/13/00	68	68	2.21580		10.2		0.60961	4.34997	4.7	6.5
Color - TAC	FW	GE	TAC	03/31/82	03/31/82	1	1	0		10		10	10	10	10

Residue T Volatile	SO	SE	%(W/W)	09/30/85	09/30/85	1	1	0		12.8		12.8	12.8	12.8	12.8
P Alkalinity - 8.3	FW	GE	mg/L	07/22/71	07/22/71	1	1	0		18.5		18.5	18.5	18.5	18.5
T Alkalinity - 4.5	FW	GE	mg/L	07/22/71	09/13/99	4	4	7		149		133	141	141	145
Carbon - T Org.	FW	GE	mg/L	07/22/71	10/23/80	36	36	3		17		2	7	6	10
Chloride	FW	GE	mg/L	07/22/71	07/22/71	1	1	0		2.8		2.8	2.8	2.8	2.8
Cyanide T - Water	FW	GE	mg/L	07/22/71	07/22/71	1	1	0		0		0	0	0	0
Fluoride	FW	GE	mg/L	09/13/99	09/13/99	2	2	0		0.12		0.12	0.12	0.12	0.12
Hardness T: CaCo3	FW	GE	mg/L	07/22/71	07/22/71	1	1	0		135		135	135	135	135
Ammonia N - T	FW	GE	mg/L	07/22/71	07/22/71	1	1	0		0.06		0.06	0.06	0.06	0.06
Nitrate N	FW	GE	mg/L	07/22/71	08/23/82	15	10	0.10	<	0.3	<	0.02	0.2	0.17	0.23
Nitrite N - T	FW	GE	mg/L	07/22/71	07/22/71	1	0		<	0.005	<	0.005		0.005	0.005
T. Org Nitrogen	FW	GE	mg/L	07/22/71	08/23/82	46	46	0.18		0.88		0.28	1	0.48	1
TKN	FW	GE	mg/L	04/24/75	09/11/95	86	86	0.19		1		0.26	0	0	1
TKN	SO	SE	ug/g	09/30/85	09/30/85	1	1	0		5540		5540	5540	5540	5540
T. Nitrogen	FW	GE	mg/L	07/22/71	09/13/00	59	59	0.24		1.25		0.35	1	0.68	1.02
BOD	FW	GE	mg/L	07/22/71	07/22/71	1	0		<	10	<	10		10	10
Phenol - T	FW	GE	mg/L	07/22/71	07/22/71	1	1	0		0.003		0.003	0.003	0.003	0.003
Phos. Ortho - T	FW	GE	mg/L	07/22/71	07/22/71	1	0		<	0.003	<	0.003		0.003	0.003

Silica -D	FW	GE	mg/L	07/22/71	07/22/71	1	1	0		5.6		5.6	5.6	5.6	5.6
Carbon - T Inorg.	FW	GE	mg/L	04/24/75	10/17/79	29	29	4		42		27	36	37	40
Carbon - T Inorg.	SO	SE	ug/g	09/30/85	09/30/85	1	1	0		15100		15100	15100	15100	15100
Sulphides - T	FW	GE	mg/L	10/13/77	10/13/77	1	0		<	0.5	<	0.5		0.5	0.5
Acidity - 8.3	FW	GE	mg/L	04/19/79	03/31/82	7	2	0.8	<	2.6	<	0.5	1.9	0.5	1.1
Chlorophyll A	FW	GE	mg/L	08/25/75	08/23/82	26	20	0.0090	M	0.036	<	0.0005	0.0096	0.005	0.0199
Chlorophyll A	FW	GE	ug/L	03/26/86	09/13/00	30	6	0.0062	M	0.0258	<	0.0002	0.0099	0.0044	0.0168
Chlorophyll A	PT	PH	ug/L	09/30/85	09/22/86	2	0		M	0.0037	M	0.0032		0.0035	0.0035
Phaeophytin A	FW	GE	mg/L	10/13/77	08/23/82	10	1	0.0011	M	0.0036	<	0.0005	0.0036	0.0005	0.0029
Fecal Coliform	FW	GE	CFU/100mL	03/02/88	03/22/94	4	1	1	<	2	<	0	0	2	2
Fecal Coliform	FW	GE	MPN	04/24/75	03/04/87	23	6	2	<	8	<	2	4	2	2
Total Coliform	FW	GE	MPN	04/24/75	08/18/81	15	7	3	<	11	<	2	5	2	5
Br - D	FW	GE	mg/L	09/13/99	09/13/99	2	0		<	0.05	<	0.05		0.05	0.05
Cl - D	FW	GE	mg/L	04/24/75	09/13/99	36	36	2.0		11		2.5	3.7	3.1	5.1
Flouride - D	FW	GE	mg/L	07/22/71	07/22/71	1	1	0		0.33		0.33	0.33	0.33	0.33
N - D Ammonia	FW	GE	mg/L	04/24/75	09/13/00	94	59	0.095	<	0.72	<	0.005	0.06	0.014	0.062
N - NO2 + NO3 - D	FW	GE	mg/L	04/24/75	09/13/00	96	68	0.132	<	0.58	<	0.004	0.18	0.086	0.33
N - NO3 - D	FW	GE	mg/L	09/13/99	09/13/99	2	1	0.153	<	0.219	<	0.002	0.219	0.11	0.11
N - NO2 - D	FW	GE	mg/L	03/31/80	09/13/99	55	3	0.000	<	0.006	<	0.005	0.01	0.005	0.005
Ortho P - D	FW	GE	mg/L	09/13/99	09/13/00	8	4	0.019	<	0.05	<	0.001	0.027	0.03	0.05

Silica Reactive - D	FW	GE	mg/L	04/24/75	03/01/00	62	54	1.8	<	5.8	<	0.1	2.9	2.5	5.3
Sulphate - D	FW	GE	mg/L	07/22/71	09/13/99	34	34	2.4		31.5		18	25.7	26	27.8
Surfactants - D	FW	GE	mg/L	07/22/71	07/22/71	1	1	0		0		0	0	0	0
Total Hardness	FW	GE	mg/L	09/13/99	09/13/99	2	2	16		149		127	138	138	138
AG-T	FW	GE	mg/L	03/22/94	03/22/94	1	0		<	0.03	<	0.03		0.03	0.03
AL-T	FW	GE	mg/L	10/31/85	03/22/94	2	1	0.02	<	0.06	<	0.03	0.03	0.05	0.05
AL-T	SO	SE	ug/g	09/30/85	09/30/85	1	1	0		9310		9310	9310	9310	9310
AS-T	FW	GE	mg/L	07/22/71	03/22/94	3	1	0.13	<	0.25	<	0	0	0.04	0.04
AS-T	SO	SE	ug/g	09/30/85	09/30/85	1	1	0		2.1		2.1	2.1	2.1	2.1
B--T	FW	GE	mg/L	03/22/94	03/22/94	1	0		<	0.04	<	0.04		0.04	0.04
BA-T	FW	GE	mg/L	03/22/94	03/22/94	1	1	0		0.016		0.016	0.016	0.016	0.016
BA-T	SO	SE	ug/g	09/30/85	09/30/85	1	1	0		124		124	124	124	124
BE-T	FW	GE	mg/L	03/22/94	03/22/94	1	0		<	0.001	<	0.001		0.001	0.001
BI-T	FW	GE	mg/L	03/22/94	03/22/94	1	0		<	0.02	<	0.02		0.02	0.02
C--T	SO	SE	ug/g	09/30/85	09/30/85	1	1	0		62700		62700	62700	62700	62700
CA-D	FW	GE	mg/L	07/22/71	07/22/71	1	1	0		23.4		23.4	23.4	23.4	23.4
CA-E	FW	GE	mg/L	09/13/99	09/13/99	2	2	5.6		36.2		28.3	32.3	32.3	32.3
CA-T	FW	GE	mg/L	04/24/75	03/22/94	33	33	3.1		32.6		17.3	26.5	27.1	29.1
CA-T	SO	SE	ug/g	09/30/85	09/30/85	1	1	0		46000		46000	46000	46000	46000
CD-T	FW	GE	mg/L	10/31/85	03/22/94	2	0		<	0.01	<	0.002		0.006	0.006

CD-T	SO	SE	ug/g	09/30/85	09/30/85	1	0		<	1	<	1		1	1
CO-T	FW	GE	mg/L	10/31/85	03/22/94	2	0		<	0.1	<	0.004		0.052	0.052
CO-T	SO	SE	ug/g	09/30/85	09/30/85	1	1	0		31		31	31	31	31
CR-T	FW	GE	mg/L	10/31/85	03/22/94	2	0		<	0.01	<	0.002		0.006	0.006
CR-T	SO	SE	ug/g	09/30/85	09/30/85	1	1	0		45		45	45	45	45
CU-D	FW	GE	mg/L	07/22/71	07/22/71	1	0		<	0.01	<	0.01		0.01	0.01
CU-T	FW	GE	mg/L	10/31/85	03/22/94	2	1	0.013	<	0.02	<	0.002	0.02	0.011	0.011
CU-T	SO	SE	ug/g	09/30/85	09/30/85	1	1	0		26		26	26	26	26
FE-D	FW	GE	mg/L	07/22/71	07/22/71	1	0		<	0.02	<	0.02		0.02	0.02
FE-T	FW	GE	mg/L	10/31/85	03/22/94	2	2	0.01		0.06		0.05	0.06	0.06	0.06
FE-T	SO	SE	ug/g	09/30/85	09/30/85	1	1	0		23000		23000	23000	23000	23000
HG-D	FW	GE	mg/L	07/22/71	07/22/71	1	0		<	0.00002	<	0.00002		0.00002	0.00002
HG-T	FW	GE	mg/L	07/22/71	07/22/71	1	0		<	0.00002	<	0.00002		0.00002	0.00002
HG-T	SO	SE	ug/g	09/30/85	09/30/85	1	0		<	0.05	<	0.05		0.05	0.05
K--D	FW	GE	mg/L	07/22/71	03/31/82	21	21	0.13		3.8		3.3	3.62	3.7	3.7
K--E	FW	GE	mg/L	09/13/99	09/13/99	2	2	0.07		3.2		3.1	3.15	3.15	3.15
MG-E	FW	GE	mg/L	09/13/99	09/13/99	2	2	0.35		14.2		13.7	13.95	13.95	13.95
MG-T	FW	GE	mg/L	07/22/71	03/22/94	35	35	0.86		17.5		13.7	16.11	16.2	17
MG-T	SO	SE	ug/g	09/30/85	09/30/85	1	1	0		7230		7230	7230	7230	7230
MN-D	FW	GE	mg/L	07/22/71	07/22/71	1	1	0		0.01		0.01	0.01	0.01	0.01
MN-T	SO	SE	ug/g	09/30/85	09/30/85	1	1	0		1030		1030	1030	1030	1030

MN-T	FW	GE	mg/L	10/31/85	03/22/94	2	2	0.01		0.02		0.01	0.02	0.02	0.02
MO-T	FW	GE	mg/L	10/31/85	03/22/94	2	0		<	0.01	<	0.004		0.007	0.007
MO-T	SO	SE	ug/g	09/30/85	09/30/85	1	1	0		17		17	17	17	17
NA-D	FW	GE	mg/L	07/22/71	03/31/82	32	32	0.58		18		15.4	16.48	16.4	17.2
NA-E	FW	GE	mg/L	09/13/99	09/13/99	2	2	0.28		15.1		14.7	14.9	14.9	14.9
NI-D	FW	GE	mg/L	07/22/71	07/22/71	1	0		<	0.01	<	0.01		0.01	0.01
NI-T	FW	GE	mg/L	10/31/85	03/22/94	2	0		<	0.05	<	0.01		0.03	0.03
NI-T	SO	SE	ug/g	09/30/85	09/30/85	1	1	0		25		25	25	25	25
P--D	FW	GE	mg/L	04/24/75	09/13/00	97	94	0.04	<	0.196	<	0.002	0.04	0.029	0.106
P--T	FW	GE	mg/L	07/22/71	09/13/00	105	105	0.04		0.2		0.005	0.06	0.045	0.118
P--T	SO	SE	ug/g	09/30/85	09/30/85	1	1	0		1300		1300	1300	1300	1300
PB-D	FW	GE	mg/L	07/22/71	07/22/71	1	0		<	0.003	<	0.003		0.003	0.003
PB-T	FW	GE	mg/L	10/31/85	03/22/94	2	0		<	0.1	<	0.03		0.065	0.065
PB-T	SO	SE	ug/g	09/30/85	09/30/85	1	1	0		34		34	34	34	34
S--T	SO	SE	ug/g	09/30/85	09/30/85	1	1	0		7020		7020	7020	7020	7020
SB-T	FW	GE	mg/L	03/22/94	03/22/94	1	0		<	0.02	<	0.02		0.02	0.02
SE-T	SO	SE	ug/g	09/30/85	09/30/85	1	1	0		20		20	20	20	20
SE-T	FW	GE	mg/L	03/22/94	03/22/94	1	0		<	0.03	<	0.03		0.03	0.03
SI-E	FW	GE	mg/L	09/13/99	09/13/99	2	2	0.53		1.09		0.34	0.72	0.72	0.72
SI-T	FW	GE	mg/L	03/22/94	03/22/94	1	0		<	0.8	<	0.8		0.8	0.8
SN-T	FW	GE	mg/L	03/22/94	03/22/94	1	0		<	0.02	<	0.02		0.02	0.02

SN-T	SO	SE	ug/g	09/30/85	09/30/85	1	1	0		25		25	25	25	25
SR-T	FW	GE	mg/L	03/22/94	03/22/94	1	1	0		0.299		0.299	0.299	0.299	0.299
SR-T	SO	SE	ug/g	09/30/85	09/30/85	1	1	0		192		192	192	192	192
TE-T	FW	GE	mg/L	03/22/94	03/22/94	1	0		<	0.02	<	0.02		0.02	0.02
TI-T	FW	GE	mg/L	03/22/94	03/22/94	1	0		<	0.003	<	0.003		0.003	0.003
TL-T	FW	GE	mg/L	03/22/94	03/22/94	1	0		<	0.03	<	0.03		0.03	0.03
V--T	FW	GE	mg/L	10/31/85	03/22/94	2	0		<	0.01	<	0.003		0.007	0.007
ZN-D	FW	GE	mg/L	07/22/71	07/22/71	1	0		<	0.005	<	0.005		0.005	0.005
ZN-T	FW	GE	mg/L	10/31/85	03/22/94	2	1	0.01	<	0.02	<	0.01	0.02	0.015	0.015
ZN-T	SO	SE	ug/g	09/30/85	09/30/85	1	1	0		72		72	72	72	72
ZR-T	FW	GE	mg/L	03/22/94	03/22/94	1	0		<	0.003	<	0.003		0.003	0.003

Appendix Table 4: Wood Lake at Deep Center (Site 0500848)

Code:80	Description:SOUTHERN INTERIOR, PENTICTON														
Parameter. Code	Smpl St Cd	Smpl Desc Cd	Unit	Start Date	End Date	Data Points	Data Points Used	Std. Dev.	Max Result Letter	Max Result	Min Result Letter	Min Result	Mean	Median	90th Percentile
Color - True	FW	GE	Col.unit	03/28/90	04/06/93	4	1	0	<	5	<	5	5	5	5
pH	FW	GE	pH units	02/24/83	09/13/00	575	575	1.30		9.25		0.09	7.96	8.2	8.7
Residue Total	FW	GE	mg/L	04/01/87	03/28/90	58	58	9		218		176	189	188	199
Residue	F	GE	mg/L	06/17	01/21	48	48	8		126		90	108	108	118

- T Fixed	W			/87	/88										
Residue Diss. T.	F W	GE	mg/L	04/01 /87	03/28 /90	58	58	8		217		175	188	188	197
Residue Non-Filt.	F W	GE	mg/L	06/17 /87	03/28 /90	49	38	1	<	6	<	1	2	1	2
Residue Nonfilt. Fix.	F W	GE	mg/L	06/17 /87	01/21 /88	48	3	0	<	3	<	1	2	1	1
Spec. Conductance	F W	GE	uS/cm	02/24 /83	09/13 /00	317	317	72.529		380		0.341	317.164	335	357
Temperature	F W	GE	C	04/11 /85	09/13 /00	535	535	5.8		26		1.8	9.8	7.4	18.9
DO	F W	GE	mg/L	04/11 /85	09/11 /95	528	524	4.6	>	17.6	>	0.0	8.7	9.8	14
Turbidity	F W	GE	NTU	04/04 /89	04/06 /93	5	5	0.6		1.6		0.3	0.9	0.8	1.5
Secchi Depth	F W	GE	m	02/24 /83	09/13 /00	57	57	2.3		13.1		2.5	6.4	6	8.9
Color - TAC	F W	GE	TAC	02/24 /83	03/04 /87	11	11	3		10		1	4	3	7
Residue T - Volatile	SO	SE	%(W/W)	09/30 /85	08/20 /92	23	23	2.0		22.9		14.9	17.8	17.4	20.4
P Alkalinity - 8.3	F W	GE	mg/L	03/26 /86	04/06 /93	104	59	2.8	<	9.7	<	0.5	5.1	2.5	7.2
T Alkalinity - 4.5	F W	GE	mg/L	02/24 /83	03/01 /00	164	164	6		155		124	138	139	146
Fluoride - D	F W	GE	mg/L	03/10 /99	09/13 /99	3	3	0.03		0.17		0.12	0.15	0.16	0.16
Hardness T: CaCO3	F W	GE	mg/L	03/13 /84	03/13 /84	1	1	0		135		135	135	135	135
Nitrate N - T	F W	GE	mg/L	02/24 /83	09/12 /84	8	6	0.11	<	0.32	<	0.02	0.26	0.23	0.31
T Org. Nitrogen	F W	GE	mg/L	02/24 /83	02/23 /95	9	9	0.05		0.4		0.26	0.33	0.33	0.39
TKN	F W	GE	mg/L	02/24 /83	09/11 /95	100	100	0.07		0.65		0.26	0.38	0.38	0.46

TKN	SO	SE	ug/g	09/30/85	08/20/92	23	23	1549		10600		3030	5629	5480	7050
T. Nitrogen	FW	GE	mg/L	02/24/83	09/13/00	27	27	0.14		0.79		0.34	0.51	0.46	0.73
COD	FW	GE	mg/L	08/18/87	09/16/87	36	36	3		24		13	18	18	22
Carbon - T Inorg.	FW	GE	mg/L	04/01/87	03/28/90	48	48	3		42		31	36	35	40.5
Carbon - T Inorg.	SO	SE	ug/g	09/30/85	08/20/92	25	25	6304		22500		2100	8589	7000	15700
Sulphides - T	FW	GE	mg/L	09/19/90	09/21/92	2	0		<	0.5	<	0.5		0.5	0.5
Acidity - 8.3	FW	GE	mg/L	02/24/83	04/06/93	16	11	2.3	<	8.7	<	0.5	2.9	1.1	4.9
Acidity - 4.5	FW	GE	mg/L	09/19/90	09/21/92	6	0		<	0.5	<	0.5		0.5	0.5
Chlorophyll A	FW	GE	mg/L	02/24/83	09/12/84	4	0		M	0.0065	M	0.0015		0.0023	0.0046
Chlorophyll A	FW	GE	ug/L	03/07/86	09/13/00	57	8	0.0029	M	0.0142	<	0.0002	0.0067	0.0033	0.0074
Chlorophyll A	PT	PH	ug/L	04/11/85	11/23/88	4	0		M	0.0076	M	0.0027		0.0039	0.0060
Fecal Coliform	FW	GE	CFU/100mL	03/02/88	04/09/97	15	2	1	<	2	<	0	0	2	2
Fecal Coliform	FW	GE	MPN	02/24/83	03/04/87	4	0		<	2	<	2		2	2
Br - D	FW	GE	mg/L	03/10/99	09/13/00	7	0		<	0.05	<	0.05		0.05	0.05
Cl - D	FW	GE	mg/L	02/24/83	09/13/00	40	40	1.95		9.82		3.7	5.51	4.5	9.48
Fluoride - D	FW	GE	mg/L	03/28/90	09/13/00	5	5	0.02		0.24		0.2	0.21	0.21	0.22
N - D Ammonia	FW	GE	mg/L	02/24/83	09/13/00	222	141	0.075	<	0.444	<	0.003	0.060	0.007	0.106
N - NO2 + NO3 - D	FW	GE	mg/L	02/24/83	09/13/00	226	114	0.093	<	0.388	<	0.002	0.140	0.02	0.23
N - NO3 - D	FW	GE	mg/L	02/23/95	09/13/00	8	7	0.080	<	0.217	<	0.002	0.104	0.08	0.209

N - NO2 - D	FW	GE	mg/L	02/24/83	09/13/00	187	36	0.017	<	0.15	<	0.002	0.026	0.005	0.009
Ortho P - D	FW	GE	mg/L	01/23/86	09/13/00	235	136	0.047	<	0.207	<	0.001	0.053	0.013	0.108
Silica Reactive - D	FW	GE	mg/L	02/24/83	09/13/00	61	43	1.1	<	4	<	0.1	1.9	1.1	3.4
Sulphate - D	FW	GE	mg/L	02/24/83	09/13/00	123	123	0.9		23.1		18	21.5	21.7	22.4
Total Hardness	FW	GE	mg/L	03/10/99	03/01/00	4	4	8		147		127	138	138	144
AG-T	FW	GE	mg/L	03/22/94	03/10/99	2	0		<	0.03	<	0.01		0.02	0.02
AG-T	FW	GE	ug/L	03/01/00	09/13/00	14	0		<	0.00002	<	0.00002		0.00002	0.00002
AL-D	FW	GE	mg/L	04/30/87	11/09/87	68	68	0.02		0.18		0.07	0.10	0.1	0.13
AL-T	FW	GE	mg/L	02/24/83	03/10/99	42	36	0.05	<	0.26	<	0.02	0.11	0.1	0.16
AL-T	FW	GE	ug/L	03/01/00	09/13/00	14	13	0.0008	<	0.0032	<	0.0002	0.0023	0.002	0.003
AL-T	SO	SE	ug/g	09/30/85	08/20/92	23	23	9130		38300		7320	25297	22200	37100
AS-D	FW	GE	mg/L	04/30/87	04/04/89	20	0		<	0.3	<	0.001		0.3	0.3
AS-T	FW	GE	mg/L	02/24/83	03/10/99	15	0		<	0.3	<	0.001		0.25	0.3
AS-T	FW	GE	ug/L	03/01/00	09/13/00	14	14	0.0001		0.0005		0.0003	0.0004	0.0004	0.0005
AS-T	SO	SE	ug/g	09/30/85	08/20/92	23	1	4.5	<	25	<	3.4	3.4	25	25
B--D	FW	GE	mg/L	04/30/87	04/04/89	78	20	0.00	<	0.03	<	0.01	0.01	0.01	0.01
B--T	FW	GE	ug/L	03/01/00	09/13/00	14	14	0.0024		0.023		0.0169	0.0197	0.0197	0.022
B--T	FW	GE	mg/L	03/22/94	03/10/99	2	1	0.01	<	0.04	<	0.03	0.03	0.04	0.04
BA-D	FW	GE	mg/L	04/30/87	04/04/89	78	78	0.00		0.03		0.01	0.02	0.02	0.02
BA-T	FW	GE	mg/L	03/28/90	03/10/99	3	3	0.002		0.02		0.017	0.018	0.018	0.018

BA-T	FW	GE	ug/L	03/01/00	09/13/00	14	14	0.0018		0.0218		0.0146	0.0166	0.0169	0.0174
BA-T	SO	SE	ug/g	09/30/85	08/20/92	23	23	39		258		136	198	186	244
BE-T	FW	GE	mg/L	03/22/94	03/10/99	2	0		<	0.001	<	0.001		0.001	0.001
BE-T	FW	GE	ug/L	03/01/00	09/13/00	14	7	0.000007	<	0.000022	<	0.000002	0.000012	0.000003	0.000016
BI-T	FW	GE	mg/L	03/22/94	03/22/94	1	0		<	0.02	<	0.02		0.02	0.02
BI-T	FW	GE	ug/L	03/01/00	09/13/00	14	0		<	0.00002	<	0.00002		0.00002	0.00002
C--T	SO	SE	ug/g	09/30/85	08/20/92	25	25	17472		107000		34200	53952	54400	74900
C--T	FW	GE	mg/L	04/01/87	03/28/90	48	48	3		44		34	39	39	43
CA-D	FW	GE	mg/L	04/30/87	04/04/89	78	78	3.3		34.5		23.4	29.5	31.1	32.7
CA-E	FW	GE	mg/L	03/10/99	03/01/00	5	5	2.6		35.5		28.4	31.8	31.2	32.7
CA-T	FW	GE	mg/L	02/24/83	09/13/00	216	216	4.0		59.5		19.2	29.6	29.9	33.3
CA-T	SO	SE	ug/g	09/30/85	08/20/92	23	23	40852		132000		9330	60982	67000	106000
CD-D	FW	GE	mg/L	04/30/87	04/04/89	78	0		<	0.01	<	0.0005		0.01	0.01
CD-T	FW	GE	mg/L	02/24/83	03/10/99	202	2	0.0009	<	0.01	<	0.0005	0.01	0.01	0.01
CD-T	FW	GE	ug/L	03/01/00	09/13/00	14	11	0.00002	<	0.00005	<	0.00001	0.00003	0.00002	0.00005
CD-T	SO	SE	ug/g	09/30/85	08/20/92	23	0		<	1	<	1		1	1
CO-D	FW	GE	mg/L	04/30/87	04/04/89	78	0		<	0.1	<	0.1		0.1	0.1
CO-T	FW	GE	mg/L	02/24/83	03/10/99	202	0		<	0.1	<	0.004		0.1	0.1
CO-T	FW	GE	ug/L	03/01/00	09/13/00	14	7	0.000035	<	0.000081	<	0.000005	0.000072	0.000036	0.000074
CO-T	SO	SE	ug/g	09/30/85	08/20/92	23	11	5	<	30	<	10	16	10	17
CR-D	FW	GE	mg/L	04/30/87	04/04/89	78	0		<	0.01	<	0.01		0.01	0.01

CR-T	FW	GE	mg/L	02/24/83	03/10/99	202	16	0.002	<	0.04	<	0.003	0.011	0.01	0.01
CR-T	FW	GE	ug/L	03/01/00	09/13/00	14	14	0.0013		0.0036		0.0003	0.0018	0.0022	0.0033
CR-T	SO	SE	ug/g	09/30/85	08/20/92	23	23	8		38		12	20	15	30
CU-D	FW	GE	mg/L	04/30/87	04/04/89	78	1	0.004	<	0.01	<	0.001	0.001	0.01	0.01
CU-T	SO	SE	ug/g	09/30/85	08/20/92	23	23	10		49		22	34	32	48
CU-T	FW	GE	ug/L	03/01/00	09/13/00	14	14	0.00009		0.00057		0.00029	0.00044	0.00042	0.00054
CU-T	FW	GE	mg/L	02/24/83	03/10/99	202	35	0.005	<	0.04	<	0.001	0.013	0.01	0.01
FE-D	FW	GE	mg/L	04/30/87	04/04/89	78	24	0.039	<	0.35	<	0.005	0.030	0.01	0.02
FE-T	FW	GE	mg/L	02/24/83	09/13/00	216	188	0.039	<	0.38	<	0.007	0.042	0.03	0.07
FE-T	SO	SE	ug/g	09/30/85	08/20/92	23	23	15797		61100		17000	34657	26700	56400
HG-T	FW	GE	mg/L	08/22/88	03/28/90	3	0		<	0.00005	<	0.00005		0.00005	0.00005
HG-T	SO	SE	ug/g	09/30/85	09/30/85	1	0		<	0.05	<	0.05		0.05	0.05
K--D	FW	GE	mg/L	02/24/83	04/06/93	19	19	0.1		3.4		2.9	3.1	3.1	3.3
K--E	FW	GE	mg/L	03/10/99	03/01/00	5	5	0.1		3.2		3	3.1	3.1	3.1
K--T	FW	GE	mg/L	03/10/99	09/13/00	15	15	0.1		3.1		2.7	2.9	2.9	3
LI-T	FW	GE	ug/L	03/01/00	09/13/00	14	14	0.00017		0.0045		0.00401	0.00427	0.00428	0.00448
MG-D	FW	GE	mg/L	04/30/87	04/04/89	78	78	0.9		16.7		13.2	15.0	15.2	16.1
MG-E	FW	GE	mg/L	03/10/99	03/01/00	5	5	0.2		14.2		13.7	14.0	14.1	14.1
MG-T	FW	GE	mg/L	02/24/83	03/10/99	202	202	1.00		16.8		7.36	15.17	15.2	16.2
MG-T	FW	GE	ug/L	03/01/00	09/13/00	13	13	0.7		14.2		12.7	13.5	13.9	14.1
MG-T	SO	SE	ug/g	09/30/85	08/20/92	23	23	2183		12100		5700	8645	7570	11700

MN-D	FW	GE	mg/L	04/30/87	04/04/89	78	19	0.12	<	0.48	<	0.01	0.23	0.01	0.27
MN-T	SO	SE	ug/g	09/30/85	08/20/92	23	23	749		4900		1290	1904	1700	2210
MN-T	FW	GE	ug/L	03/01/00	09/13/00	14	14	0.23668		0.898		0.00027	0.07631	0.01665	0.0254
MN-T	FW	GE	mg/L	02/24/83	03/10/99	202	109	0.20	<	0.93	<	0.01	0.17	0.01	0.32
MO-D	FW	GE	mg/L	04/30/87	04/04/89	78	11	0.0038	<	0.03	<	0.0005	0.0166	0.01	0.01
MO-T	FW	GE	mg/L	02/24/83	03/10/99	202	84	0.0041	<	0.03	<	0.0024	0.0138	0.01	0.02
MO-T	FW	GE	ug/L	03/01/00	09/13/00	14	14	0.00008		0.00259		0.00235	0.00245	0.00242	0.00255
MO-T	SO	SE	ug/g	09/30/85	08/20/92	23	23	7		28		1	8	6	14
NA-D	FW	GE	mg/L	02/24/83	04/06/93	67	67	0.3		15.6		14.1	14.9	14.9	15.2
NA-E	FW	GE	mg/L	03/10/99	03/01/00	5	5	0.3		15.1		14.3	14.8	14.9	15
NA-T	FW	GE	mg/L	03/10/99	09/13/00	15	15	0.3		14.3		13	13.5	13.4	13.8
NI-D	FW	GE	mg/L	04/30/87	04/04/89	78	0		<	0.05	<	0.05		0.05	0.05
NI-T	SO	SE	ug/g	09/30/85	08/20/92	23	23	10		45		18	29	25	43
NI-T	FW	GE	ug/L	03/01/00	09/13/00	14	14	0.00023		0.0018		0.00124	0.0015	0.0015	0.00178
NI-T	FW	GE	mg/L	02/24/83	03/10/99	202	2	0.01	<	0.11	<	0.01	0.09	0.05	0.05
P--D	FW	GE	mg/L	02/24/83	09/13/00	302	298	0.049	<	0.243	<	0.002	0.041	0.02	0.119
P--T	FW	GE	mg/L	02/24/83	09/13/00	326	315	0.051	<	0.253	<	0.004	0.053	0.035	0.133
P--T	SO	SE	ug/g	09/30/85	08/20/92	23	23	354		1640		520	958	894	1480
PB-D	FW	GE	mg/L	04/30/87	04/04/89	78	0		<	0.1	<	0.001		0.1	0.1
PB-T	FW	GE	mg/L	02/24/83	03/10/99	202	2	0.011	<	0.2	<	0.001	0.15	0.1	0.1
PB-T	FW	GE	ug/L	03/01/00	09/13/00	14	9	0.00001	<	0.00003	<	0.00001	0.00002	0.00001	0.00003

PB-T	SO	SE	ug/g	09/30/85	08/20/92	23	20	11	<	46	<	10	24	20	37
S--T	SO	SE	ug/g	09/30/85	09/30/85	1	1	0		10300		10300	10300	10300	10300
S--T	FW	GE	mg/L	03/10/99	09/13/00	8	8	0.13		6.71		6.23	6.46	6.47	6.62
SB-T	FW	GE	mg/L	03/22/94	03/10/99	2	0		<	0.06	<	0.02		0.04	0.04
SB-T	FW	GE	ug/L	03/01/00	09/13/00	14	7	0.000024	<	0.000059	<	0.000005	0.000051	0.000025	0.000054
SE-T	FW	GE	mg/L	03/22/94	03/10/99	2	0		<	0.06	<	0.03		0.045	0.045
SE-T	FW	GE	ug/L	03/01/00	09/13/00	14	8	0.0001	<	0.0004	<	0.0002	0.0003	0.0002	0.0004
SE-T	SO	SE	ug/g	09/30/85	08/20/92	23	1	2	<	21	<	10	21	10	10
SI-E	FW	GE	mg/L	03/10/99	03/01/00	5	5	0.563		1.44		0.11	0.444	0.19	0.33
SI-T	FW	GE	mg/L	03/22/94	09/13/00	16	14	0.429	<	1.64	<	0.23	0.564	0.39	1.205
SN-T	SO	SE	ug/g	09/30/85	09/30/85	1	1	0		43		43	43	43	43
SN-T	FW	GE	ug/L	03/01/00	09/13/00	14	0		<	0.00001	<	0.00001		0.00001	0.00001
SN-T	FW	GE	mg/L	03/22/94	03/10/99	2	0		<	0.06	<	0.02		0.04	0.04
SR-T	FW	GE	mg/L	03/22/94	03/10/99	2	2	0.032		0.346		0.301	0.324	0.324	0.324
SR-T	FW	GE	ug/L	03/01/00	09/13/00	14	14	0.007		0.332		0.31	0.320	0.320	0.329
SR-T	SO	SE	ug/g	09/30/85	08/20/92	23	23	141		531		83	244	255	371
TE-T	FW	GE	mg/L	03/22/94	03/22/94	1	0		<	0.02	<	0.02		0.02	0.02
TI-T	FW	GE	mg/L	03/22/94	09/13/00	16	4	0.002	<	0.009	<	0.002	0.005	0.002	0.004
TL-T	FW	GE	mg/L	03/22/94	03/22/94	1	0		<	0.03	<	0.03		0.03	0.03
TL-T	FW	GE	ug/L	03/01/00	09/13/00	14	7	0.000045	<	0.00013	<	0.000002	0.000082	0.000031	0.000090
U--T	FW	GE	ug/L	03/01/00	09/13/00	14	14	0.00034		0.00335		0.00237	0.00294	0.00279	0.00335

V--D	FW	GE	mg/L	04/30/87	04/04/89	78	2	0	<	0.01	<	0.01	0.01	0.01	0.01
V--T	FW	GE	mg/L	02/24/83	03/10/99	202	76	0.009	<	0.07	<	0.003	0.025	0.01	0.03
V--T	FW	GE	ug/L	03/01/00	09/13/00	14	14	0.00088		0.0046		0.00111	0.00155	0.00131	0.00149
V--T	SO	SE	ug/g	08/20/92	08/20/92	22	22	19		73		22	44	37	70
ZN-D	FW	GE	mg/L	04/30/87	04/04/89	78	9	0.01	<	0.06	<	0.01	0.02	0.01	0.01
ZN-T	FW	GE	mg/L	02/24/83	03/10/99	202	69	0.031	<	0.44	<	0.002	0.022	0.01	0.02
ZN-T	FW	GE	ug/L	03/01/00	09/13/00	14	13	0.0002	<	0.0008	<	0.0001	0.0003	0.0002	0.0006
ZN-T	SO	SE	ug/g	09/30/85	08/20/92	23	23	20		107		52	79	70	104
ZR-T	FW	GE	mg/L	03/22/94	03/22/94	1	0		<	0.003	<	0.003		0.003	0.003

Appendix Table 5: Kalamalka Lake at South End (Site 0500246)

Code:80	Description:SOUTHERN INTERIOR, PENTICTON														
Parameter. Code	Smpl St Cd	Smpl Desc Cd	Unit	Start Date	End Date	Data Points	Data Points Used	Std. Dev.	Max Result Letter	Max Result	Min Result Letter	Min Result	Mean	Median	90th Percentile
Color - True	FW	GE	Col.unit	04/03/74	07/31/74	4	2	0	<	5	<	5	5	5	5
pH	FW	GE	pH units	05/01/73	09/13/00	347	347	1.718		8.8		0.099	7.775	8.2	8.5
Reidue Total	FW	GE	mg/L	05/01/73	10/08/85	17	17	4		252		236	243	244	246
Residue T- Fixed	FW	GE	mg/L	04/03/74	10/08/85	9	9	12		188		156	168	166	184
Residue Tot. Diss.	FW	GE	mg/L	05/01/73	08/13/79	28	28	7		258		228	240	239	249

Spec. Conductance	FW	GE	uS/cm	04/03/74	09/13/99	383	383	82.722		430		0.398	378.488	400	410
Temperature	FW	GE	C	05/01/73	09/13/00	621	621	6		25		2	9	6	19
DO	FW	GE	mg/L	05/01/73	04/21/97	449	449	1.4		15.4		5.6	11.1	11.0	12.6
Turbidity	FW	GE	NTU	08/07/73	08/13/79	27	27	0.4		2.6		0.3	0.7	0.6	1
Secchi Depth	FW	GE	m	08/07/73	09/13/00	84	84	2.62		13.7		2.95	7.46	6.9	11.5
Color - TAC	FW	GE	TAC	03/08/82	03/05/85	4	1	1	<	3	<	1	3	1	2
Moisture	AN	FI	%	02/07/79	02/07/79	1	1	0.0		59.1		59.1	59.1	59.1	59.1
Moisture	AN	FI	%(W/W)	01/24/88	03/12/88	2	2	9.3		62.5		49.4	56.0	56.0	56.0
P Alkalinity - 8.3	FW	GE	mg/L	07/31/74	11/09/87	21	12	1.6	<	4.7	<	0.5	3.5	2.7	4
T Alkalinity - 4.5	FW	GE	mg/L	05/01/73	09/13/99	44	44	3		154		141	148	148	150
Carbon - T Org.	FW	GE	mg/L	05/01/73	08/20/80	32	26	2	<	7	<	1	4	3	6
Fluoride	FW	GE	mg/L	09/13/99	09/13/99	2	2	0.01		0.22		0.2	0.21	0.21	0.21
Hardness T: Ca CO3	FW	GE	mg/L	02/27/84	02/27/84	1	1	0		156		156	156	156	156
Ammonia N - T	FW	GE	mg/L	05/01/73	08/07/73	4	2	0.00	<	0.01	<	0.01	0.01	0.01	0.01
Nitrate N - D	FW	GE	mg/L	04/02/80	09/12/84	20	15	0.02	<	0.08	<	0.02	0.06	0.06	0.08
T Org. Nitrogen	FW	GE	mg/L	05/01/73	09/12/84	48	48	0.05		0.36		0.12	0.21	0.21	0.275
TKN	FW	GE	mg/L	07/31/74	09/11/95	98	98	0.04		0.36		0.13	0.22	0.21	0.27
T. Nitrogen	FW	GE	mg/L	08/07/73	09/13/00	94	94	0.06		0.42		0.16	0.29	0.29	0.355
Carbon - T Inorg.	FW	GE	mg/L	04/24/75	06/25/85	20	20	1		39		34	37	37	39

Acidity - 8.3	FW	GE	mg/L	04/11/79	03/05/85	8	1	0.2	<	1.1	<	0.5	1.1	0.5	0.8
Acidity - 8.3	PT	PH	ug/L	03/05/85	09/18/86	9	4	0.0008	M	0.0031	M	0.0006	0.0017	0.0015	0.0028
Acidity - 8.3	FW	GE	ug/L	02/26/86	09/13/00	52	15	0.0013	M	0.0051	<	0.0002	0.0023	0.0016	0.0038
Acidity - 8.3	FW	GE	mg/L	08/20/75	09/12/84	21	14	0.0009	M	0.0036	<	0.0005	0.0016	0.0013	0.0026
Phaeophytin A	FW	GE	mg/L	08/13/79	09/07/82	7	0		<	0.0005	<	0.0005		0.0005	0.0005
Phaeophytin A	PT	PH	ug/L	05/27/85	03/24/86	7	0		M	0.0011	<	0.0005		0.0005	0.0005
Fecal Coliform	FW	GE	CFU/100mL	03/02/88	03/22/94	4	1	1	<	2	<	0	0	2	2
Fecal Coliform	FW	GE	MPN	08/07/73	03/04/87	22	1	0	<	2	<	2	2	2	2
Total Coliform	FW	GE	MPN	08/07/73	08/18/81	14	2	2	<	8	<	2	5	2	2
Br - D	FW	GE	mg/L	09/13/99	09/13/99	2	0		<	0.05	<	0.05		0.05	0.05
Cl - D	FW	GE	mg/L	04/03/74	03/01/00	34	34	1.0		4.9		1.5	2.3	1.9	4.2
Fluoride - D	FW	GE	mg/L	04/03/74	07/31/74	4	4	0.01		0.35		0.32	0.34	0.34	0.35
Total Hardness - D	FW	GE	mg/L	05/01/73	07/31/74	5	5	2.6		172		166	167.4	166	167
N - D Ammonia	FW	GE	mg/L	04/03/74	09/13/00	142	69	0.007	<	0.045	<	0.003	0.013	0.005	0.018
N - NO2 + NO3 - D	FW	GE	mg/L	04/24/75	09/13/00	141	109	0.040	<	0.169	<	0.002	0.070	0.056	0.128
N - NO3 - D	FW	GE	mg/L	05/01/73	09/13/99	10	5	0.041	<	0.144	<	0.002	0.063	0.02	0.107
N - NO2 - D	FW	GE	mg/L	08/07/73	09/13/99	109	2	0.001	<	0.006	<	0.002	0.004	0.005	0.005
Ortho P - D	FW	GE	mg/L	08/07/73	09/13/00	15	0		<	0.05	<	0.001		0.003	0.003
Silica Reactive - D	FW	GE	mg/L	05/01/73	03/01/00	89	89	1.2		11.7		4.9	8.4	8.4	9.6

Sulphate - D	FW	GE	mg/L	04/03/74	09/13/99	32	32	1.9		57.2		48	54.4	54.7	56.2
Total Hardness	FW	GE	mg/L	09/13/99	09/13/99	2	2	6		174		166	170	170	170
AG-T	FW	GE	mg/L	03/22/94	03/22/94	1	0		<	0.03	<	0.03		0.03	0.03
AL-T	AN	FI	ug/g	02/07/79	03/12/88	3	2	1	<	3	<	2	3	2	2
AL-T	FW	GE	mg/L	02/28/83	03/22/94	7	3	0.02	<	0.08	<	0.02	0.05	0.02	0.06
AS-T	AN	FI	ug/g	02/07/79	03/12/88	3	0		<	25	<	5		25	25
AS-T	FW	GE	mg/L	02/28/83	03/22/94	7	0		<	0.25	<	0.04		0.25	0.25
B--D	FW	GE	mg/L	04/03/74	07/31/74	4	0		<	0.1	<	0.1		0.1	0.1
B--T	FW	GE	mg/L	03/22/94	03/22/94	1	0		<	0.04	<	0.04		0.04	0.04
BA-T	AN	FI	ug/g	02/07/79	03/12/88	3	0		<	1	<	1		1	1
BA-T	FW	GE	mg/L	03/22/94	03/22/94	1	1	0		0.023		0.023	0.023	0.023	0.023
BE-T	FW	GE	mg/L	03/22/94	03/22/94	1	0		<	0.001	<	0.001		0.001	0.001
BI-T	FW	GE	mg/L	03/22/94	03/22/94	1	0		<	0.02	<	0.02		0.02	0.02
C--T	FW	GE	mg/L	05/27/85	06/25/85	2	2	1		39		38	38.5	38.5	38.5
CA-D	FW	GE	mg/L	05/01/73	07/31/74	5	5	0.4		37.5		36.5	37.0	36.8	37.4
CA-E	FW	GE	mg/L	09/13/99	09/13/99	2	2	1.9		39.6		36.9	38.3	38.3	38.3
CA-T	AN	FI	ug/g	02/07/79	03/12/88	3	3	121		614		397	537	600	600
CA-T	FW	GE	mg/L	04/03/74	03/22/94	32	32	1.5		39.2		33.2	37	37.3	38.9
CD-T	AN	FI	ug/g	02/07/79	03/12/88	3	0		<	1	<	1		1	1
CD-T	FW	GE	mg/L	04/03/74	03/22/94	11	0		<	0.01	<	0.0005		0.01	0.01
CO-T	AN	FI	ug/g	02/07	03/12	3	0		<	10	<	10		10	10

				/79	/88										
CO-T	FW	GE	mg/L	02/28/83	03/22/94	7	0		<	0.1	<	0.004		0.1	0.1
CR-T	AN	FI	ug/g	02/07/79	03/12/88	3	0		<	1	<	1		1	1
CR-T	FW	GE	mg/L	04/03/74	03/22/94	11	1	0.005	<	0.02	<	0.002	0.02	0.01	0.01
CU-T	AN	FI	ug/g	02/07/79	03/12/88	3	3	1		2		1	2	2	2
CU-T	FW	GE	mg/L	04/03/74	03/22/94	11	2	0.006	<	0.02	<	0.001	0.012	0.01	0.01
FE-D	FW	GE	mg/L	05/01/73	05/01/73	1	0		<	0.04	<	0.04		0.04	0.04
FE-T	FW	GE	mg/L	04/03/74	03/22/94	11	0		<	0.1	<	0.01		0.01	0.1
FE-T	AN	FI	ug/g	02/07/79	03/12/88	3	3	6		19		7	12	9	9
HG-T	AN	FI	ug/g	01/24/88	03/12/88	2	2	0.01		0.07		0.06	0.07	0.07	0.07
HG-T	AN	FI	ug/g wet	02/07/79	02/07/79	1	1	0		0.05		0.05	0.05	0.05	0.05
HG-T	FW	GE	mg/L	05/01/73	07/31/74	5	0		<	0.00005	<	0.00005		0.00005	0.00005
K--D	FW	GE	mg/L	04/03/74	03/24/86	22	22	0.1		4.8		4.4	4.6	4.6	4.8
K--E	FW	GE	mg/L	09/13/99	09/13/99	2	2	0.1		4.8		4.7	4.8	4.8	4.8
MG-D	FW	GE	mg/L	05/01/73	07/31/74	5	5	0.7		19.4		17.6	18.2	17.9	18.3
MG-E	FW	GE	mg/L	09/13/99	09/13/99	2	2	0.1		18.2		18	18.1	18.1	18.1
MG-T	AN	FI	ug/g	02/07/79	03/12/88	3	3	136		664		394	521	506	506
MG-T	FW	GE	mg/L	04/03/74	03/22/94	32	32	0.7		19.6		15.8	17.6	17.6	18.25
MN-T	AN	FI	ug/g	02/07/79	03/12/88	3	0		<	1	<	1		1	1
MN-T	FW	GE	mg/L	04/03/74	03/22/94	11	0		<	0.02	<	0.002		0.01	0.02
MO-T	AN	FI	ug/g	02/07/79	03/12/88	3	0		<	1	<	1		1	1

MO-T	FW	GE	mg/L	04/03/74	03/22/94	11	8	0.004	<	0.02	<	0.004	0.009	0.01	0.01
NA-D	FW	GE	mg/L	04/03/74	03/24/86	30	30	0.4		16.9		15.4	16.0	16.1	16.4
NA-E	FW	GE	mg/L	09/13/99	09/13/99	2	2	0.1		16.7		16.5	16.6	16.6	16.6
NI-T	AN	FI	ug/g	02/07/79	03/12/88	3	0		<	5	<	5		5	5
NI-T	FW	GE	mg/L	04/03/74	03/22/94	11	0		<	0.05	<	0.01		0.05	0.05
P--D	FW	GE	mg/L	04/24/75	09/13/00	160	126	0.009	<	0.114	<	0.002	0.006	0.004	0.0075
P--T	AN	FI	ug/g	02/07/79	03/12/88	3	3	924		5060		3220	4187	4280	4280
P--T	FW	GE	mg/L	05/01/73	09/13/00	181	176	0.009	<	0.117	<	0.003	0.009	0.008	0.013
P019	AN	FI	ug/g	01/24/88	03/12/88	2	2	2.1		3.4		0.4	1.9	1.9	1.9
P022	AN	FI	ug/g	01/24/88	03/12/88	2	0		<	0.01	<	0.01		0.01	0.01
PB-T	AN	FI	ug/g	02/07/79	03/12/88	3	0		<	10	<	10		10	10
PB-T	FW	GE	mg/L	04/03/74	03/22/94	11	0		<	0.1	<	0.001		0.1	0.1
SB-T	AN	FI	ug/g	02/07/79	02/07/79	1	0		<	10	<	10		10	10
SB-T	FW	GE	mg/L	03/22/94	03/22/94	1	0		<	0.02	<	0.02		0.02	0.02
SE-T	AN	FI	ug/g	01/24/88	03/12/88	2	0		<	10	<	10		10	10
SE-T	FW	GE	mg/L	03/22/94	03/22/94	1	0		<	0.03	<	0.03		0.03	0.03
SI-E	FW	GE	mg/L	09/13/99	09/13/99	2	2	0.76		4.27		3.19	3.73	3.73	3.73
SI-T	FW	GE	mg/L	03/22/94	03/22/94	1	1	0		3		3	3	3	3
SN-T	FW	GE	mg/L	03/22/94	03/22/94	1	0		<	0.02	<	0.02		0.02	0.02
SR-T	AN	FI	ug/g	02/07/79	03/12/88	3	3	0		1		1	1	1	1
SR-T	FW	GE	mg/L	03/22/94	03/22/94	1	1	0		0.379		0.379	0.379	0.379	0.379

T020	AN	FI	ug/g	01/24/88	03/12/88	2	0		<	0.01	<	0.01		0.01	0.01
TE-T	FW	GE	mg/L	03/22/94	03/22/94	1	0		<	0.02	<	0.02		0.02	0.02
TI-T	AN	FI	ug/g	02/07/79	02/07/79	1	1	0		1		1	1	1	1
TI-T	FW	GE	mg/L	03/22/94	03/22/94	1	0		<	0.003	<	0.003		0.003	0.003
TL-T	FW	GE	mg/L	03/22/94	03/22/94	1	0		<	0.03	<	0.03		0.03	0.03
V--T	AN	FI	ug/g	02/07/79	03/12/88	3	0		<	1	<	1		1	1
V--T	FW	GE	mg/L	02/28/83	03/22/94	7	0		<	0.01	<	0.003		0.01	0.01
ZN-T	AN	FI	ug/g	02/07/79	03/12/88	3	3	1		11		9	10	9	9
ZN-T	FW	GE	mg/L	04/03/74	03/22/94	11	2	0.004	<	0.02	<	0.005	0.018	0.01	0.01
ZR-T	FW	GE	mg/L	03/22/94	03/22/94	1	0		<	0.003	<	0.003		0.003	0.003

Appendix Table 6: Kalamalka Lake Deep Basin (Site 0500847)

Code:80	Description:SOUTHERN INTERIOR, PENTICTON														
Parameter Code	Smpl St Cd	Smpl Desc Cd	Unit	Start Date	End Date	Data Points	Data Points Used	Std. Dev	Max Result Letter	Max Result	Min Result Letter	Min Result	Mean	Median	90th Percentile
Color - True	FW	GE	Col.unit	03/15/90	04/05/93	5	0		<	5	<	5		5	5
pH	FW	GE	pH units	02/28/83	10/26/00	541	541	1.406		9.1		0.083	7.960	8.23	8.51
Residue Total	FW	GE	mg/L	05/27/85	03/19/91	58	58	6		256		229	240	240	248
Residue T-Fixed	FW	GE	mg/L	05/27/85	12/14/87	47	47	7		176		146	158	158	164
Residue	FW	GE	mg/L	04/01	03/19	61	61	6		255		228	239	238	246

Tot. Diss.				/87	/91										
Residue Non-Filt.	FW	GE	mg/L	06/17 /87	03/19 /91	52	37	1	<	3	<	1	1	1	2
Residue Nonfilt. Fix.	FW	GE	mg/L	06/17 /87	11/09 /87	42	0		<	1	<	1		1	1
Spec. Conductance	FW	GE	uS/cm	02/28 /83	10/26 /00	220	220	110.659		440.000		0.397	376.917	410	420
Temperature	FW	GE	C	05/27 /85	09/13 /00	669	669	6		22		3	10	8	19
DO	FW	GE	mg/L	09/18 /85	04/21 /97	653	653	1.74		15.50		0.85	11.54	11.4	14
Turbidity	FW	GE	NTU	04/04 /89	04/05 /93	6	6	0.7		1.5		0.2	0.7	0.3	1.5
Secchi Depth	FW	GE	m	02/28 /83	09/13 /00	58	58	3.33		15.30		3.25	7.46	6	12.65
Color - TAC	FW	GE	TAC	02/28 /83	04/04 /89	7	2	0	<	2	<	1	2	1	1
P Alkalinity - 8.3	FW	GE	mg/L	02/26 /86	04/05 /93	130	78	2.0	<	7.1	<	0.5	4.2	3.3	5.1
T Alkalinity - 4.5	FW	GE	mg/L	02/28 /83	03/01 /00	144	144	3		155		141	147	148	149
Fluoride	FW	GE	mg/L	03/10 /99	09/13 /99	3	3	0.04		0.27		0.20	0.23	0.23	0.23
Hardness T: CaCO3	FW	GE	mg/L	02/27 /84	02/27 /84	1	1	0		153		153	153	153	153
Nitrate N	FW	GE	mg/L	02/28 /83	09/12 /84	8	6	0.03	<	0.11	<	0.02	0.09	0.08	0.11
T Org. Nitrogen	FW	GE	mg/L	02/28 /83	09/12 /84	8	8	0.02		0.25		0.19	0.21	0.21	0.25
TKN	FW	GE	mg/L	02/28 /83	09/11 /95	86	86	0.03		0.33		0.13	0.21	0.21	0.25
Total Nitrogen	FW	GE	mg/L	02/28 /83	10/26 /00	76	76	0.06		0.58		0.21	0.32	0.31	0.37
Carbon - T Inorganic	FW	GE	mg/L	05/27 /85	03/19 /91	54	54	2		40		32	38	38	39

Acidity - 8.3	FW	GE	mg/L	02/28/83	04/05/93	17	9	1.2	<	5.0	<	0.5	1.8	0.5	1.5
Acidity - 4.5	FW	GE	mg/L	09/19/90	09/21/92	6	0		<	0.5	<	0.5		0.5	0.5
Chlorophyll a	FW	GE	mg/L	02/28/83	09/12/84	4	1	0.0005	M	0.0023	M	0.0013	0.0014	0.0015	0.00195
Chlorophyll a	FW	GE	ug/L	02/26/86	09/13/00	74	21	0.0019	M	0.0139	<	0.0002	0.0032	0.0016	0.004
Chlorophyll a	PT	PH	ug/L	02/27/85	11/23/88	5	1	0.0006	M	0.0023	M	0.0008	0.0015	0.002	0.0022
Phaeophytin A	PT	PH	ug/L	05/27/85	09/18/85	2	0		<	0.0005	<	0.0005		0.0005	0.0005
E.coli	FW	GE	CFU/100mL	09/24/98	09/24/98	1	0		<	1	<	1		1	1
Fecal Coliform	FW	GE	CFU/100mL	03/02/88	09/24/98	19	3	1	<	2	<	0	0	2	2
Fecal Coliform	FW	GE	MPN	02/28/83	03/04/87	4	0		<	2	<	2		2	2
Br - D	FW	GE	mg/L	03/10/99	10/26/00	8	0		<	0.05	<	0.05		0.05	0.05
Cl - D	FW	GE	mg/L	02/28/83	10/26/00	32	32	1.07		5.66		2.10	3.20	2.7	4.9
Fuoride - D	FW	GE	mg/L	03/15/90	10/26/00	7	7	0.03		0.34		0.26	0.28	0.28	0.31
N - Ammonia - D	FW	GE	mg/L	02/28/83	10/26/00	136	51	0.004	<	0.031	<	0.004	0.009	0.005	0.01
N - NO2+NO3 - D	FW	GE	mg/L	02/28/83	03/10/99	179	125	0.048	<	0.289	<	0.002	0.083	0.06	0.121
N - NO3 - D	FW	GE	mg/L	03/10/99	10/26/00	8	6	0.084	<	0.250	<	0.002	0.167	0.150	0.204
N - NO2 - D	FW	GE	mg/L	02/28/83	10/26/00	174	4	0.002	<	0.008	<	0.001	0.005	0.005	0.005
Ortho P - D	FW	GE	mg/L	05/27/85	10/26/00	74	3	0.015	<	0.050	<	0.001	0.003	0.003	0.028
Silica Reactive - D	FW	GE	mg/L	02/28/83	09/13/00	74	74	1.1		9.9		4.2	7.6	7.8	8.8
Sulphate - D	FW	GE	mg/L	02/28/83	10/26/00	25	25	1.4		54.5		49.0	52.5	52.9	54
Total	FW	GE	mg/L	03/10	10/26	6	6	7.0		181.2		166.0	172.	170	181.0

Hardness				/99	/00								5		
AG-E	FW	GE	mg/L	10/26/00	10/26/00	1	0		<	0.01	<	0.01		0.01	0.01
AG-T	FW	GE	mg/L	03/22/94	03/10/99	3	0		<	0.03	<	0.01		0.01	0.01
AG-T	FW	GE	ug/L	03/01/00	03/01/00	1	0		<	0.00002	<	0.00002		0.00002	0.00002
AL-D	FW	GE	mg/L	04/01/87	11/09/87	60	58	0.03	<	0.28	<	0.02	0.13	0.13	0.14
AL-E	FW	GE	mg/L	10/26/00	10/26/00	1	0		<	0.05	<	0.05		0.05	0.05
AL-T	FW	GE	mg/L	02/28/83	03/10/99	40	34	0.04	<	0.17	<	0.02	0.11	0.12	0.16
AL-T	FW	GE	ug/L	03/01/00	03/01/00	1	1	0.0000		0.0014		0.0014	0.0014	0.0014	0.0014
AS-D	FW	GE	mg/L	04/01/87	04/04/89	22	1	0.088	<	0.3	<	0.001	0.002	0.3	0.3
AS-E	FW	GE	mg/L	10/26/00	10/26/00	1	0		<	0.05	<	0.05		0.05	0.05
AS-T	FW	GE	mg/L	02/28/83	03/10/99	23	1	0.108	<	0.3	<	0.001	0.001	0.25	0.3
AS-T	FW	GE	ug/L	03/01/00	03/01/00	1	1	0.0000		0.0009		0.0009	0.0009	0.0009	0.0009
B--D	FW	GE	mg/L	04/01/87	04/04/89	106	3	0.00	<	0.01	<	0.01	0.01	0.01	0.01
B--E	FW	GE	mg/L	10/26/00	10/26/00	1	1	0.00		0.01		0.01	0.01	0.01	0.01
B--T	FW	GE	ug/L	03/01/00	03/01/00	1	1	0.00		0.01		0.01	0.01	0.01	0.01
B--T	FW	GE	mg/L	03/22/94	03/10/99	3	1	0.02	<	0.04	<	0.01	0.02	0.02	0.02
BA-D	FW	GE	mg/L	04/01/87	04/04/89	106	106	0.00		0.03		0.01	0.03	0.03	0.03
BA-E	FW	GE	mg/L	10/26/00	10/26/00	1	1	0.000		0.027		0.027	0.027	0.027	0.027
BA-T	FW	GE	mg/L	03/15/90	03/10/99	5	4	0.01	<	0.03	<	0.01	0.03	0.02	0.03
BA-T	FW	GE	ug/L	03/01/00	03/01/00	1	1	0.0000		0.0253		0.0253	0.0253	0.0253	0.0253
BE-E	FW	GE	mg/L	10/26/00	10/26/00	1	0		<	0.001	<	0.001		0.001	0.001

BE-T	FW	GE	mg/L	03/22/94	03/10/99	3	1	0.000	<	0.001	<	0.001	0.001	0.001	0.001
BE-T	FW	GE	ug/L	03/01/00	03/01/00	1	0		<	0.000002	<	0.000002		0.000002	0.000002
BI-T	FW	GE	ug/L	03/01/00	03/01/00	1	0		<	0.00002	<	0.00002		0.00002	0.00002
BI-T	FW	GE	mg/L	03/22/94	03/22/94	1	0		<	0.02	<	0.02		0.02	0.02
C--T	FW	GE	mg/L	05/27/85	03/19/91	54	54	1		43		35	39	39	40
CA-D	FW	GE	mg/L	04/01/87	04/04/89	106	106	2.2		41.2		28.5	37.2	37.6	40
CA-E	FW	GE	mg/L	03/10/99	10/26/00	6	6	2.5		39.5		32.6	37.1	37.2	39.45
CA-T	FW	GE	mg/L	02/28/83	03/01/00	123	123	2.5		44.6		27.0	38.2	38.5	41
CD-D	FW	GE	mg/L	04/01/87	04/04/89	106	0		<	0.01	<	0.0005		0.01	0.01
CD-E	FW	GE	mg/L	10/26/00	10/26/00	1	0		<	0.005	<	0.005		0.005	0.005
CD-T	FW	GE	mg/L	02/28/83	03/10/99	123	0		<	0.01	<	0.0002		0.01	0.01
CD-T	FW	GE	ug/L	03/01/00	03/01/00	1	0		<	0.00001	<	0.00001		0.00001	0.00001
CO-D	FW	GE	mg/L	04/01/87	04/04/89	106	0		<	0.1	<	0.1		0.1	0.1
CO-E	FW	GE	mg/L	10/26/00	10/26/00	1	1	0.000		0.007		0.007	0.007	0.007	0.007
CO-T	FW	GE	mg/L	02/28/83	03/10/99	122	1	0.015	<	0.1	<	0.004	0.007	0.1	0.1
CO-T	FW	GE	ug/L	03/01/00	03/01/00	1	0		<	0.000005	<	0.000005		0.000005	0.000005
CR-D	FW	GE	mg/L	04/01/87	04/04/89	106	0		<	0.01	<	0.01		0.01	0.01
CR-E	FW	GE	mg/L	10/26/00	10/26/00	1	0		<	0.005	<	0.005		0.005	0.005
CR-T	FW	GE	mg/L	02/28/83	03/10/99	123	11	0.002	<	0.020	<	0.001	0.012	0.01	0.01
CR-T	FW	GE	ug/L	03/01/00	03/01/00	1	1	0.0000		0.0004		0.0004	0.0004	0.0004	0.0004
CU-D	FW	GE	mg/L	04/01/87	04/04/89	106	0		<	0.01	<	0.001		0.01	0.01

CU-E	FW	GE	mg/L	10/26/00	10/26/00	1	0		<	0.005	<	0.005		0.005	0.005
CU-T	FW	GE	ug/L	03/01/00	03/01/00	1	1	0.00000		0.00079		0.00079	0.00079	0.00079	0.00079
CU-T	FW	GE	mg/L	02/28/83	03/10/99	123	15	0.0063	<	0.07	<	0.0006	0.0174	0.01	0.01
FE-D	FW	GE	mg/L	04/01/87	04/04/89	106	26	0.010	<	0.090	<	0.005	0.018	0.01	0.01
FE-E	FW	GE	mg/L	10/26/00	10/26/00	1	0		<	0.005	<	0.005		0.005	0.005
FE-T	FW	GE	mg/L	02/28/83	03/01/00	123	94	0.059	<	0.460	<	0.006	0.046	0.02	0.06
HG-T	FW	GE	mg/L	08/22/88	03/15/90	2	0		<	0.00005	<	0.00005		0.00005	0.00005
K--D	FW	GE	mg/L	02/28/83	04/05/93	23	23	0.1		4.8		4.4	4.5	4.5	4.6
K--E	FW	GE	mg/L	03/10/99	10/26/00	6	6	0.3		4.8		3.9	4.6	4.7	4.75
K--T	FW	GE	mg/L	02/23/98	03/01/00	3	3	0.1		4.7		4.5	4.6	4.6	4.6
LI-T	FW	GE	ug/L	03/01/00	03/01/00	1	1	0		0.00608		0.00608	0.00608	0.00608	0.00608
MG-D	FW	GE	mg/L	04/01/87	04/04/89	106	106	0.9		20.2		14.8	18.3	18.4	19.2
MG-E	FW	GE	mg/L	03/10/99	10/26/00	6	6	1.2		20.0		16.1	18.1	18.1	19.1
MG-T	FW	GE	mg/L	02/28/83	03/10/99	122	122	1.1		21.6		11.1	18.9	18.9	19.9
MG-T	FW	GE	ug/L	03/01/00	03/01/00	1	1	0		18.3		18.3	18.3	18.3	18.3
MN-D	FW	GE	mg/L	04/01/87	04/04/89	106	0		<	0.01	<	0.01		0.01	0.01
MN-E	FW	GE	mg/L	10/26/00	10/26/00	1	0		<	0.001	<	0.001		0.001	0.001
MN-T	FW	GE	mg/L	02/28/83	03/10/99	122	5	0.002	<	0.020	<	0.001	0.014	0.01	0.01
MN-T	FW	GE	ug/L	03/01/00	03/01/00	1	1	0.0000		0.0008		0.0008	0.0008	0.0008	0.0008
MO-D	FW	GE	mg/L	04/01/87	04/04/89	106	42	0.0055	<	0.0300	<	0.0005	0.0182	0.01	0.02
MO-E	FW	GE	mg/L	10/26/00	10/26/00	1	1	0		0.01		0.01	0.01	0.01	0.01

MO-T	FW	GE	mg/L	02/28/83	03/10/99	122	78	0.007	<	0.040	<	0.004	0.018	0.01	0.02
MO-T	FW	GE	ug/L	03/01/00	03/01/00	1	1	0.00000		0.00468		0.00468	0.00468	0.00468	0.00468
NA-D	FW	GE	mg/L	02/28/83	04/05/93	55	55	0		17		16	16	16	17
NA-E	FW	GE	mg/L	03/10/99	10/26/00	6	6	0.9		16.7		14.4	16.0	16.4	16.7
NA-T	FW	GE	mg/L	02/23/98	03/01/00	3	3	0.8		17.0		15.5	16.0	15.6	15.6
NI-D	FW	GE	mg/L	04/01/87	04/04/89	106	0		<	0.05	<	0.05		0.05	0.05
NI-E	FW	GE	mg/L	10/26/00	10/26/00	1	0		<	0.02	<	0.02		0.02	0.02
NI-T	FW	GE	mg/L	02/28/83	03/10/99	122	2	0.01	<	0.1	<	0.01	0.08	0.05	0.05
NI-T	FW	GE	ug/L	03/01/00	03/01/00	1	1	0.00000		0.00156		0.00156	0.00156	0.00156	0.00156
P--D	FW	GE	mg/L	02/28/83	10/26/00	232	187	0.008	<	0.125	<	0.002	0.006	0.004	0.007
P--E	FW	GE	mg/L	10/26/00	10/26/00	1	0		<	0.1	<	0.1		0.1	0.1
P--T	FW	GE	mg/L	02/28/83	10/26/00	235	225	0.013	<	0.131	<	0.003	0.009	0.008	0.012
PB-D	FW	GE	mg/L	04/01/87	04/04/89	106	0		<	0.1	<	0.001		0.1	0.1
PB-E	FW	GE	mg/L	10/26/00	10/26/00	1	0		<	0.05	<	0.05		0.05	0.05
PB-T	FW	GE	mg/L	02/28/83	03/10/99	123	0		<	0.1	<	0.0006		0.1	0.1
PB-T	FW	GE	ug/L	03/01/00	03/01/00	1	1	0.0000		0.00004		0.00004	0.00004	0.00004	0.00004
S--E	FW	GE	mg/L	10/26/00	10/26/00	1	1	0.00		17.84		17.84	17.84	17.84	17.84
S--T	FW	GE	mg/L	02/23/98	03/10/99	2	2	0.6		17.7		16.9	17.3	17.3	17.3
SB-E	FW	GE	mg/L	10/26/00	10/26/00	1	0		<	0.05	<	0.05		0.05	0.05
SB-T	FW	GE	mg/L	03/22/94	03/10/99	3	0		<	0.06	<	0.02		0.06	0.06
SB-T	FW	GE	ug/L	03/01/00	03/01/00	1	0		<	0.000005	<	0.000005		0.000005	0.000005

SE-E	FW	GE	mg/L	10/26/00	10/26/00	1	0		<	0.05	<	0.05		0.05	0.05
SE-T	FW	GE	mg/L	03/22/94	03/10/99	3	0		<	0.06	<	0.03		0.06	0.06
SE-T	FW	GE	ug/L	03/01/00	03/01/00	1	1	0.0000		0.0011		0.0011	0.0011	0.0011	0.0011
SI-E	FW	GE	mg/L	03/10/99	10/26/00	6	6	0.50		4.60		3.17	3.82	3.69	4.39
SI-T	FW	GE	mg/L	03/22/94	03/01/00	4	4	0.16		3.66		3.30	3.53	3.58	3.62
SN-E	FW	GE	mg/L	10/26/00	10/26/00	1	0		<	0.05	<	0.05		0.05	0.05
SN-T	FW	GE	ug/L	03/01/00	03/01/00	1	0		<	0.00001	<	0.00001		0.00001	0.00001
SN-T	FW	GE	mg/L	03/22/94	03/10/99	3	0		<	0.06	<	0.02		0.06	0.06
SR-E	FW	GE	mg/L	10/26/00	10/26/00	1	1	0.00		0.45		0.45	0.45	0.45	0.45
SR-T	FW	GE	mg/L	03/22/94	03/10/99	3	3	0.022		0.445		0.402	0.425	0.427	0.427
SR-T	FW	GE	ug/L	03/01/00	03/01/00	1	1	0.000		0.418		0.418	0.418	0.418	0.418
TE-T	FW	GE	mg/L	03/22/94	03/22/94	1	0		<	0.02	<	0.02		0.02	0.02
TI-E	FW	GE	mg/L	10/26/00	10/26/00	1	0		<	0.002	<	0.002		0.002	0.002
TI-T	FW	GE	mg/L	03/22/94	03/01/00	4	0		<	0.003	<	0.002		0.002	0.0025
TL-T	FW	GE	mg/L	03/22/94	03/22/94	1	0		<	0.03	<	0.03		0.03	0.03
U--T	FW	GE	ug/L	03/01/00	03/01/00	1	1	0.0000		0.00308		0.00308	0.00308	0.00308	0.00308
V--D	FW	GE	mg/L	04/01/87	04/04/89	106	4	0.00	<	0.01	<	0.01	0.01	0.01	0.01
V--E	FW	GE	mg/L	10/26/00	10/26/00	1	0		<	0.01	<	0.01		0.01	0.01
V--T	FW	GE	mg/L	02/28/83	03/10/99	122	26	0.010	<	0.050	<	0.003	0.032	0.01	0.03
V--T	FW	GE	ug/L	03/01	03/01	1	1	0.00		0.001		0.001	0.00	0.001	0.001

				/00	/00			000		45		45	145	45	45
ZN-D	FW	GE	mg/L	04/01/87	04/04/89	106	2	0.00	<	0.02	<	0.01	0.02	0.01	0.01
ZN-E	FW	GE	mg/L	10/26/00	10/26/00	1	0		<	0.002	<	0.002		0.002	0.002
ZN-T	FW	GE	mg/L	02/28/83	03/10/99	122	30	0.010	<	0.080	<	0.002	0.022	0.01	0.02
ZN-T	FW	GE	ug/L	03/01/00	03/01/00	1	1	0.0000		0.0006		0.0006	0.0006	0.0006	0.0006
ZR-T	FW	GE	mg/L	03/22/94	03/22/94	1	0		<	0.003	<	0.003		0.003	0.003

Appendix Table 7: Kalamalka Lake South Coldstream Creek (Site 0500461)

Code:80	Description:SOUTHERN INTERIOR, PENTICTON														
Parameter. Code	Smpl St Cd	Smpl Desc Cd	Unit	Start Date	End Date	Data Points	Data Points Used	Std. Dev.	Max Result Letter	Max Result	Min Result Letter	Min Result	Mean	Median	90th Percentile
pH	FW	GE	pH units	04/23/75	09/13/00	272	272	0.31		8.8		7.13	8.17	8.21	8.5
TS	FW	GE	mg/L	05/04/76	10/08/85	9	9	4		250		236	242	240	244
Residue T - Fixed	FW	GE	mg/L	05/27/85	10/08/85	5	5	4		162		152	158	160	160
TDS	FW	GE	mg/L	04/23/75	08/13/79	21	21	6		260		232	240	240	244
Spec. Conductance	FW	GE	uS/cm	04/23/75	09/13/99	341	341	79.6		430		0.4	379.7	400.0	410.0
Temperature	FW	GE	C	04/23/75	10/26/00	589	589	6.2		23.5		2.9	10.6	8.5	19.7
DO	FW	GE	mg/L	08/20/75	09/11/95	462	462	1.6		15.2		3.2	11.0	10.9	13.2
Turbidity	FW	GE	NTU	04/23/75	08/13/79	21	21	0.5		2.3		0.4	1.0	0.9	1.5
Secchi	FW	GE	m	04/23/	10/26/	81	81	2.3		11.1		2.8	6.3	5.6	9.8

Depth				75	00										
Color - TAC	FW	GE	TAC	03/08/82	02/27/85	4	1	0	<	1	<	1	1	1	1
Moisture	AN	FI	%	01/24/84	01/24/84	2	2	6.4		66.1		57	61.6	61.6	61.55
P Alkalinity -8.3	FW	GE	mg/L	04/30/87	11/09/87	20	11	1.7	<	4.6	<	0.5	3.7	2.9	4.5
T Alkalinity -4.5	FW	GE	mg/L	03/08/82	09/13/99	36	36	3		154		141	148	149	151
Carbon-TOrg.	FW	GE	mg/L	04/23/75	08/20/80	24	20	2	<	7	<	1	3	3	5
Fluoride	FW	GE	mg/L	02/23/98	09/13/99	8	8	0.04		0.27		0.15	0.23	0.23	0.265
Hardness T: CaCO3	FW	GE	mg/L	02/27/84	02/27/84	1	1	0.0		19.2		19.2	19.2	19.2	19.2
Nitrate N	FW	GE	mg/L	04/01/80	09/11/84	20	16	0.02	<	0.08	<	0.02	0.05	0.05	0.08
T Org. Nitrogen	FW	GE	mg/L	04/23/75	09/11/84	41	41	0.08		0.49		0.12	0.23	0.2	0.29
TKN	FW	GE	mg/L	04/23/75	09/11/95	92	91	0.07	<	0.52	<	0.04	0.23	0.21	0.285
T Nitrogen	FW	GE	mg/L	04/23/75	10/26/00	64	64	0.08		0.57		0.18	0.29	0.28	0.37
Carbon-T Inorg.	FW	GE	mg/L	04/23/75	06/25/85	22	22	1		39		34	37	37	38.5
Acidity-8.3	FW	GE	mg/L	04/11/79	02/27/85	8	1	0.2	<	1.1	<	0.5	1.1	0.5	0.8
Chlorophyll a	FW	GE	mg/L	08/20/75	09/11/84	23	19	0.0010	M	0.0036	<	0.0005	0.0017	0.0014	0.0029
Chlorophyll a	FW	GE	ug/L	03/25/86	10/26/00	54	19	0.0014	M	0.0059	<	0.0002	0.0023	0.0023	0.0043
Chlorophyll a	PT	PH	ug/L	02/27/85	09/18/86	8	2	0.0006	M	0.0028	M	0.0012	0.0013	0.0019	0.0027
Phaeophytin A	PT	PH	ug/L	05/27/85	10/08/85	6	0		M	0.0026	<	0.0005		0.0005	0.0016
Phaeophytin A	FW	GE	mg/L	08/13/79	09/07/82	7	0		<	0.0005	<	0.0005		0.0005	0.0005
Fecal Coliform	FW	GE	CFU/100mL	03/02/88	03/22/94	4	1	1	<	2	<	0	0	2	2

Fecal Coliform	FW	GE	MPN	04/23/75	03/04/87	20	9	2	<	8	<	2	3	2	4.5
Total Coliform	FW	GE	MPN	04/23/75	08/18/81	12	7	2	<	8	<	2	4	2	4.5
Br-D	FW	GE	mg/L	02/23/98	09/13/99	8	0		<	0.05	<	0.05		0.05	0.05
Cl - D	FW	GE	mg/L	04/23/75	03/01/00	37	37	1.4		7.2		1.5	2.8	2	4.6
N-D Ammonia	FW	GE	mg/L	04/23/75	10/26/00	108	53	0.007	<	0.053	<	0.005	0.012	0.005	0.0165
N-NO2+NO3 -D	FW	GE	mg/L	04/23/75	10/26/00	106	76	0.033	<	0.167	<	0.002	0.057	0.04	0.08
N-NO3 -D	FW	GE	mg/L	02/23/98	09/13/99	8	7	0.045	<	0.122	<	0.002	0.093	0.0895	0.1215
N-NO2 -D	FW	GE	mg/L	04/01/80	09/13/99	67	1	0.000	<	0.005	<	0.005	0.005	0.005	0.005
Ortho P -D	FW	GE	mg/L	05/27/85	10/26/00	27	0		<	0.05	<	0.001		0.001	0.05
Silica Reactive D	FW	GE	mg/L	04/23/75	10/26/00	70	70	0.8		10		6.4	8.4	8.5	9.4
Sulphate - D	FW	GE	mg/L	04/23/75	09/13/99	35	35	2.3		56.4		49	53.5	54.2	55.5
Tot. Hardness	FW	GE	mg/L	02/23/98	09/13/99	5	5	5		176		165	173	176	176
Arochlor 1242	AN	FI	ug/g wet	01/24/84	01/24/84	2	0		<	0.1	<	0.1		0.1	0.1
Arochlor 1254	AN	FI	ug/g wet	01/24/84	01/24/84	2	0		<	0.1	<	0.1		0.1	0.1
Arochlor 1260	AN	FI	ug/g wet	01/24/84	01/24/84	2	0		<	0.1	<	0.1		0.1	0.1
AG-T	FW	GE	mg/L	03/22/94	03/22/94	1	0		<	0.03	<	0.03		0.03	0.03
AL-T	AN	FI	ug/g	01/24/84	01/24/84	2	0		<	2	<	2		2	2
AL-T	FW	GE	mg/L	02/28/83	03/22/94	7	3	0.03	<	0.11	<	0.02	0.07	0.04	0.06
AS-T	AN	FI	ug/g	01/24/84	01/24/84	2	0		<	25	<	25		25	25
AS-T	FW	GE	mg/L	02/28/	03/22/	7	0		<	0.25	<	0.04		0.25	0.25

				83	94										
B--T	AN	FI	ug/g	01/24/84	01/24/84	2	1	0	<	1	<	1	1	1	1
B--T	FW	GE	mg/L	03/22/94	03/22/94	1	0		<	0.04	<	0.04		0.04	0.04
BA-T	AN	FI	ug/g	01/24/84	01/24/84	2	0		<	1	<	1		1	1
BA-T	FW	GE	mg/L	03/22/94	03/22/94	1	1	0.000		0.023		0.023	0.023	0.023	0.023
BE-T	FW	GE	mg/L	03/22/94	03/22/94	1	0		<	0.001	<	0.001		0.001	0.001
BE-T	AN	FI	ug/g	01/24/84	01/24/84	2	0		<	1	<	1		1	1
BI-T	FW	GE	mg/L	03/22/94	03/22/94	1	0		<	0.02	<	0.02		0.02	0.02
C--T	FW	GE	mg/L	05/27/85	06/25/85	2	2	0		38		38	38	38	38
CA-E	FW	GE	mg/L	02/23/98	09/13/99	5	5	1.0		39.1		36.8	38.6	39.1	39.1
CA-T	AN	FI	ug/g	01/24/84	01/24/84	2	2	19		504		477	491	491	491
CA-T	FW	GE	mg/L	04/23/75	03/22/94	29	29	5.94		39.1		5.83	35.85	37	38.6
CD-T	AN	FI	ug/g	01/24/84	01/24/84	2	0		<	1	<	1		1	1
CD-T	FW	GE	mg/L	02/28/83	03/22/94	7	0		<	0.01	<	0.002		0.01	0.01
CO-T	AN	FI	ug/g	01/24/84	01/24/84	2	0		<	10	<	10		10	10
CO-T	FW	GE	mg/L	02/28/83	03/22/94	7	0		<	0.1	<	0.004		0.1	0.1
CR-T	AN	FI	ug/g	01/24/84	01/24/84	2	0		<	1	<	1		1	1
CR-T	FW	GE	mg/L	02/28/83	03/22/94	7	1	0.003	<	0.01	<	0.002	0.002	0.01	0.01
CU-T	FW	GE	mg/L	02/28/83	03/22/94	7	1	0.005	<	0.02	<	0.002	0.02	0.01	0.01
CU-T	AN	FI	ug/g	01/24/84	01/24/84	2	1	0	<	1	<	1	1	1	1
FE-T	AN	FI	ug/g	01/24/84	01/24/84	2	2	5		13		6	10	10	10

FE-T	FW	GE	mg/L	02/28/83	03/22/94	7	3	0.02	<	0.07	<	0.01	0.04	0.01	0.04
HG-T	AN	FI	ug/g wet	01/24/84	01/24/84	2	2	0.01		0.09		0.07	0.08	0.08	0.08
K--D	FW	GE	mg/L	04/05/77	03/25/86	19	19	0.1		4.8		4.5	4.6	4.6	4.7
K--E	FW	GE	mg/L	02/23/98	09/13/99	5	5	0.1		4.9		4.8	4.8	4.8	4.9
MG-E	FW	GE	mg/L	02/23/98	09/13/99	5	5	0.6		19.1		17.9	18.6	19.1	19.1
MG-T	AN	FI	ug/g	01/24/84	01/24/84	2	2	142		615		414	515	515	515
MG-T	FW	GE	mg/L	04/23/75	03/22/94	29	29	3.12		19.5		1.12	17.08	17.6	18.3
MN-T	AN	FI	ug/g	01/24/84	01/24/84	2	0		<	1	<	1		1	1
MN-T	FW	GE	mg/L	02/28/83	03/22/94	7	1	0.003	<	0.01	<	0.002	0.01	0.01	0.01
MO-T	AN	FI	ug/g	01/24/84	01/24/84	2	0		<	1	<	1		1	1
MO-T	FW	GE	mg/L	02/28/83	03/22/94	7	3	0.006	<	0.02	<	0.004	0.017	0.01	0.02
NA-D	FW	GE	mg/L	04/23/75	03/25/86	27	27	0.4		16.8		15.4	16.0	16	16.5
NA-E	FW	GE	mg/L	02/23/98	09/13/99	5	5	0.3		17.1		16.5	16.8	17	17
NI-T	AN	FI	ug/g	01/24/84	01/24/84	2	0		<	5	<	5		5	5
NI-T	FW	GE	mg/L	02/28/83	03/22/94	7	0		<	0.05	<	0.01		0.05	0.05
P--D	FW	GE	mg/L	04/23/75	10/26/00	131	96	0.006	<	0.067	<	0.003	0.006	0.004	0.007
P--T	AN	FI	ug/g	01/24/84	01/24/84	2	2	1358		5970		4050	5010	5010	5010
P--T	FW	GE	mg/L	04/23/75	10/26/00	146	140	0.006	<	0.076	<	0.003	0.009	0.008	0.012
PB-T	AN	FI	ug/g	01/24/84	01/24/84	2	0		<	10	<	10		10	10
PB-T	FW	GE	mg/L	02/28/83	03/22/94	7	0		<	0.1	<	0.03		0.1	0.1
SB-T	FW	GE	mg/L	03/22/94	03/22/94	1	0		<	0.02	<	0.02		0.02	0.02

SE-T	AN	FI	ug/g	01/24/84	01/24/84	2	0		<	10	<	10		10	10
SE-T	FW	GE	mg/L	03/22/94	03/22/94	1	0		<	0.03	<	0.03		0.03	0.03
SI-E	FW	GE	mg/L	02/23/98	09/13/99	5	5	0.30		4.05		3.2	3.62	3.63	3.63
SI-T	FW	GE	mg/L	03/22/94	03/22/94	1	1	0.0		3.1		3.1	3.1	3.1	3.1
SN-T	FW	GE	mg/L	03/22/94	03/22/94	1	0		<	0.02	<	0.02		0.02	0.02
SN-T	AN	FI	ug/g	01/24/84	01/24/84	2	0		<	5	<	5		5	5
SR-T	AN	FI	ug/g	01/24/84	01/24/84	2	2	0		1		1	1	1	1
SR-T	FW	GE	mg/L	03/22/94	03/22/94	1	1	0.000		0.383		0.383	0.383	0.383	0.383
TE-T	AN	FI	ug/g	01/24/84	01/24/84	2	0		<	20	<	20		20	20
TE-T	FW	GE	mg/L	03/22/94	03/22/94	1	0		<	0.02	<	0.02		0.02	0.02
TI-T	AN	FI	ug/g	01/24/84	01/24/84	2	0		<	1	<	1		1	1
TI-T	FW	GE	mg/L	03/22/94	03/22/94	1	0		<	0.003	<	0.003		0.003	0.003
TL-T	AN	FI	ug/g	01/24/84	01/24/84	2	0		<	20	<	20		20	20
TL-T	FW	GE	mg/L	03/22/94	03/22/94	1	0		<	0.03	<	0.03		0.03	0.03
V--T	AN	FI	ug/g	01/24/84	01/24/84	2	0		<	1	<	1		1	1
V--T	FW	GE	mg/L	02/28/83	03/22/94	7	0		<	0.01	<	0.003		0.01	0.01
ZN-T	AN	FI	ug/g	01/24/84	01/24/84	2	2	1		7		6	7	7	7
ZN-T	FW	GE	mg/L	02/28/83	03/22/94	7	2	0.01	<	0.03	<	0.01	0.03	0.01	0.03
ZR-T	FW	GE	mg/L	03/22/94	03/22/94	1	0		<	0.003	<	0.003		0.003	0.003

Appendix Table 8: Kalamalka Lake South of Spray Irrigation (Site 0500580)

Code:80			Name:KALAMALKA L CONTROL SOUTH OF SPRAY IRRIG. - 0500580												
Parmeter Code	Smpl St Cd	Smpl Desc Cd	Unit	Min Start Date	Max End Date	Data Points	Data Points Used	Std. Dev.	Max Result Letter	Maximum Result	Min Result Letter	Minimum Result	Mean	Median	90th Percentile
pH	FW	GE	pH units	27-Feb-85	13-Sep-00	45	45	0.236		8.55		7.5	8.26	8.3	8.5
Residue Total	FW	GE	mg/L	27-May-85	8-Oct-85	5	5	7		250		232	240	240	242
Residue Total Fixed	FW	GE	mg/L	27-May-85	8-Oct-85	5	5	5		168		154	161	160	162
Specific Conductance	FW	GE	uS/cm	27-Feb-85	13-Sep-99	31	31	20		430		335	391	395	403
Temp	FW	GE	C	27-May-85	13-Sep-00	22	22	7.4		23		3	10.9	9.25	19.75
DO	FW	GE	mg/L	2-Mar-88	2-Mar-88	2	2	0		12.6		12.6	12.6	12.6	12.6
Secchi Depth	FW	GE	m	27-May-85	13-Sep-00	19	19	3.8		14.5		3	8.3	8.2	13.5
Colour TAC	FW	GE	TAC	27-Feb-85	27-Feb-85	1	0		<	1	<	1		1	1
Alkalinity	FW	GE	mg/L	26-	5-	10	4	1.31	<	3.6	<	0.5	2.9	0.5	3.45

8.3				Feb-86	Apr-93								5		
Alkalinity Total	FW	GE	mg/L	27-Feb-85	13-Sep-99	18	18	3.5		158		142	148	148	149.5
Fluoride	FW	GE	mg/L	23-Feb-98	13-Sep-99	2	2	0.01		0.25		0.23	0.24	0.24	0.24
Nitrogen Total Kjeldahl	FW	GE	mg/L	27-Feb-85	11-Sep-95	25	25	0.05		0.36		0.14	0.22	0.21	0.27
Nitrogen Total	FW	GE	mg/L	9-Apr-97	13-Sep-00	7	7	0.06		0.37		0.24	0.3	0.31	0.35
Carbon Total Inorg.	FW	GE	mg/L	27-May-85	25-Jun-85	2	2	0		38		38	38	38	38
Acidity 8.3	FW	GE	mg/L	27-Feb-85	4-Apr-89	2	0		<	0.5	<	0.5		0.5	0.5
Chlorophyll A	FW	GE	ug/L	26-Feb-86	13-Sep-00	33	6	0.001	M	0.0047	<	0.0002	0	0.0012	0.0028
Chlorophyll A	PT	PH	ug/L	27-Feb-85	18-Sep-86	9	6	0.0005	M	0.002	M	0.0006	0	0.0013	0.0019
Phaeophytin A	PT	PH	ug/L	27-May-85	24-Mar-86	7	0		M	0.0009	<	0.0005		0.0005	0.0005
E. Coli bacteria	FW	GE	CFU/100 mL	24-Sep-98	24-Sep-98	1	0		<	1	<	1		1	1
Fecal Coliform	FW	GE	CFU/100 mL	25-Se	24-Se	6	1	0.8	<	2	<	0	0	1	2

				p-89	p-98										
Br-D	FW	GE	mg/L	23-Feb-98	13-Sep-99	2	0		<	0.05	<	0.05		0.05	0.05
Cl-D	FW	GE	mg/L	27-Feb-85	13-Sep-00	7	7	1.7		7.3		2.5	4.44	4.4	5.69
Nitrogen Ammonia -D	FW	GE	mg/L	27-Feb-85	13-Sep-00	31	8	0.008	<	0.05	<	0.005	0.01	0.005	0.008
Nitrogen NO2+NO3 - D	FW	GE	mg/L	27-Feb-85	13-Sep-00	30	17	0.04	<	0.172	<	0.003	0.08	0.03	0.1045
Nitrogen NO3 -D	FW	GE	mg/L	23-Feb-98	13-Sep-99	2	1	0.091	<	0.13	<	0.002	0.13	0.066	0.066
Nitrogen NO2 - D	FW	GE	mg/L	27-Feb-85	13-Sep-99	21	0		<	0.005	<	0.005		0.005	0.005
Phosphorus ortho - D	FW	GE	mg/L	27-May-85	13-Sep-00	6	0		<	0.05	<	0.001		0.002	0.05
Silica Reactive - D	FW	GE	mg/L	27-Feb-85	1-Mar-00	26	26	0.77		8.8		5.4	7.75	7.75	8.5
Sulphate - D	FW	GE	mg/L	27-Feb-85	13-Sep-99	5	5	2.9		54.6		48	51.6	53	53.5
Hardness - T	FW	GE	mg/L	23-Feb-98	13-Sep-99	2	2	7.1		176		166	171	171	171
AL-T	FW	GE	mg/L	27-Feb-	24-Mar-	4	0		<	0.02	<	0.02		0.02	0.02

				85	86										
AS-T	FW	GE	mg/L	27-Feb-85	24-Mar-86	4	0		<	0.25	<	0.25		0.25	0.25
C--T	FW	GE	mg/L	27-May-85	25-Jun-85	2	2	0		38		38	38	38	38
CA-E	FW	GE	mg/L	23-Feb-98	13-Sep-99	2	2	1.6		39		36.8	37.9	37.9	37.9
CA-T	FW	GE	mg/L	27-Feb-85	24-Mar-86	4	4	3.3		40.2		32.9	37.7	38.85	39.55
CD-T	FW	GE	mg/L	27-Feb-85	24-Mar-86	4	0		<	0.01	<	0.01		0.01	0.01
CO-T	FW	GE	mg/L	27-Feb-85	24-Mar-86	4	0		<	0.1	<	0.1		0.1	0.1
CR-T	FW	GE	mg/L	27-Feb-85	24-Mar-86	4	0		<	0.01	<	0.01		0.01	0.01
CU-T	FW	GE	mg/L	27-Feb-85	24-Mar-86	4	0		<	0.01	<	0.01		0.01	0.01
FE-T	FW	GE	mg/L	27-Feb-85	24-Mar-86	4	1	0.01	<	0.03	<	0.01	0.03	0.01	0.02
K--D	FW	GE	mg/L	27-Feb-85	2-Mar-88	3	3	0.12		4.7		4.5	4.63	4.7	4.7
K--E	FW	GE	mg/L	23-Feb-98	13-Sep-99	2	2	0.07		4.9		4.8	4.85	4.85	4.85

MG-E	FW	GE	mg/L	23-Feb-98	13-Sep-99	2	2	0.71		19.1		18.1	18.6	18.6	18.6
MG-T	FW	GE	mg/L	27-Feb-85	24-Mar-86	4	4	1.0		19.8		17.3	18.6	18.65	19.3
MN-T	FW	GE	mg/L	27-Feb-85	24-Mar-86	4	0		<	0.01	<	0.01		0.01	0.01
MO-T	FW	GE	mg/L	27-Feb-85	24-Mar-86	4	3	0	<	0.01	<	0.01	0.01	0.01	0.01
NA-D	FW	GE	mg/L	27-Feb-85	24-Mar-86	2	2	0		16.4		16.4	16.4	16.4	16.4
NA-E	FW	GE	mg/L	23-Feb-98	13-Sep-99	2	2	0.7		17.1		16.5	16.8	16.8	16.8
NI-T	FW	GE	mg/L	27-Feb-85	24-Mar-86	4	0		<	0.05	<	0.05		0.05	0.05
P--D	FW	GE	mg/L	27-Feb-85	13-Sep-00	33	22	0.002	<	0.008	<	0.002	0	0.003	0.006
P--T	FW	GE	mg/L	27-Feb-85	13-Sep-00	36	33	0.003	<	0.013	<	0.003	0.01	0.006	0.0095
PB-T	FW	GE	mg/L	27-Feb-85	24-Mar-86	4	0		<	0.1	<	0.1		0.1	0.1
SI-E	FW	GE	mg/L	23-Feb-98	13-Sep-99	2	2	0.35		3.71		3.22	3.47	3.465	3.465
V--T	FW	GE	mg/L	27-	24-	4	0		<	0.01	<	0.01		0.01	0.01

				Feb-85	Mar-86										
ZN-T	FW	GE	mg/L	27-Feb-85	24-Mar-86	4	0		<	0.01	<	0.01		0.01	0.01

Appendix Table 9: Kalamalka Lake Near Spray Irrigation (Site 0500581)

Code:80		Id	Name:KALAMALKA L NEAR FLOW FROM SPRAY IRRIG. :0500581												
Parameter Code	Smpl Cd	Smpl Desc Cd	Unit	Min Start Date	Max End Date	Data Points	Data Points Used	Std Dev.	Max Result Letter	Max Result	Min Result Letter	Min Result	Mean	Median	90th Percentile
pH	FW	GE	pH units	7-Jul-76	13-Sep-00	141	141	0.3		9		6.9	8.3466	8.4	8.6
Residue Total	FW	GE	mg/L	27-May-85	8-Oct-85	5	5	7.27		248		228	238.4	240	240
Residue Total Fixed	FW	GE	mg/L	27-May-85	8-Oct-85	5	5	12.2		166		136	156.8	162	164
Residue Total Diss	FW	GE	mg/L	7-Jul-76	10-Apr-79	14	14	4.75		246		230	235.29	234	241
Residue Non-Filt.	FW	GE	mg/L	7-Jul-76	15-Nov-77	13	13	0.65		4		2	2.3846	2	3
Specific Conductance	FW	GE	uS/cm	7-Jul-76	13-Sep-99	124	124	15.5		460		290	388.43	388	400
Temperature	FW	GE	C	7-Jul-	13-Se	73	73	6.46		24		2.5	13.144	15	20

				76	p-00										
DO	FW	GE	mg/L	15-Nov-78	2-Mar-88	5	5	0.4		12.4		11.5	12.06	12.2	12.4
Turbidity	FW	GE	NTU	7-Jul-76	9-Nov-81	44	44	0.39		2		0.4	0.8727	0.8	1.35
Secchi Depth	FW	GE	m	7-Jul-76	13-Sep-00	71	69	2.45	M	14.5	M	2.8	7.5543	7.1	10.3
Colour TAC	FW	GE	TAC	27-Feb-85	27-Feb-85	1	1	0		1		1	1	1	1
Alkalinity Phen. pH 8.3	FW	GE	mg/L	7-Jul-76	5-Apr-93	50	41	14.1	<	102	<	0.5	5.9683	3.3	5.45
Altalinity T pH 4.5	FW	GE	mg/L	7-Jul-76	13-Sep-99	63	63	2.33		151		141	146.06	146	149
Carbon T Org.	FW	GE	mg/L	7-Jul-76	17-Nov-80	34	29	1.78	<	6	<	1	3.5517	3	6
Fluoride	FW	GE	mg/L	23-Feb-98	13-Sep-99	2	2	0.02		0.18		0.15	0.165	0.165	0.165
Nitrogen NO3	FW	GE	mg/L	17-Nov-76	12-Sep-84	51	10	0.02	<	0.09	<	0.02	0.057	0.02	0.05
Nitrogen Tot. Org	FW	GE	mg/L	7-Jul-76	12-Sep-84	54	54	0.07		0.4		0.02	0.2194	0.22	0.3
Nitrogen T. Kjeldahl	FW	GE	mg/L	7-Jul-76	11-Sep-95	79	78	0.06	<	0.41	<	0.04	0.2251	0.22	0.29

Nitrogen Total	FW	GE	mg/L	7-Jul-76	13-Sep-00	61	61	0.07		0.41		0.08	0.2479	0.25	0.31
Carbon T. Inorg.	FW	GE	mg/L	7-Jul-76	25-Jun-85	37	37	1.52		40		33	36.432	36	38
Acidity pH 8.3	FW	GE	mg/L	27-Feb-85	4-Apr-89	2	0		<	0.5	<	0.5		0.5	0.5
Periphyton AFDW	FW	GE	g/m2	7-Jul-76	17-Nov-82	38	24	0	M	0.016	<	0.0003	0.0025	0.0017	0.00475
Chlorophyll A Phyto.	FW	GE	mg/L	7-Jul-76	12-Sep-84	50	31	0	M	0.0055	<	0.0005	0.001	0.0009	0.0017
Chlorophyll A Phyto.	FW	GE	ug/L	26-Feb-86	13-Sep-00	34	6	0	M	0.0039	<	0.0002	0.0017	0.0017	0.00305
Chlorophyll A Peri.	FW	GE	ug/cm2	26-Sep-96	26-Sep-96	3	3	0		0.0009		0.0006	0.0008	0.0008	0.0008
Chlorophyll A Peri.	PT	PE	ug/cm2	27-Aug-96	26-Sep-96	5	5	0		0.0046		0.0018	0.0025	0.0019	0.0021
Chlorophyll A Phyto.	PT	PH	ug/L	27-Feb-85	18-Sep-86	8	4	0	M	0.0018	M	0.0006	0.0011	0.0014	0.0018
Phaeophytin A Phyto.	PT	PH	ug/L	27-May-85	8-Oct-85	6	0		<	0.0005	<	0.0005		0.0005	0.0005
Phaeophytin A Phyto.	FW	GE	ug/L	25-Mar-86	25-Mar-86	1	0		<	0.0005	<	0.0005		0.0005	0.0005
Phaeophytin A Phyto.	FW	GE	mg/L	3-May-	9-Nov-	20	1	0	<	0.0021	<	0.0005	0.0021	0.0005	0.0005

				78	81										
Phaeophytin A Peri.	FW	GE	g/m2	9-Mar-77	17-Nov-82	32	19	0	M	0.0036	<	0.0003	0.001	0.0006	0.0012
E. Coli bacteria	FW	GE	CFU/100 mL	24-Sep-98	24-Sep-98	1	0		<	1	<	1		1	1
Coliform Fecal	FW	GE	CFU/100 mL	25-Sep-89	24-Sep-98	6	2	0.82	<	2	<	0	1	1.5	2
Coliform Fecal	FW	GE	MPN	20-Oct-83	26-Oct-83	2	0		<	2	<	2		2	2
Biomass	FW	GE	mg	26-Sep-96	26-Sep-96	3	3	4.04		28		20	24.333	25	25
Biomass	PT	PE	mg	27-Aug-96	26-Sep-96	5	5	14.5		70		34	56	62	65
Biomass Fixed	PT	PE	mg	27-Aug-96	27-Aug-96	3	3	9.5		57		38	47.667	48	48
Br-D	FW	GE	mg/L	23-Feb-98	13-Sep-99	2	0		<	0.05	<	0.05		0.05	0.05
Cl-D	FW	GE	mg/L	10-Apr-79	13-Sep-00	10	10	1.84		7.2		2	3.831	2.9	6.505
Hardness T: CaCO3	FW	GE	mg/L	7-Jul-76	15-Nov-77	13	13	3.31		165		154	158.85	157	163
Nitrogen Ammonia	FW	GE	mg/L	7-Jul-76	13-Sep-00	85	46	0.01	<	0.034	<	0.005	0.0157	0.007	0.022
Nitrogen	FW	GE	mg/L	17-	13-	81	26	0.0	<	0.16	<	0.00	0.07	0.02	0.08

NO2+NO3				Nov-76	Sep-00			3				2	28		
Nitrogen NO3	FW	GE	mg/L	7-Jul-76	13-Sep-99	5	1	0.05	<	0.132	<	0.002	0.132	0.02	0.02
Nitrogen NO2	FW	GE	mg/L	7-Jul-76	13-Sep-99	75	0		<	0.005	<	0.005		0.005	0.005
Phosphorus ortho D	FW	GE	mg/L	7-Jul-76	13-Sep-00	19	0		<	0.05	<	0.001		0.003	0.003
Silica Reactive D	FW	GE	mg/L	7-Jul-76	1-Mar-00	79	79	0.74		9.6		5.5	7.9013	7.8	8.8
Sulphate D	FW	GE	mg/L	7-Jul-76	13-Sep-99	22	22	1.88		57.3		49	53.75	54	55.5
Hardness Total	FW	GE	mg/L	23-Feb-98	13-Sep-99	2	2	177		426		176	301	301	301
AL-T	FW	GE	mg/L	27-Feb-85	25-Mar-86	4	0		<	0.02	<	0.02		0.02	0.02
AS-T	FW	GE	mg/L	27-Feb-85	25-Mar-86	4	0		<	0.25	<	0.25		0.25	0.25
C--T	FW	GE	mg/L	27-May-85	25-Jun-85	2	2	0.71		39		38	38.5	38.5	38.5
CA-D	FW	GE	mg/L	7-Jul-76	15-Nov-77	13	13	1.02		37		33.9	35.077	34.8	35.7
CA-E	FW	GE	mg/L	23-Feb	13-Se	2	2	68		135		38.9	86.95	86.95	86.95

				-98	p-99										
CA-T	FW	GE	mg/L	7-Jul-76	25-Mar-86	46	46	1.79		40.6		33.3	36.267	36.4	38.3
CD-T	FW	GE	mg/L	27-Feb-85	25-Mar-86	4	0		<	0.01	<	0.01		0.01	0.01
CO-T	FW	GE	mg/L	27-Feb-85	25-Mar-86	4	0		<	0.1	<	0.1		0.1	0.1
CR-T	FW	GE	mg/L	27-Feb-85	25-Mar-86	4	0		<	0.01	<	0.01		0.01	0.01
CU-T	FW	GE	mg/L	27-Feb-85	25-Mar-86	4	0		<	0.01	<	0.01		0.01	0.01
FE-T	FW	GE	mg/L	27-Feb-85	25-Mar-86	4	1	0.01	<	0.02	<	0.01	0.02	0.01	0.015
K--D	FW	GE	mg/L	7-Jul-76	2-Mar-88	48	48	0.12		4.8		4.3	4.55	4.6	4.7
K--E	FW	GE	mg/L	23-Feb-98	13-Sep-99	2	2	1.63		4.9		2.6	3.75	3.75	3.75
MG-D	FW	GE	mg/L	7-Jul-76	15-Nov-77	13	13	0.6		18.3		16.3	17.323	17.3	17.8
MG-E	FW	GE	mg/L	23-Feb-98	13-Sep-99	2	2	1.98		21.9		19.1	20.5	20.5	20.5
MG-T	FW	GE	mg/L	7-Jul-76	25-Mar-	18	18	0.77		19.8		16.6	17.783	17.65	18.8

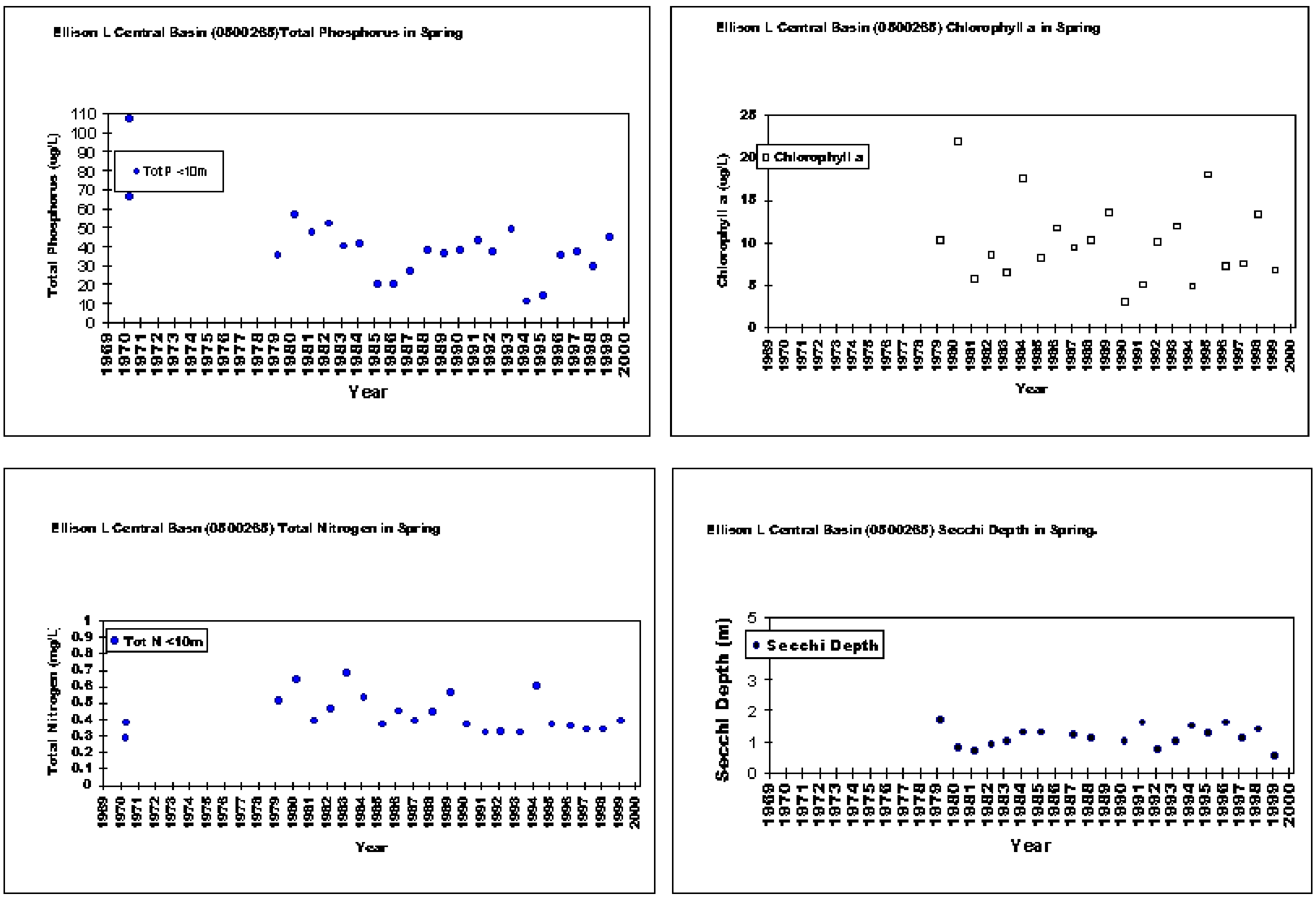
					86										
MN-T	FW	GE	mg/L	27-Feb-85	25-Mar-86	4	0		<	0.01	<	0.01		0.01	0.01
MO-T	FW	GE	mg/L	27-Feb-85	25-Mar-86	4	3	0.01	<	0.02	<	0.01	0.0133	0.01	0.015
NA-D	FW	GE	mg/L	10-Apr-79	25-Mar-86	5	5	0.11		16.5		16.2	16.34	16.3	16.4
NA-E	FW	GE	mg/L	23-Feb-98	13-Sep-99	2	2	3.82		17.1		11.7	14.4	14.4	14.4
NI-T	FW	GE	mg/L	27-Feb-85	25-Mar-86	4	0		<	0.05	<	0.05		0.05	0.05
P--D	FW	GE	mg/L	7-Jul-76	13-Sep-00	87	75	0	<	0.013	<	0.003	0.0047	0.004	0.006
P--T	FW	GE	mg/L	7-Jul-76	13-Sep-00	89	87	0	<	0.024	<	0.003	0.0073	0.007	0.011
PB-T	FW	GE	mg/L	27-Feb-85	25-Mar-86	4	0		<	0.1	<	0.1		0.1	0.1
SI-E	FW	GE	mg/L	23-Feb-98	13-Sep-99	2	2	0.75		4.75		3.69	4.22	4.22	4.22
V--T	FW	GE	mg/L	27-Feb-85	25-Mar-86	4	0		<	0.01	<	0.01		0.01	0.01
ZN-T	FW	GE	mg/L	27-Feb-85	25-Mar-86	4	1	0.01	<	0.03	<	0.01	0.03	0.01	0.02

Appendix Table 10: Date of sampling for all sites in each lake by spring and autumn and year

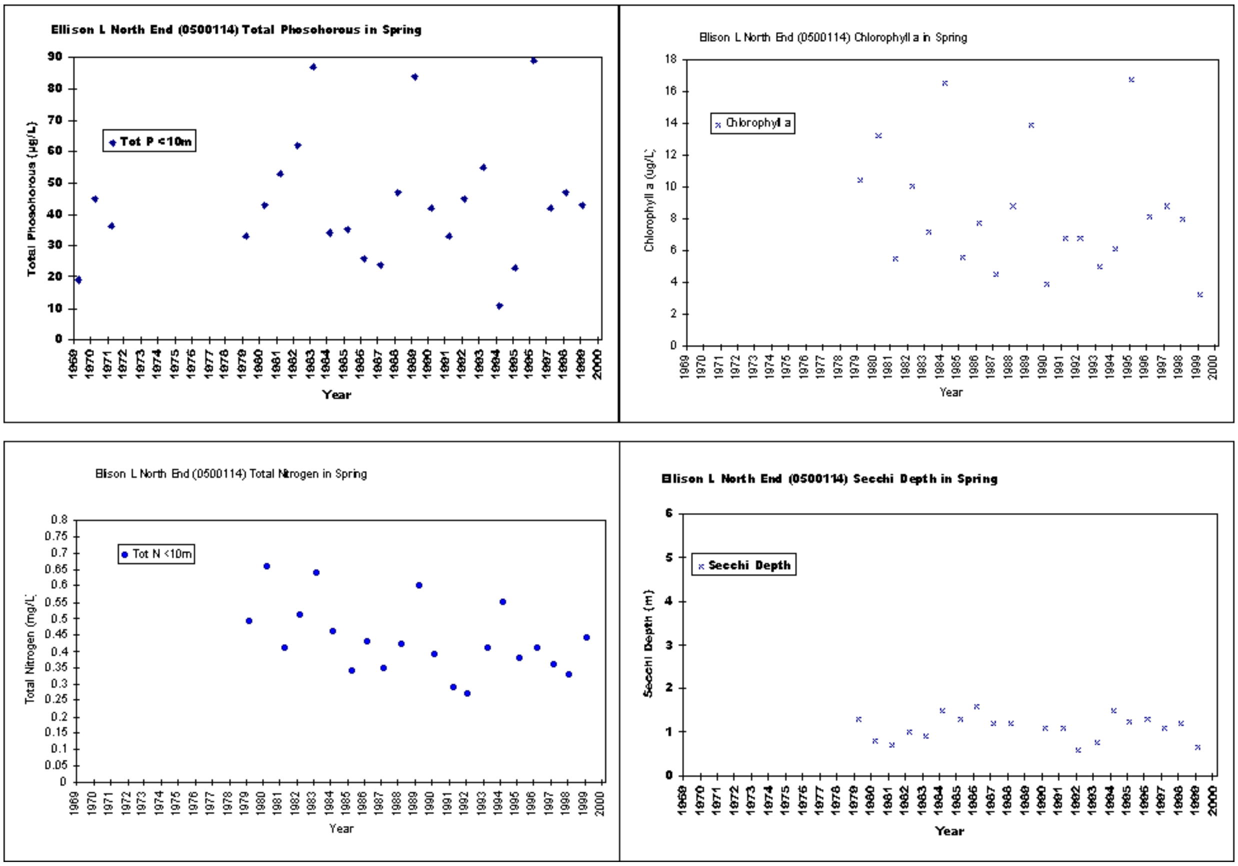
	Spring Sampling Dates							
Year	Kal. L	Wood L	Ellison L			Kal. L	Wood L	Ellison L
					1968			69/09/09
1969			69/05/08		1970		70/08/11	70/09/14
1970	70/04/03	70/04/16	70/04/15		1971	71/10/19		71/09/15
1971			71/04/12		1973	73/08/07	73/08/07	
1975	75/04/24	75/04/24			1974		74/07/31	
1976	76/05/04	76/04/14			1974	74/07/31		
1977	77/04/05	77/04/04			1975	75/08/20	75/08/25	
1978	78/03/16	78/04/12			1976		76/10/07	
1979	79/04/10	79/04/19	79/04/04		1977	77/08/18	77/10/13	
1980	80/04/02	80/03/31	80/04/22		1978		78/10/05	
1981	81/03/18	81/03/30	81/04/22		1979		79/10/03	79/08/20
1982	82/05/03	82/03/31	82/04/19		1980	80/08/20	80/09/09	80/09/03
1983	83/02/28	83/02/24	83/03/28		1981	81/08/18	81/09/22	81/08/06
1984	84/02/27	84/03/13	84/03/20		1982	82/09/07	82/09/08	82/08/30
1985	85/02/27	85/04/11	85/04/10		1983	83/09/26	83/08/30	83/08/17
1986	86/02/26	86/03/20	86/03/24		1984	84/09/12	84/09/12	84/08/29
1987	87/03/04	87/03/04	87/03/24		1985	85/09/18	85/09/30	85/08/20
1988	88/03/02	88/03/02	88/03/29		1986	86/09/18	86/09/22	86/09/22
1989	89/04/04	89/04/04	89/04/13		1987	87/09/01	87/09/01	87/08/31
1990	90/03/15	90/03/28	90/03/27		1988	88/09/13	88/09/13	88/08/22
1991	91/03/19	91/04/25	91/04/25		1989	89/09/25	89/09/25	89/08/30
1992	92/03/03	92/03/03	92/03/09		1990	90/09/19	90/09/19	90/09/12
1993	93/04/05	93/04/06	93/04/26		1991	91/08/26	91/09/24	91/09/10
1994	94/03/22	94/03/22	94/04/12		1992	92/09/21	92/09/21	92/10/07
1995	95/02/23	95/02/23	95/03/15		1993	93/09/08	93/09/08	93/09/09
1996	96/04/11	96/04/11	96/04/09		1994	94/09/29	94/09/29	94/08/29
1997	97/04/09	97/04/09	97/04/10		1995	95/09/11	95/09/11	95/08/28
1998	98/02/23	98/03/12	98/03/19		1996	96/09/19	96/09/26	96/09/10
1999	99/03/31	99/03/10	9903/15		1997	97/09/15	97/09/15	97/09/23
					1998	98/09/24	98/08/31	98/08/31

					1999	99/09/13	99/09/13	99/09/14

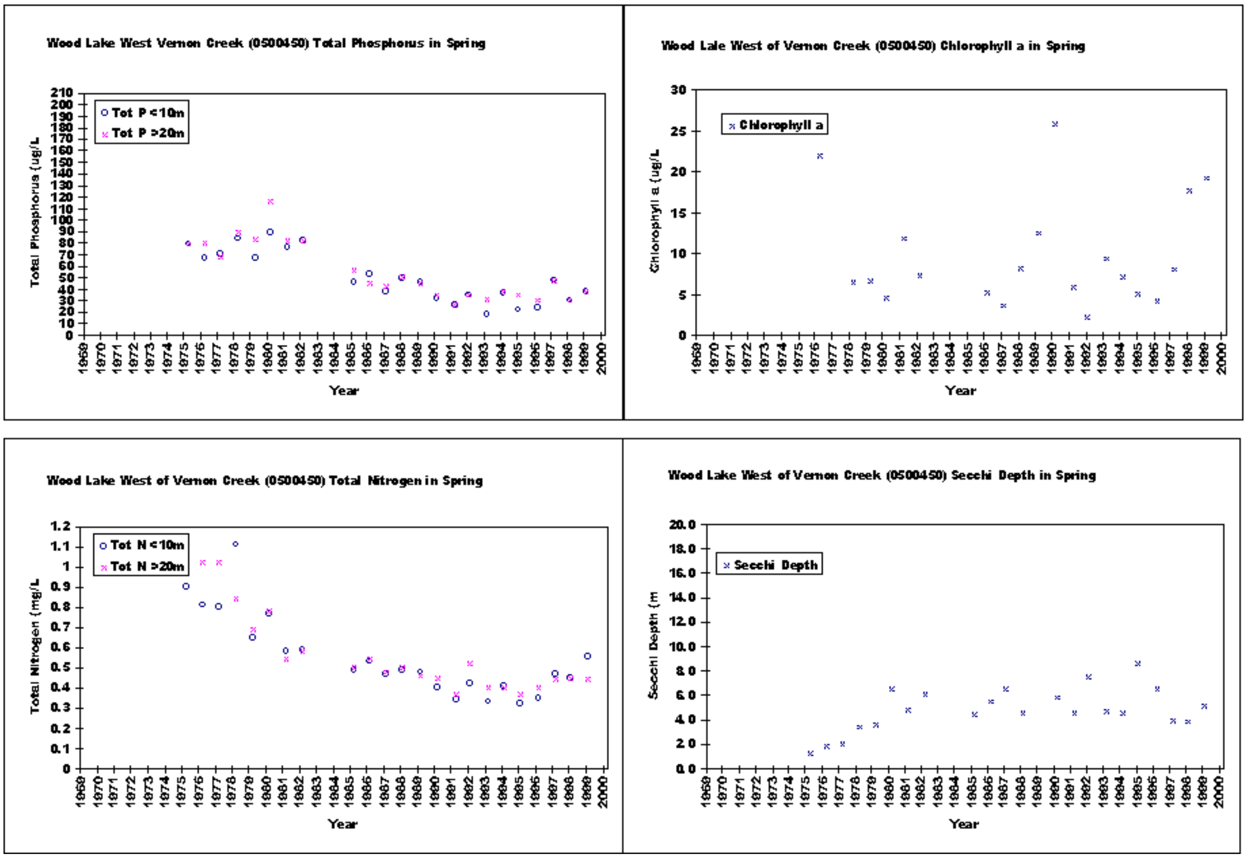
Appendix Figure 1. Ellison Lake Central Basin (0500265) spring data



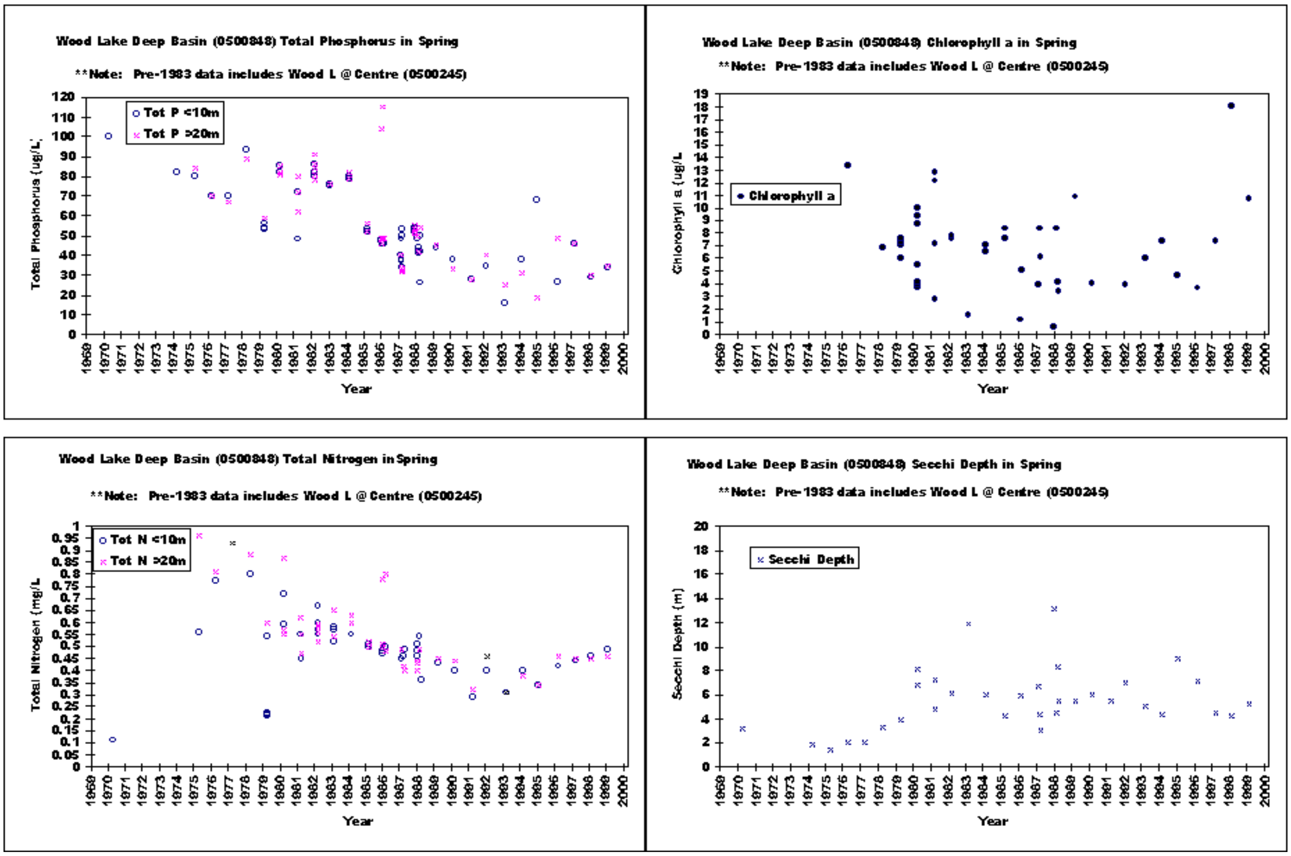
Appendix Figure 2. Ellison Lake North End (0500114) spring data



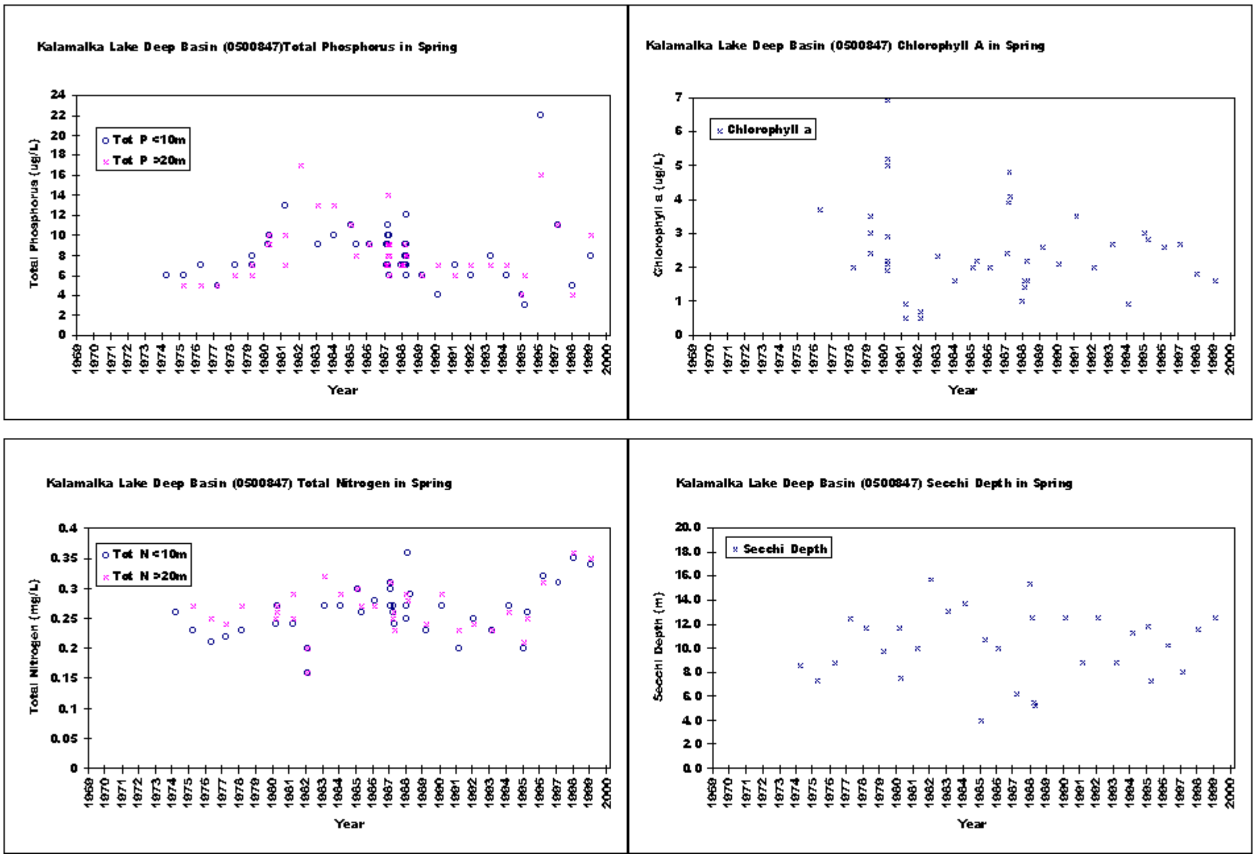
Appendix Figure 3. Wood Lake West of Vernon Creek (0500450) spring data



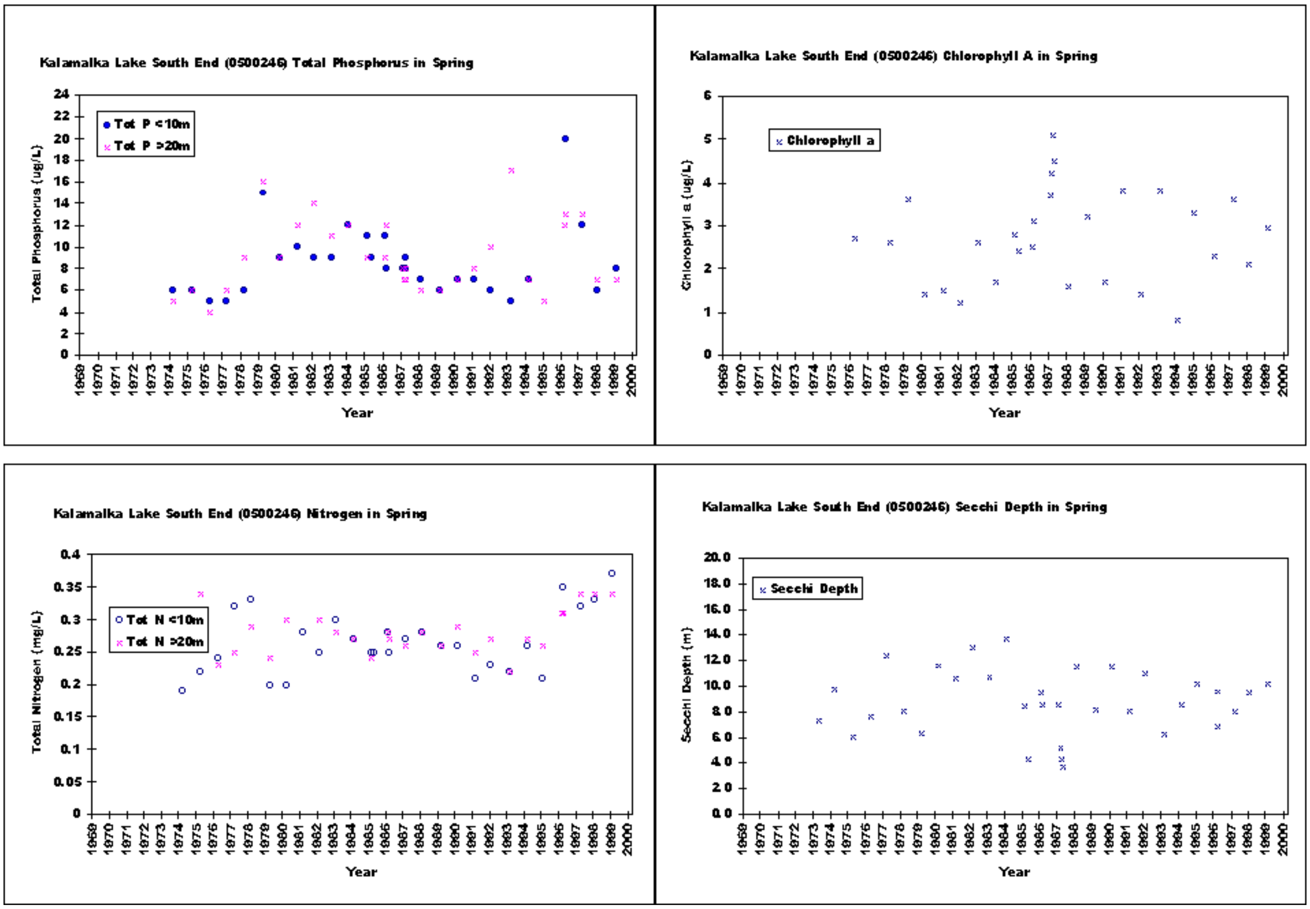
Appendix Figure 4. Wood Lake Deep Basin (0500848) spring data



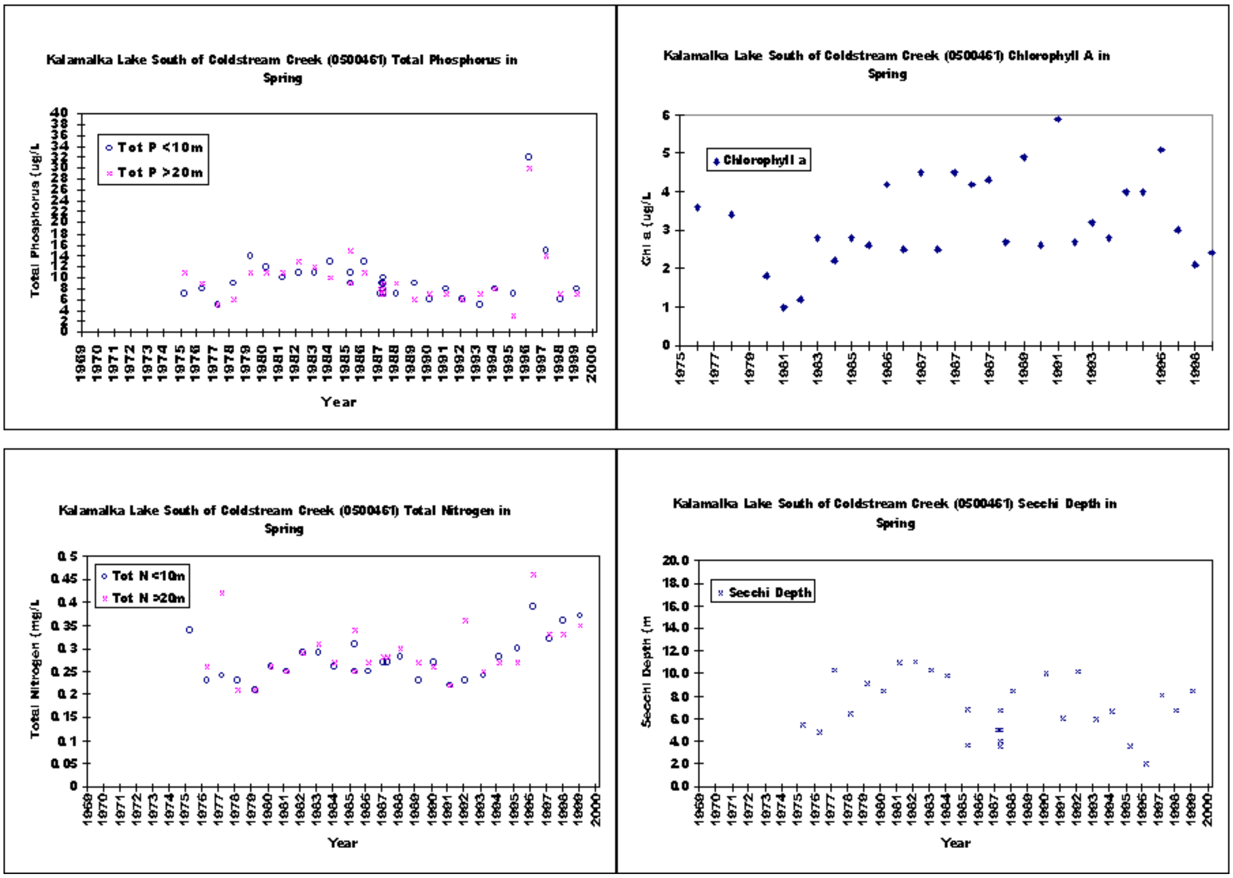
Appendix Figure 5. Kalamalka Lake Deep Basin (0500847) spring data



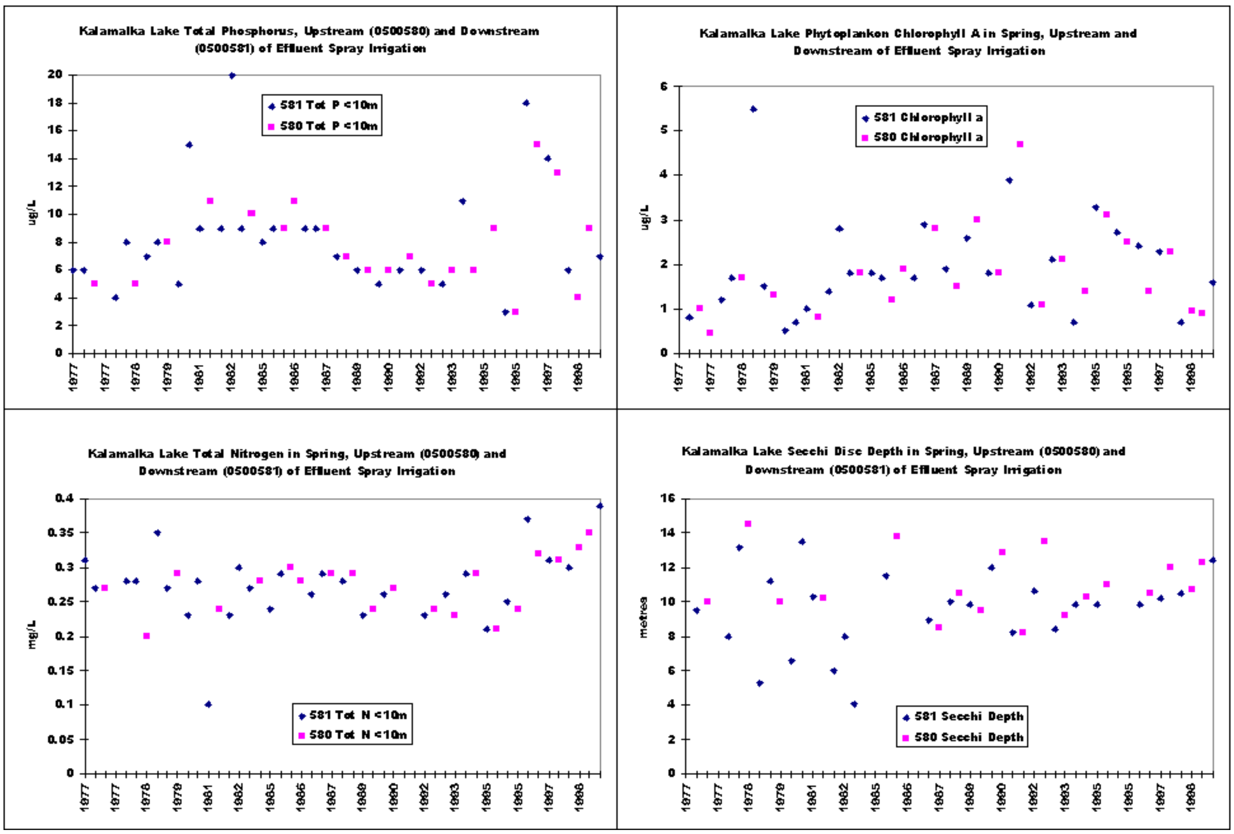
Appendix Figure 6. Kalamalka Lake South End (0500246) spring data



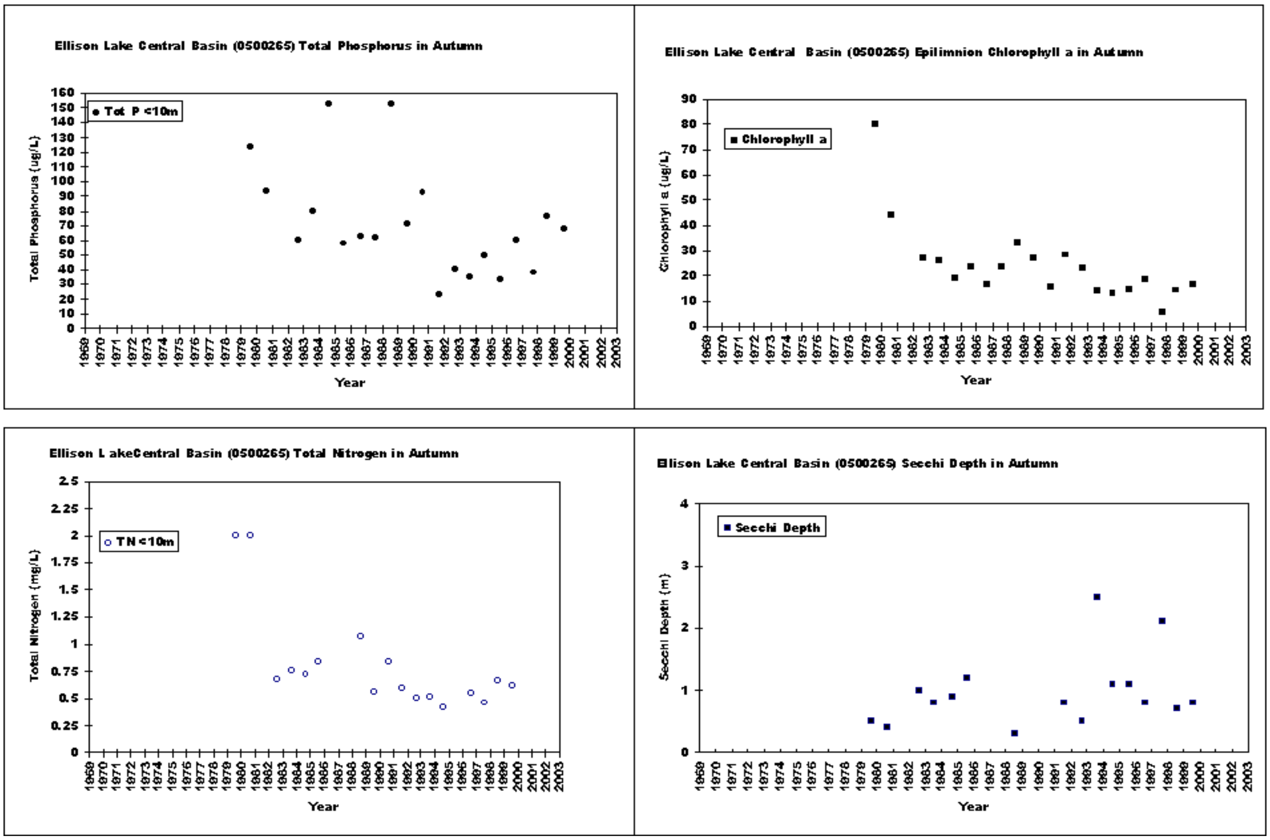
Appendix Figure 7. Kalamalka Lake South Coldstream Creek (0500461) spring data



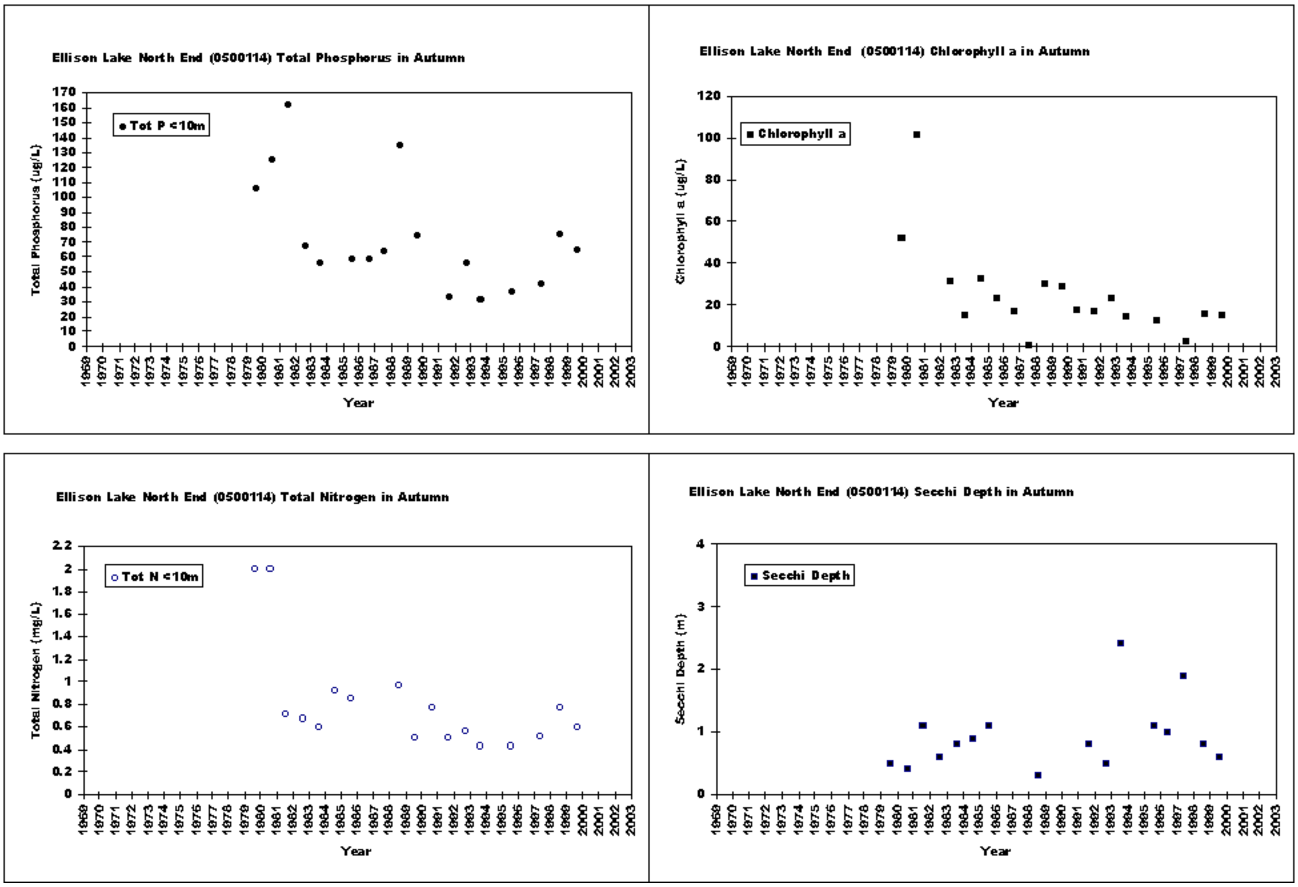
Appendix Figure 8. Kalamalka Lake, in Spring, Upstream (0500580) and Downstream (0500581) of Effluent Spray Irrigation



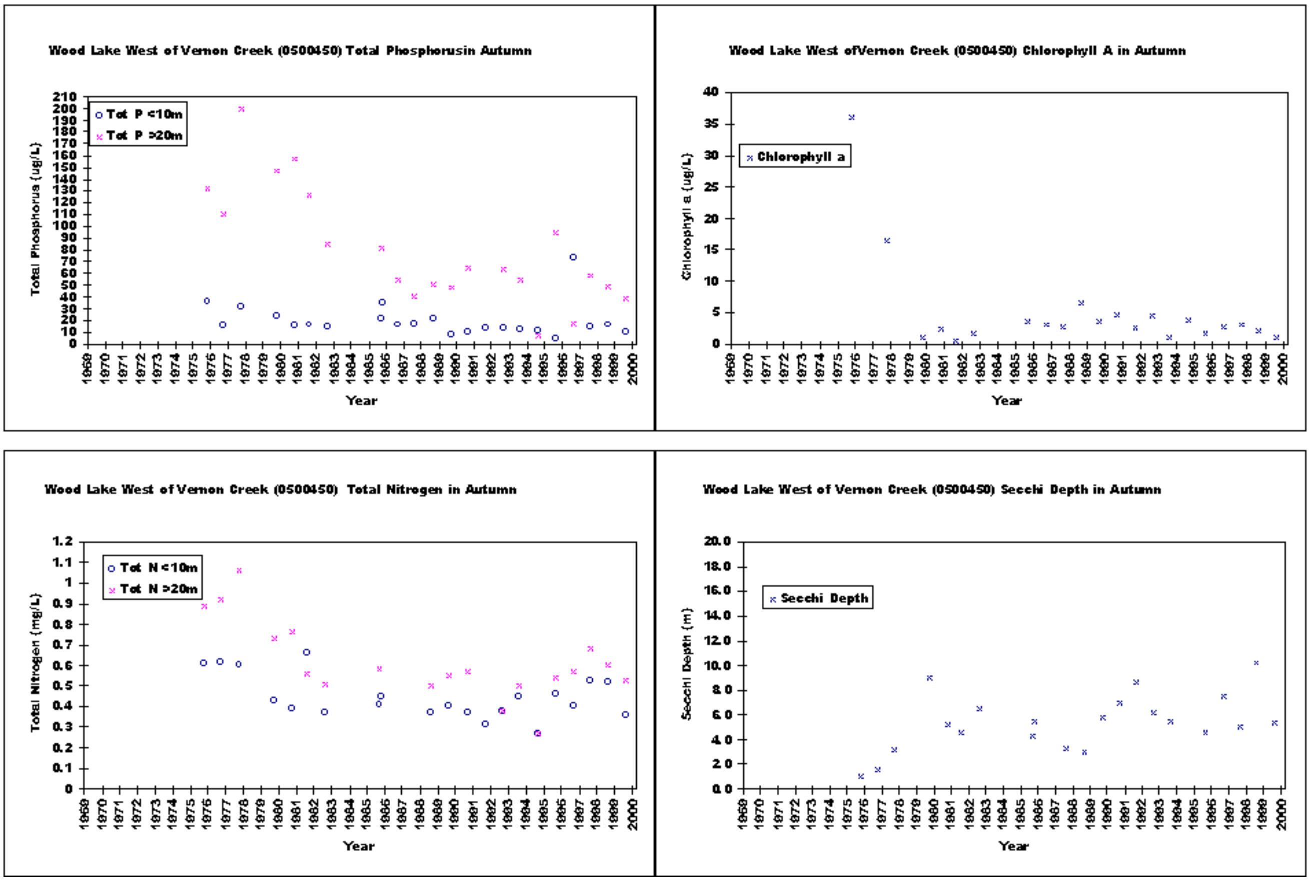
Appendix Figure 9. Ellison Lake Central Basin (0500265) autumn data



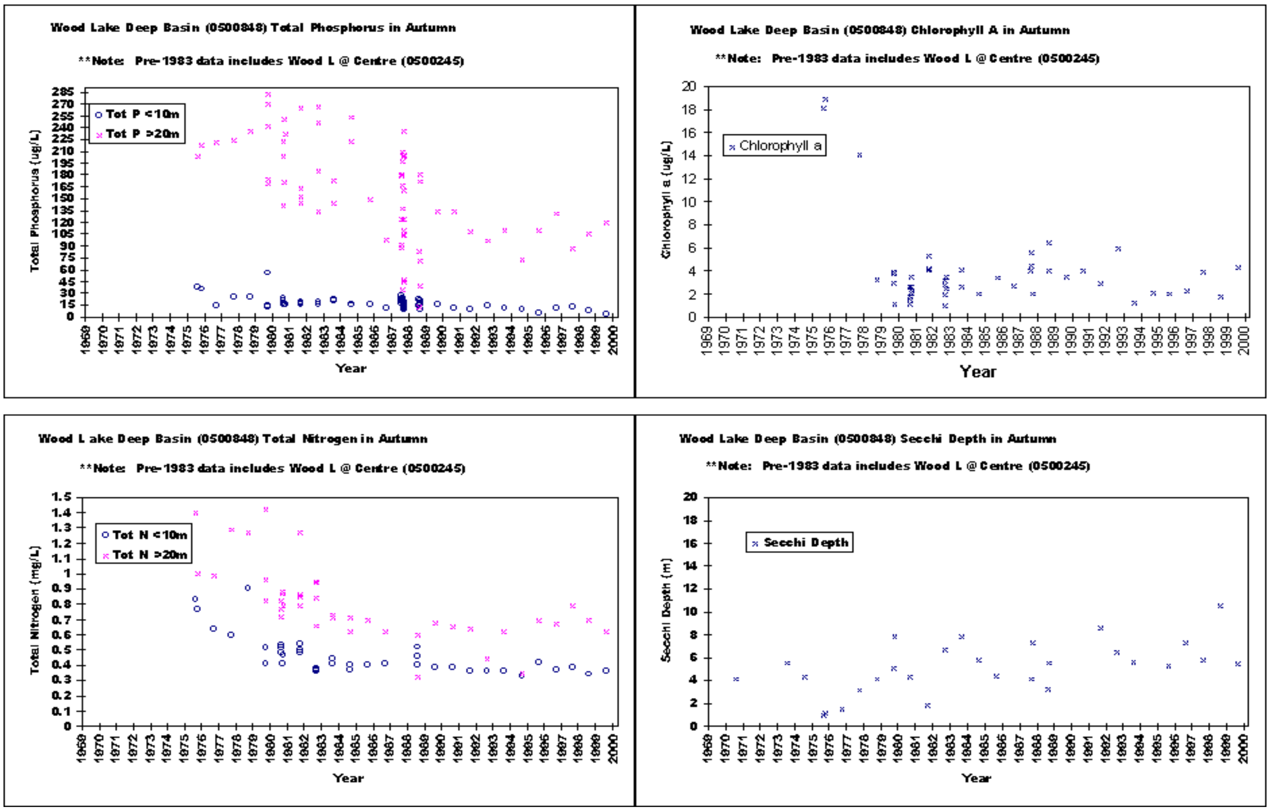
Appendix Figure 10. Ellison Lake North End (0500114) autumn data



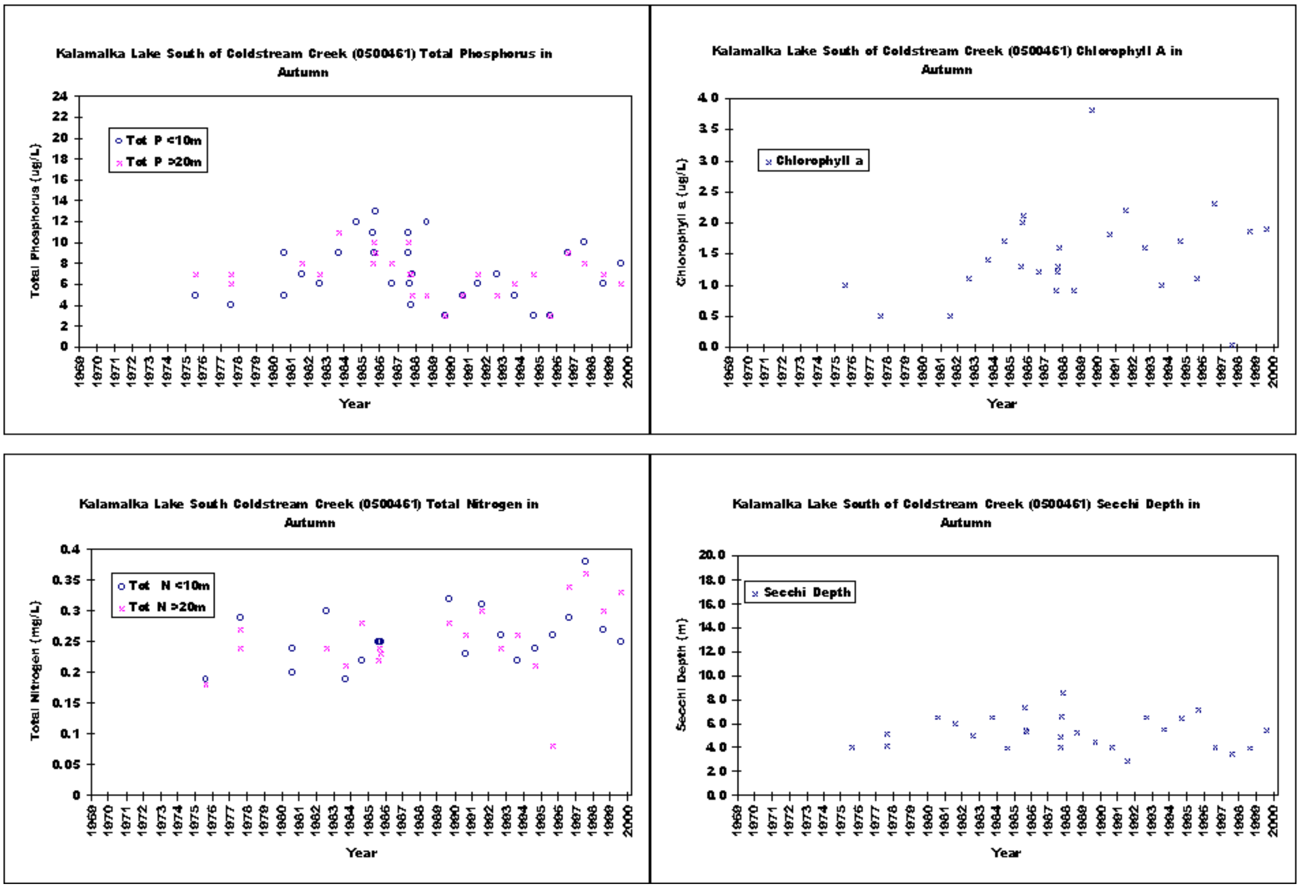
Appendix Figure 11. Wood Lake West of Vernon Creek (0500450) autumn data



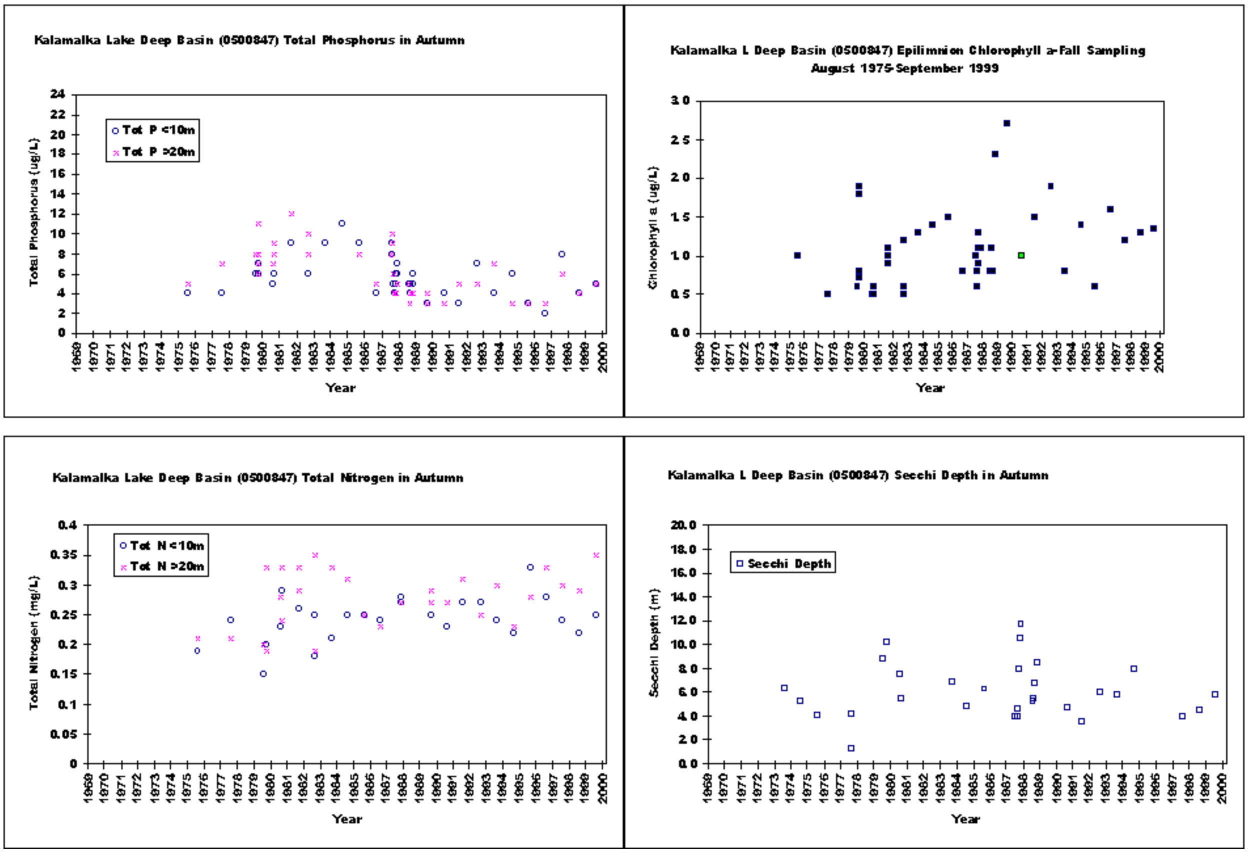
Appendix Figure 12. Wood Lake at Deep Center (0500848)



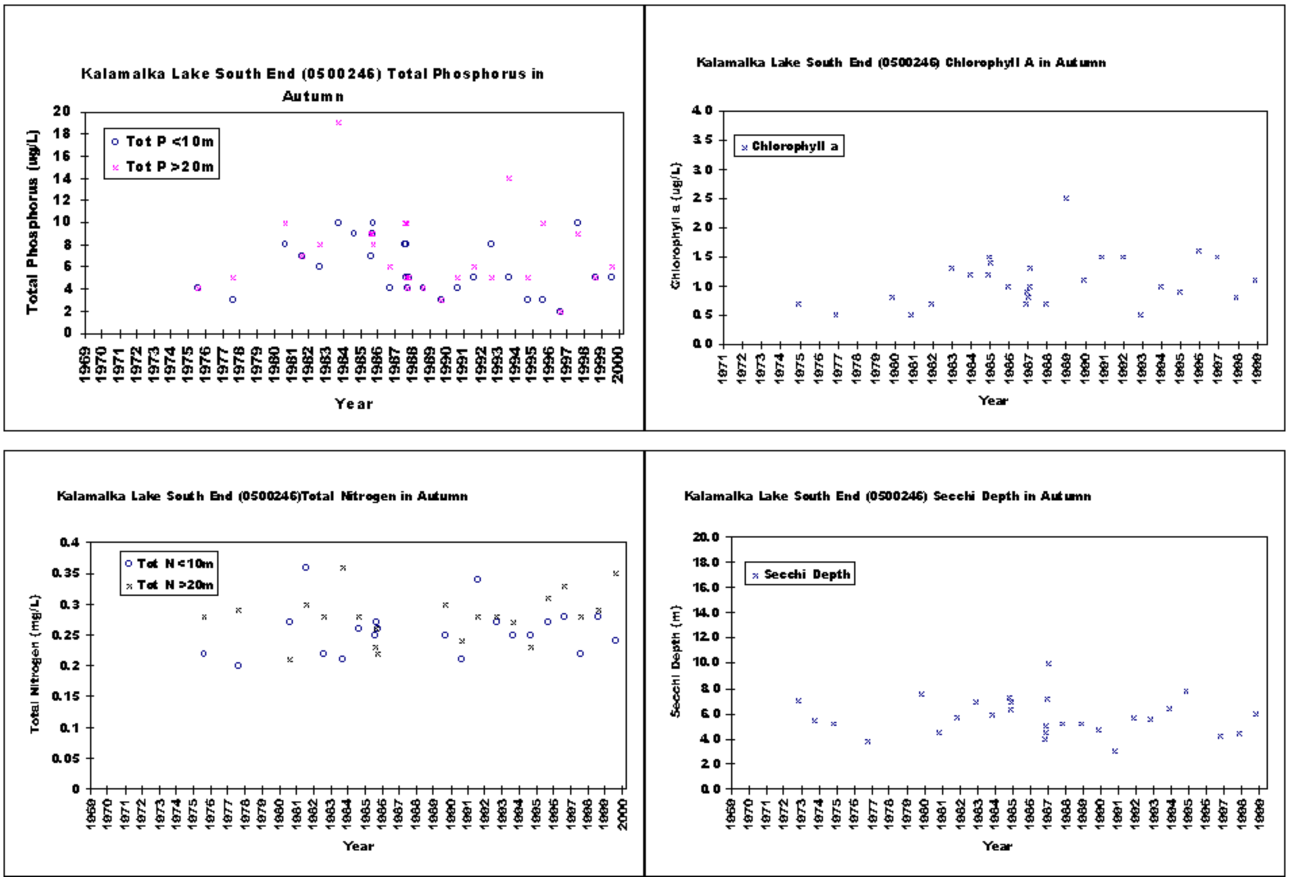
Appendix Figure 13. Kalamalka Lake South of Coldstream Creek (0500461) autumn data



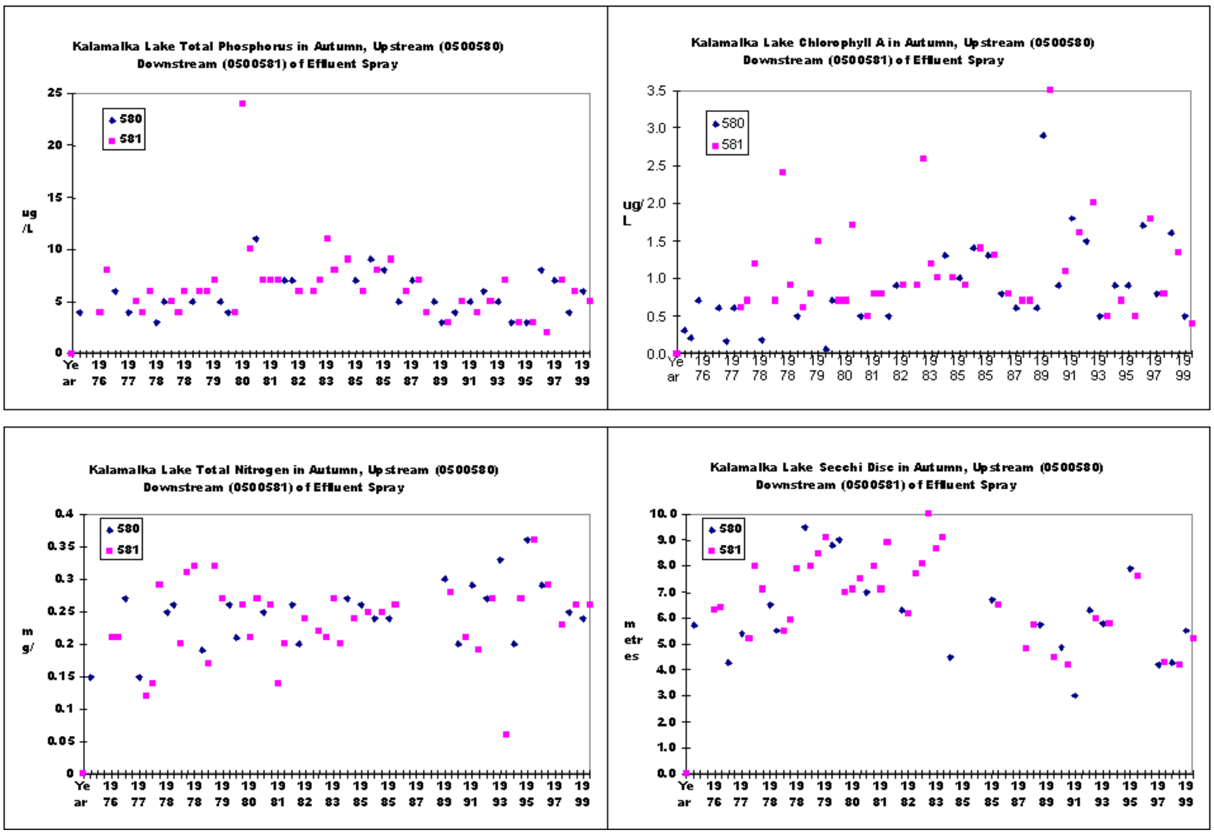
Appendix Figure 14. Kalamalka Lake Deep Basin (0500847) autumn data



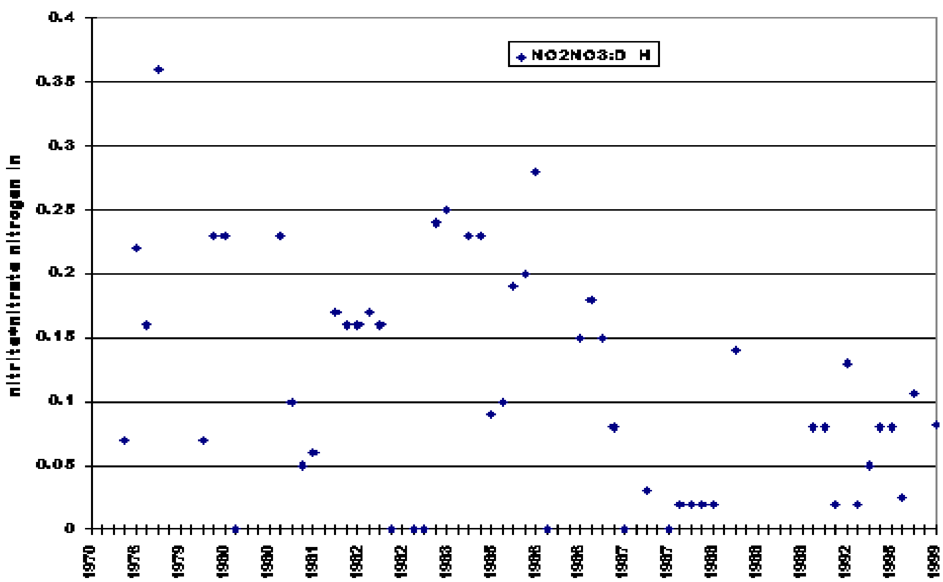
Appendix Figure 15. Kalamalka Lake South End (0500246) autumn data



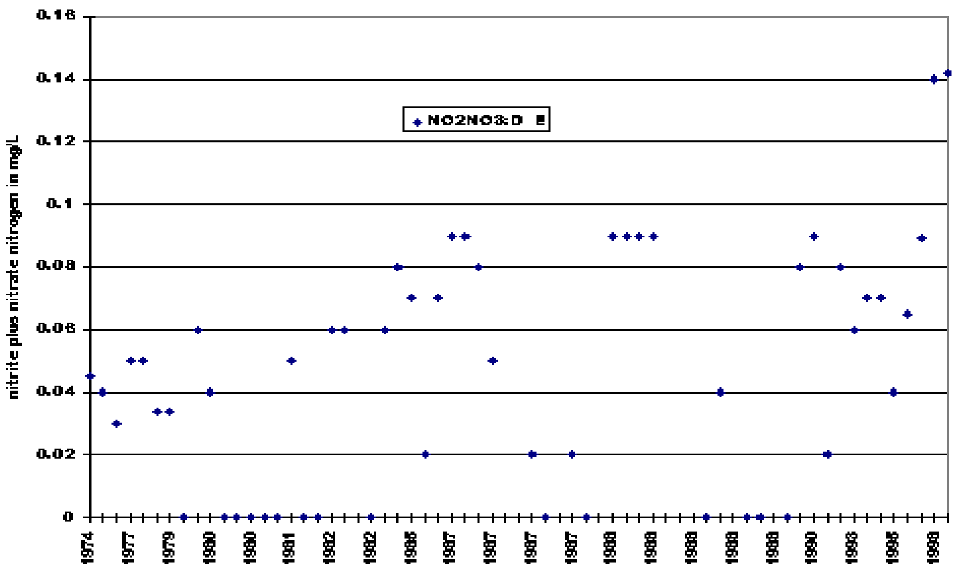
Appendix Figure 16. Kalamalka Lake, in Autumn, Upstream (0500580) and Downstream (0500581) of Effluent Spray Irrigation



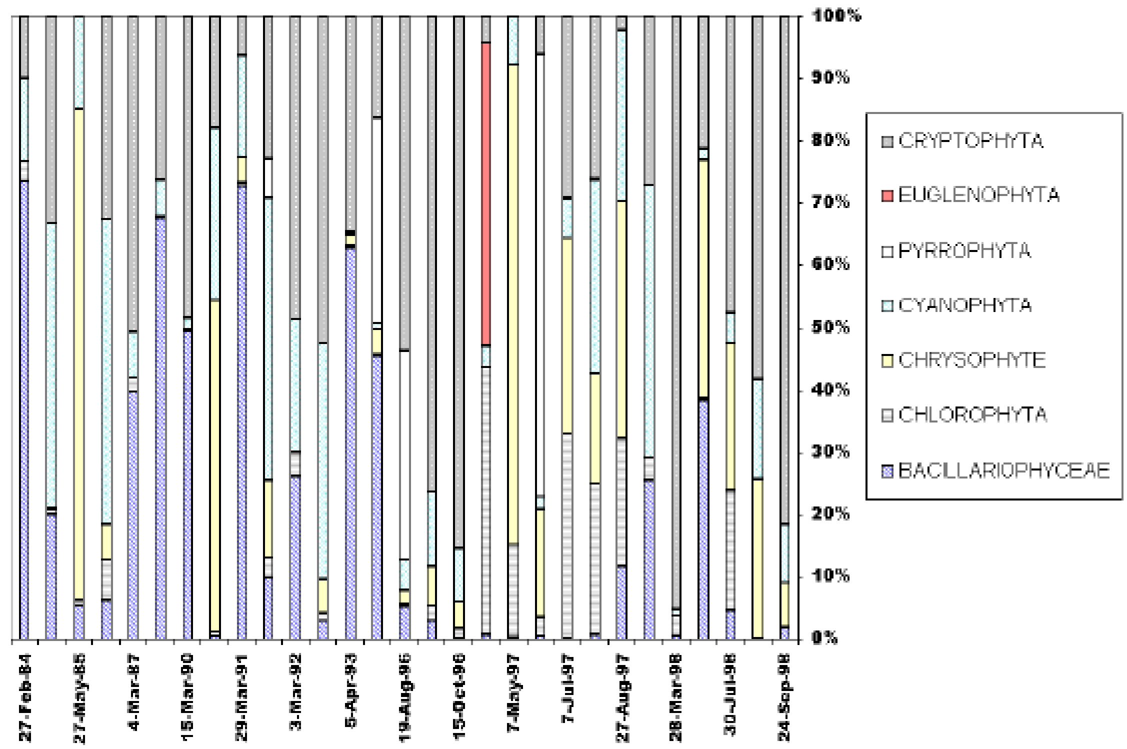
Appendix Figure 17. Wood Lake at centre, spring nitrite plus nitrate nitrogen.



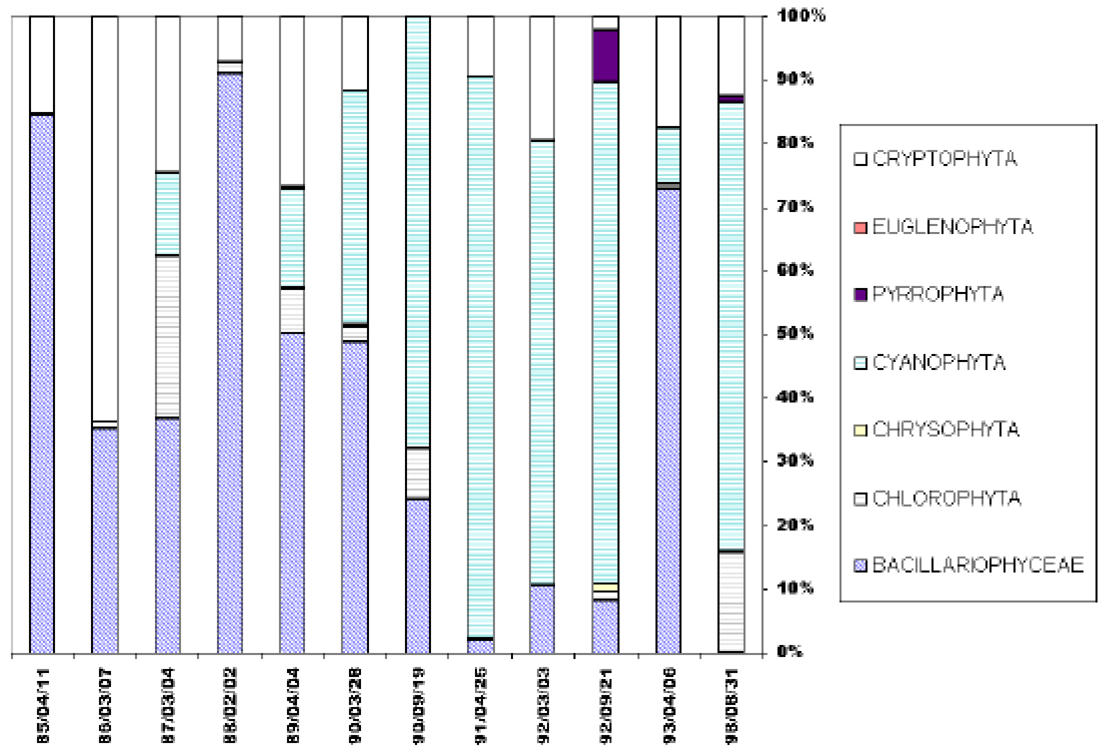
Appendix Figure 18. Kalamalka Lake at deep basin, spring nitrite plus nitrate nitrogen.



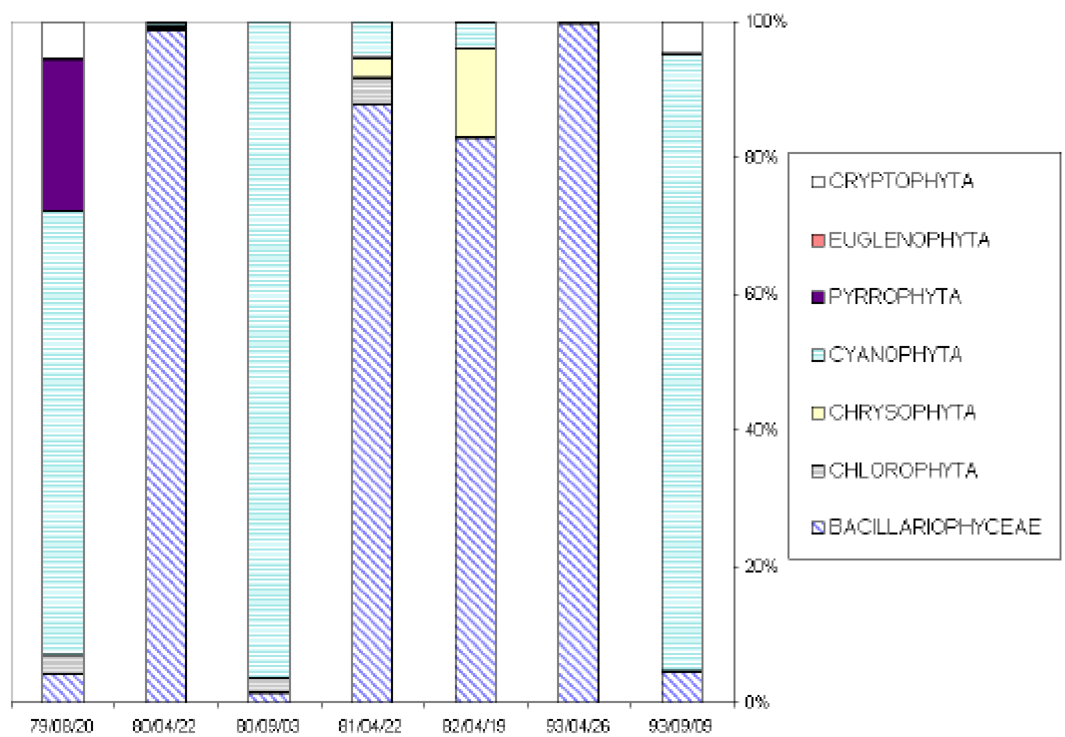
Appendix Figure 19 . Kalamalka Lake phytoplankton biovolume percent composition.



Appendix Figure 20 . Wood Lake phytoplankton biovolume percent composition



Appendix Figure 21 . Ellison Lake phytoplankton biovolume percent composition



Appendix Figure 22 . Kalamalka Lake Water Clarity (Secchi Depth in Metres), in May, 1971 to 1998.