

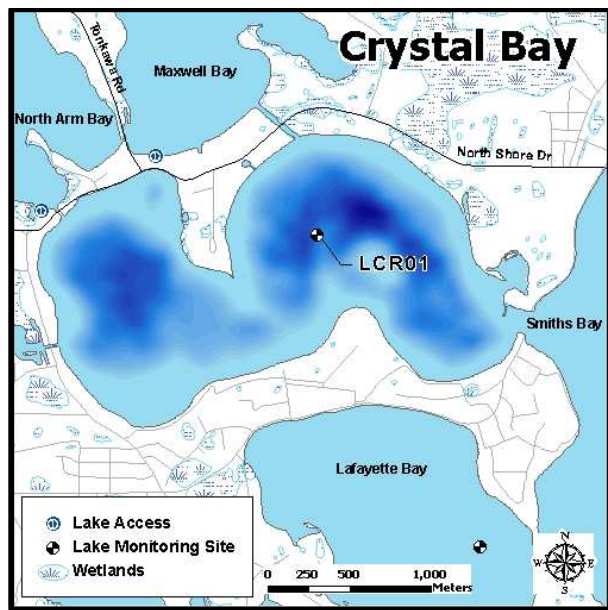
## Crystal Bay (DNR ID 27-0133-10)

MCWD Site ID: LCR01

Sampling Location GPS Coordinates: 44.94880N, -93.59340W

Surface Area (acres): 800

Max. Depth (ft): 113



### Site Information

Lake Minnetonka is a class 2B lake protected for aquatic life and recreation. Crystal Bay is located near the cities of Spring Park and Orono on Lake Minnetonka. Adjacent bays include North Arm, Maxwell Bay, Lower Lake North, and West Arm. Public lake access is available at the North Arm boat access located off of North Shore Drive (Country Road 51) 2 miles west from Shoreline Drive (Country Road 15) at Smiths Bay. Water quality information is available beginning in 1996. MCWD staff have been monitoring the lake on a bi-weekly basis from the time of ice out (April) to the time of fall mixing (mid-October) since 2006. A YSI multi-probe meter was used to measure dissolved oxygen (DO), temperature ( $^{\circ}\text{C}$ ), pH, and specific conductivity ( $\mu\text{S}/\text{cm}$ ) from the water surface and at each meter depth to the bottom. Water samples were collected at 1 meter below the water surface as well as one meter from the bottom. Surface and bottom sample parameters analyzed included total phosphorus (TP), total dissolved phosphorus (TDP), soluble reduced phosphorus (SRP), total nitrogen (TN), total dissolved nitrogen (TDN),  $\text{NO}_3/\text{NO}_2$ , and ammonia ( $\text{NH}_4$ ). Chlorophyll-*a* surface concentrations were also analyzed and measurements of Secchi disc depth were recorded.

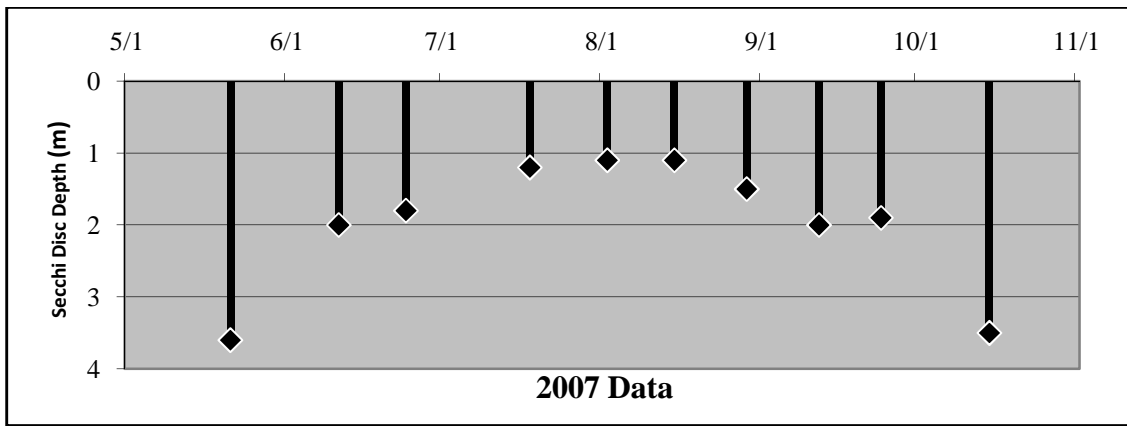
## 2007 Data Summary

- Secchi Depth was well above standard (1.2 m) at the beginning and end of the season with a period of slightly below standard measurements in between.
- Chlorophyll-*a* concentrations rose steadily during the first half of the season to slightly above the standard (15 ppb) and then began declining in mid-August.
- TP concentrations stayed below standard (40 ppb) throughout the season other than a brief decline at the beginning of August.

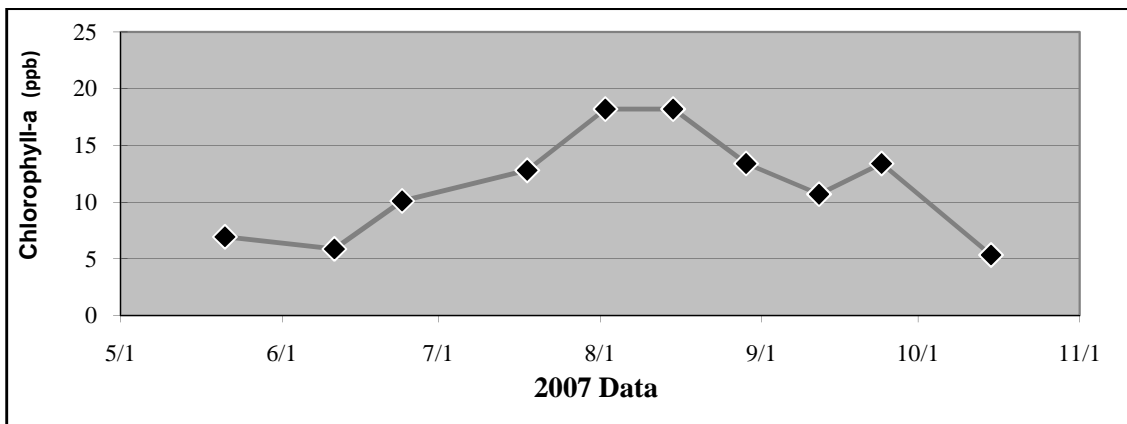
**Table 2.5 Crystal Bay 2007 Summary**

<b>2007 Summer (May-September) Water Quality Summary</b>				
<b>Parameter</b>	<b>Range</b>	<b>Mean</b>	<b>Grade</b>	<b>TSI value *</b>
Secchi Depth (m)	1.1 - 3.6	1.6	C	53
Surface TP ( $\mu\text{g/L}$ )	11 - 40	29.3	B	53
Chlorophyll- <i>a</i> ( $\mu\text{g/L}$ )	5.9 - 18.2	13.8	B	56
		<b>Overall Score</b>	<b>B-</b>	<b>54</b>

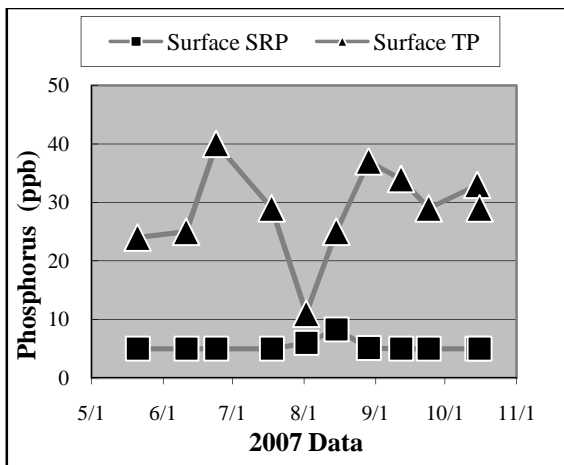
*\*excludes May Data*



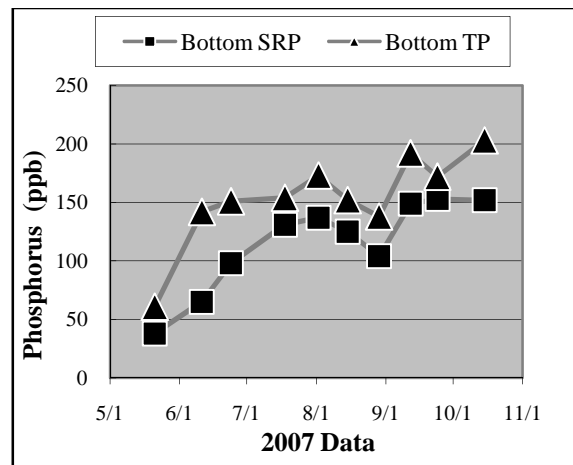
a.



b.

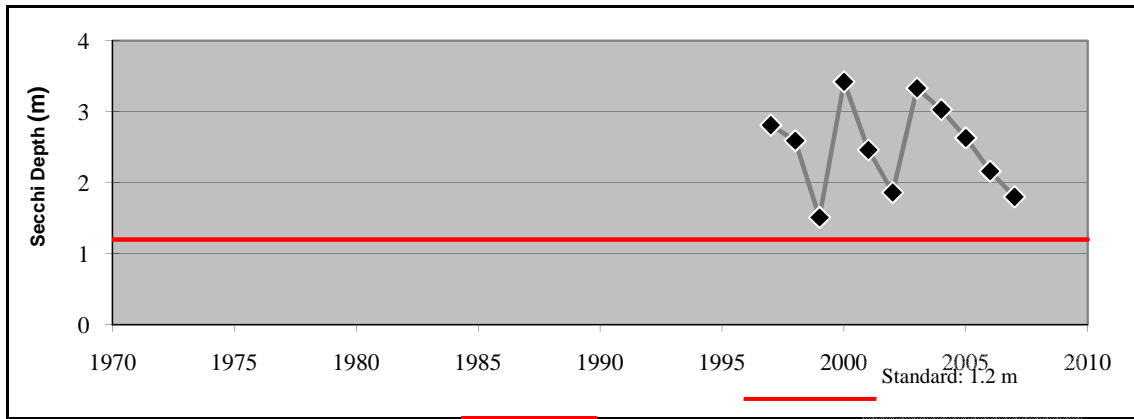


c.

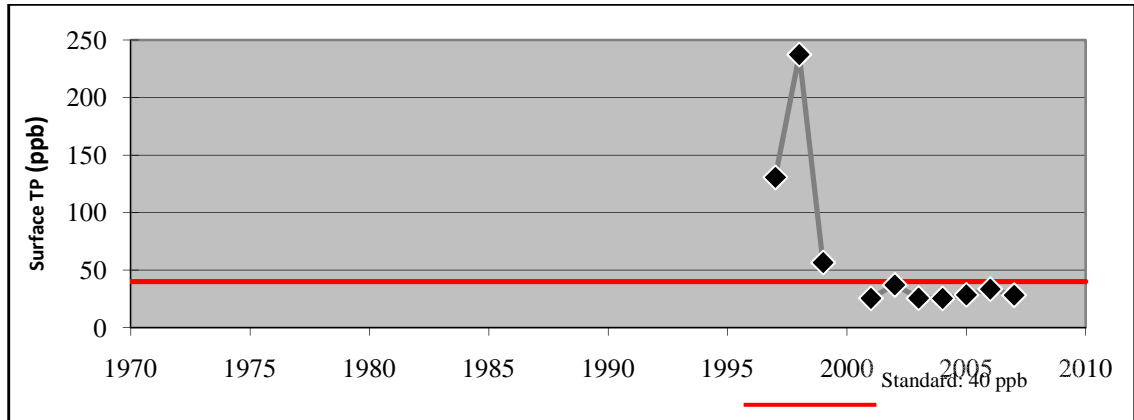


d.

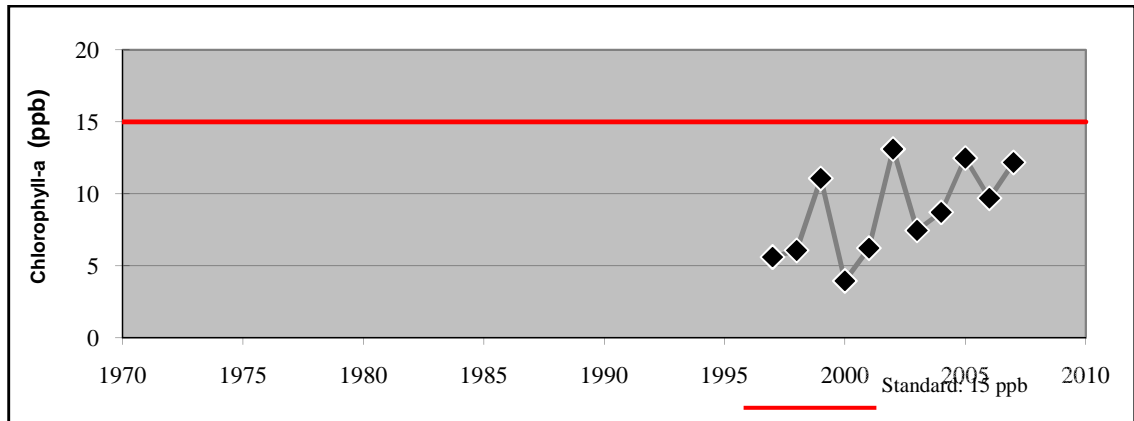
Figure 2.6 (a-d) Crystal Bay  
2007 Grade: B-



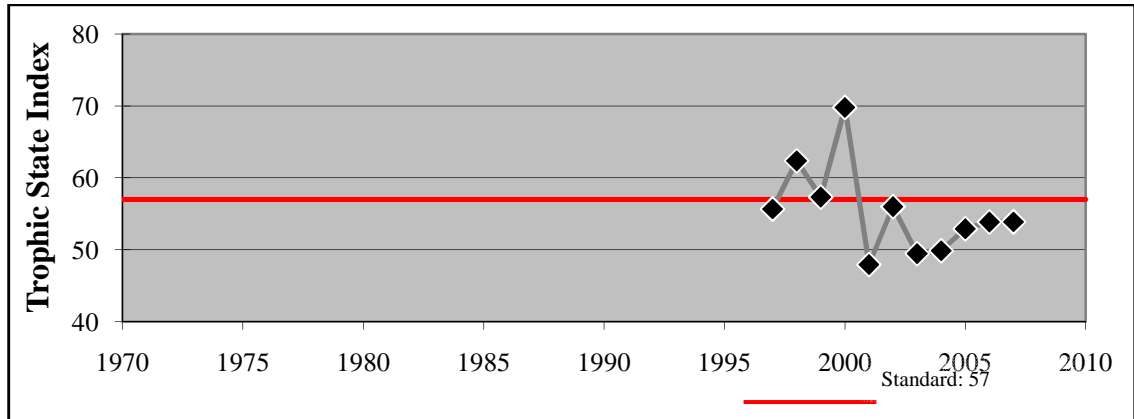
e.



f.



g.



h.

Figure 2.6 (e - h) Crystal Bay - Summer Mean Values