

**Real Time Water Quality Monthly Report
Peter's River near Botwood
May– June 2006**

General

- The Water Resources Management Division staff monitors the real-time web page on a daily basis.

Maintenance and Calibration of Instrumentation

- The instrument at Peter's River was removed on May 24th, 2006 for cleaning and calibration and then reinstalled on May 25th. The results from comparing the Minisonde values to the Datasonde values during removal and reinstallation on May 24th/25th, 2006 can be seen in **Table 1**.

Table 1: QA/QC Data Comparison Rankings upon removal/reinstallation on May 24th/25th, 2006

Station	Date	Action	Minisonde vs. Datasonde Comparison Ranking			
			Temperature	pH	Conductivity	Dissolved Oxygen
Peter's River near Botwood	May 24 th , 2006	Removal	Excellent	Excellent	Excellent	Good
	May 25 th , 2006	Installation	Good	Good	Excellent	Excellent

- The instrument was deployed until June 22nd (28-day deployment period) at which point it was removed for maintenance and calibration. The results from comparing the Minisonde values to the Datasonde values during removal on June 22nd, 2006 can be seen in **Table 2**.

Table 2: QA/QC Data Comparison Rankings upon removal on June 22nd, 2006

Station	Date	Action	Minisonde vs. Datasonde Comparison Ranking			
			Temperature	pH	Conductivity	Dissolved Oxygen
Peter's River near Botwood	June 22 nd , 2006	Removal	Excellent	Good	Poor	Poor

- A water sample was taken for laboratory analysis as part of QA/QC procedures upon reinstallation.

Data Interpretation

- During the deployment period of May 25th – June 22nd, 2006 the water quality remained relatively stable for most parameters.
- The water temperature (**Figure 1**) increased throughout the deployment period with a very strong diurnal pattern being detected in the data. The temperature ranged from 9.9°C to 20.9°C over the deployment period.

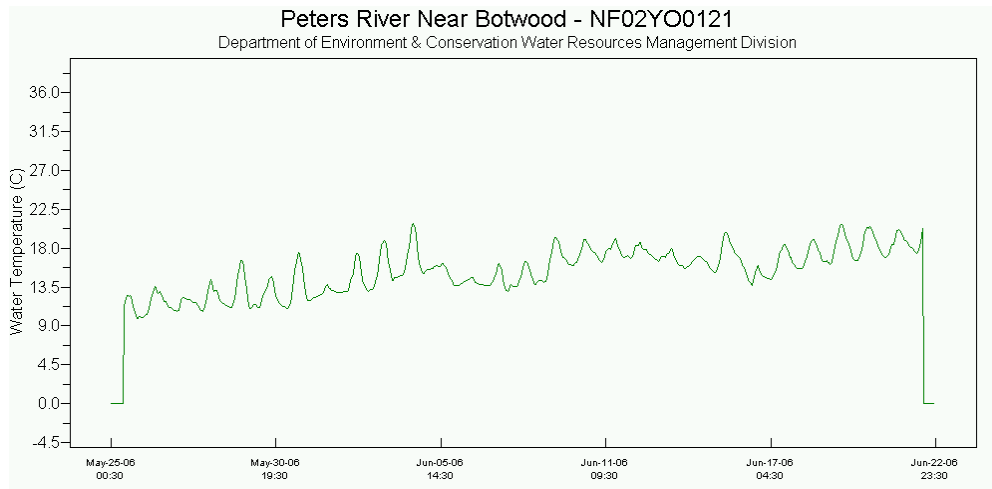


Figure 1

- The dissolved oxygen graph (**Figure 2**) showed a decrease in dissolved oxygen values over the deployment period. This corresponds to the increase seen in **Figure 1**. The dissolved oxygen values ranged from 10.26mg/L to 7.48mg/L. These values fall within the recommended CCME Protection of Aquatic Life guidelines for dissolved oxygen in most cases (cold water/other life stages – above 6.5; warm water/other life stages – above 5.5; warm water/early life stages – above 6); however, many values fall below the most conservative limit for cold water/early life stages – 9.5 mg/L.

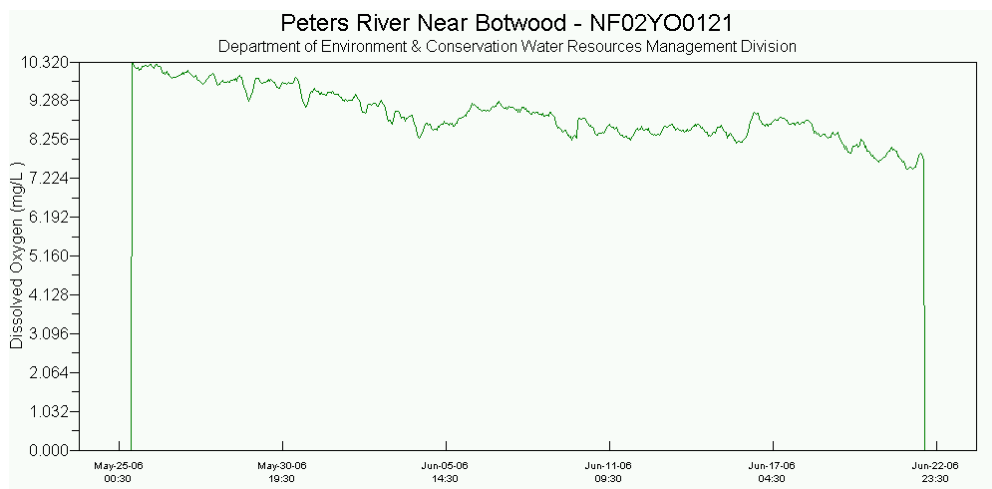


Figure 2

- pH values (**Figure 3**) remained consistent throughout the deployment period with a range of 6.6 – 7.3. All values remain within the recommended range (6.5 – 9.0) for the CCME Protection of Aquatic Life guidelines.

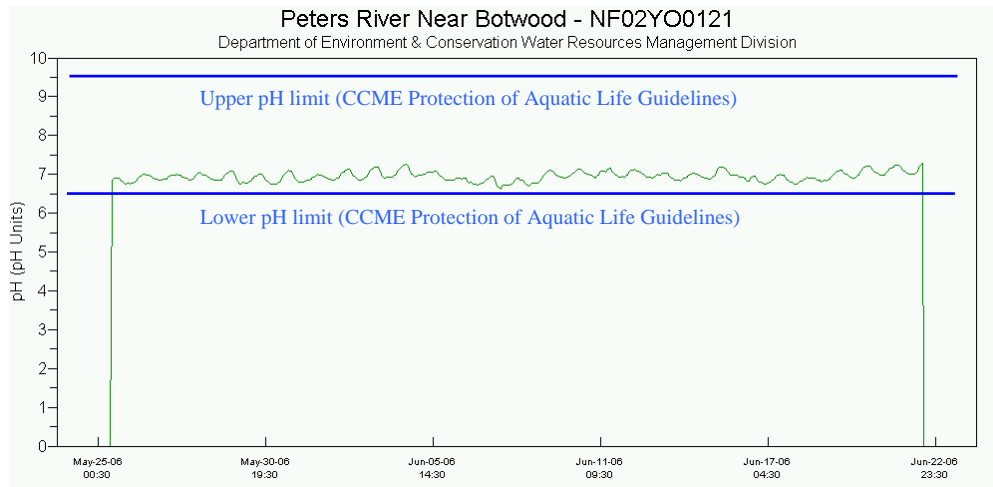


Figure 3

- The turbidity values (**Figure 5**) remained below 1 NTU which is the typical background concentration for this station.

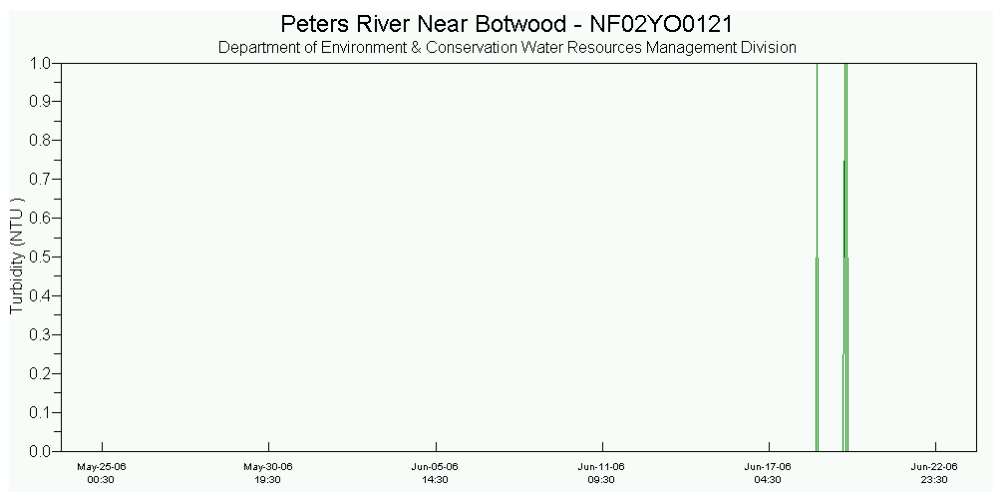


Figure 4

- Conductivity (**Figure 5**) ranged from 33 μ S/cm to 46 μ S/cm throughout the deployment period. The drop in conductivity on June 6-8 and June 17-20 correspond with increased stage (**Figure 6**). Climate data for the area (Deer Lake) is also available in **Appendix A**.

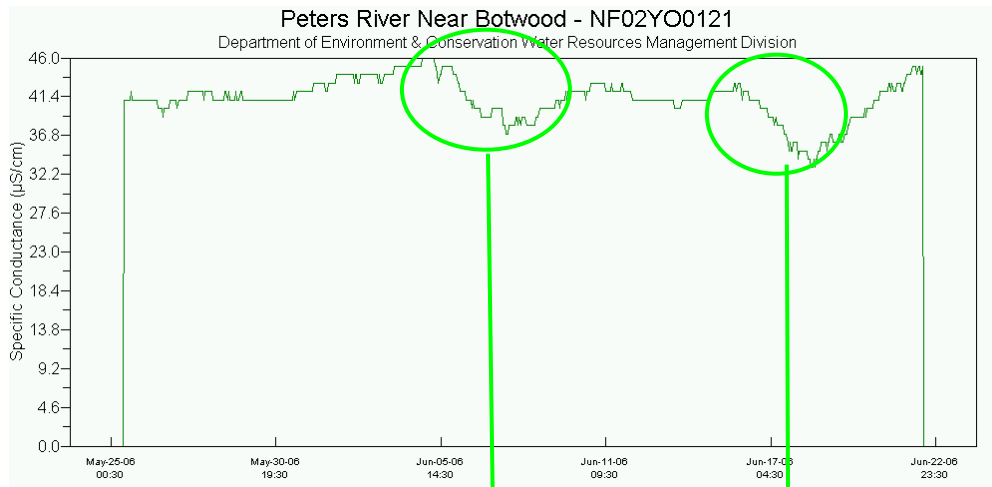


Figure 5

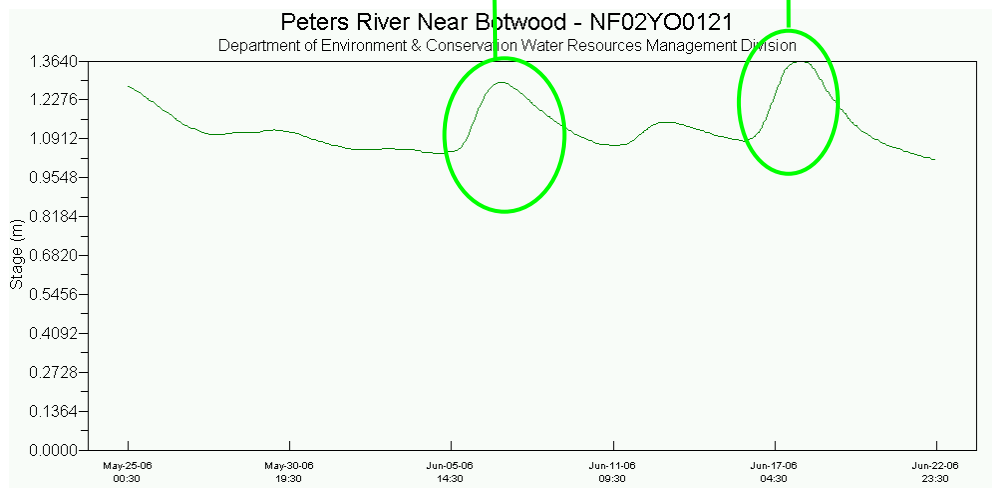


Figure 6

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Appendix A: Climate Data for Gander (May & June 2006)

Daily Data Report for May 2006											
Day	Max Temp °C	Min Temp °C	Mean Temp °C	Heat Deg Days °C	Cool Deg Days °C	Total Rain mm	Total Snow cm	Total Precip mm	Snow on Gnd cm	Dir of Max Gust 10's Deg	Spd of Max Gust km/h
01	18.3	-3.1	7.6	10.4	0.0	0.0	0.0	0.0	T	25E	32E
02	22.6	2.5	12.6	5.4	0.0	0.0	0.0	0.0	T	32E	37E
03	22.3	2.2	12.3	5.7	0.0	0.0	0.0	0.0	T		<31
04	22.3	6.9	14.6	3.4	0.0	0.0	0.0	0.0	T	18E	44E
05	16.3	8.0	12.2	5.8	0.0	T	0.0	T	T	13E	44E
06	22.2	10.6	16.4	1.6	0.0	T	0.0	T			<31
07	16.4	10.3	13.4	4.6	0.0	7.0	0.0	7.0	0	17E	37E
08	17.1	4.4	10.8	7.2	0.0	0.0	0.0	0.0	0	9E	37E
09	14.8	2.5	8.7	9.3	0.0	0.0	0.0	0.0	0		<31
10	15.7	2.2	9.0	9.0	0.0	0.0	0.0	0.0	0		<31
11	15.3	1.6	8.5	9.5	0.0	0.0	0.0	0.0	0	1E	35E
12	11.5	2.5	7.0	11.0	0.0	0.6	0.0	0.6	0	2E	39E
13	7.5	2.4	5.0	13.0	0.0	0.2	0.0	0.2	0		<31
14	15.7	2.2	9.0	9.0	0.0	T	0.0	T	0		<31
15	27.0	5.4	16.2	1.8	0.0	0.0	0.0	0.0	0	31E	37E
16	10.7	3.2	7.0	11.0	0.0	0.0	0.0	0.0	0		<31
17	5.0	2.2	3.6	14.4	0.0	8.2	0.0	8.2	0	9E	37E
18	5.4	2.3	3.9	14.1	0.0	1.4	0.0	1.4	0		<31
19	12.1	3.3	7.7	10.3	0.0	T	0.0	T	0		<31
20	14.3	3.5	8.9	9.1	0.0	1.0	0.0	1.0	0	16E	48E
21	9.6	6.3	8.0	10.0	0.0	20.0	0.0	20.0	0	11E	44E
22	12.5	5.5	9.0	9.0	0.0	10.0	0.0	10.0	0	8E	46E
23	8.3	2.5	5.4	12.6	0.0	3.4	0.0	3.4	0	28E	41E
24	4.9	2.0	3.5	14.5	0.0	2.0	0.0	2.0	0	34E	48E
25	12.7	2.2	7.5	10.5	0.0	1.0	0.0	1.0	0	23E	37E
26	15.3	2.5	8.9	9.1	0.0	T	0.0	T	0	22E	41E
27	14.4	6.6	10.5	7.5	0.0	7.6	0.0	7.6	0	17E	61E
28	16.9	4.5	10.7	7.3	0.0	7.8	0.0	7.8	0		<31
29	18.2	3.4	10.8	7.2	0.0	5.2	0.0	5.2	0	32E	56E
30	9.6	1.2	5.4	12.6	0.0	1.6	0.0	1.6	0	34E	56E
31	16.8	3.5	10.2	7.8	0.0	0.0	0.0	0.0	0		<31
Sum				273.7	0.0	77.0	0.0	77.0			
Avg	14.6	3.7	9.2								
Xtbn	27.0	-3.1							17E	61E	

Daily Data Report for June 2006											
Day	Max Temp °C	Min Temp °C	Mean Temp °C	Heat Deg Days °C	Cool Deg Days °C	Total Rain mm	Total Snow cm	Total Precip mm	Snow on Gnd cm	Dir of Max Gust 10's Deg	Spd of Max Gust km/h
01	12.2	6.2	9.2	8.8	0.0	9.0	0.0	9.0	0		<31
02	18.7	7.5	13.1	4.9	0.0	T	0.0	T	0		<31
03	20.7	7.7	14.2	3.8	0.0	7.6	0.0	7.6	0		<31
04	19.4	10.2	14.8	3.2	0.0	T	0.0	T	0		<31
05	13.1	7.2	10.2	7.8	0.0	24.8	0.0	24.8	0		<31
06	9.2	4.3	6.8	11.2	0.0	1.2	0.0	1.2	0		<31
07	16.3	4.0	10.2	7.8	0.0	T	0.0	T	0		<31
08	16.2	5.0	10.6	7.4	0.0	T	0.0	T	0		<31
09	21.0	5.1	13.1	4.9	0.0	0.0	0.0	0.0	0	17E	32E
10	23.0	11.9	17.5	0.5	0.0	8.4	0.0	8.4	0	14E	32E
11	20.3	10.7	15.5	2.5	0.0	7.4	0.0	7.4	0	16E	41E
12	18.7	11.4	15.1	2.9	0.0	8.2	0.0	8.2	0		<31
13	14.7	6.9	10.8	7.2	0.0	1.8	0.0	1.8	0		<31
14	14.2	7.4	10.8	7.2	0.0	6.0	0.0	6.0	0		<31
15	21.9	9.5	15.7	2.3	0.0	4.0	0.0	4.0	0	8E	46E
16	11.1	6.6	8.9	9.1	0.0	20.6	0.0	20.6	0	35E	59E
17	26.5	9.0	17.8	0.2	0.0	0.0	0.0	0.0	0	23E	54E
18	24.8	12.8	18.8	0.0	0.8	0.0	0.0	0.0	0	23E	54E
19	26.0	12.7	19.4	0.0	1.4	0.0	0.0	0.0	0	23E	61E
20	23.8	12.4	18.1	0.0	0.1	0.0	0.0	0.0	0	20E	54E
21	24.9	14.2	19.6	0.0	1.6	T	0.0	T	0	22E	44E
22	22.6	13.5	18.1	0.0	0.1	0.0	0.0	0.0	0	23E	39E
23	22.7	12.4	17.6	0.4	0.0	1.4	0.0	1.4	0	22E	41E
24	18.6	14.0	16.3	1.7	0.0	10.2	0.0	10.2	0		<31
25	24.6	14.0	19.3	0.0	1.3	4.6	0.0	4.6	0		<31
26	21.9	13.3	17.6	0.4	0.0	1.8	0.0	1.8	0		<31
27	26.5	14.6	20.6	0.0	2.6	2.6	0.0	2.6	0		<31
28	26.2	16.9	21.6	0.0	3.6	1.4	0.0	1.4	0	27E	44E
29	27.4	18.0	22.7	0.0	4.7	T	0.0	T	0	26E	41E
30	28.8	18.2	23.5	0.0	5.5	0.0	0.0	0.0	0	25E	35E
Sum				94.2	21.7	120.8	0.0	120.8			
Avg	20.5	10.6	15.6								
Xtbn	28.8	4.0							23E	61E	

Days when heavy precipitation was recorded during the deployment period