Real Time Water Quality Monthly Report
Peter's River near Botwood
March - April 2007

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 March 14th, 2007 for cleaning and calibration and then reinstalled on March 15th, 2007. The results from comparing the Minisonde values to the Datasonde values during removal and reinstallation on March14th/15th, 2007 can be seen in **Table 1**.

Table 1: QA/QC Data Comparison Rankings upon removal/reinstallation on March 14th/15th, 2007

Station	Date	Action	EPB Datasonde/Minisonde vs. Datasonde Comparison Ranking			
			Temperature	pH	Conductivity	Dissolved Oxygen
Peter's River near Botwood	March 14th, 2007	Removal	Good	Poor	Poor	Poor
	March 15th, 2007	Installation	Good	Excellent	Poor	Excellent

- The instrument was deployed until April 17th (33-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 April 17th, 2007 can be seen in **Table 2**.

Table 2: QA/QC Data Comparison Rankings upon removal on April 17th, 2007

Station	Date	Action	Minisonde vs. Datasonde Comparison Ranking			
			Temperature	pH	Conductivity	Dissolved Oxygen
Peter's River near Botwood	April 17th, 2007	Removal	Excellent	Marginal	Good	Poor

Data Interpretation

- The water temperature (**Figure 1**) increased slightly throughout the deployment period; this is a normal occurrence for this time of year. Temperature values ranged from -0.22˚C to 6.11˚C over the deployment period.

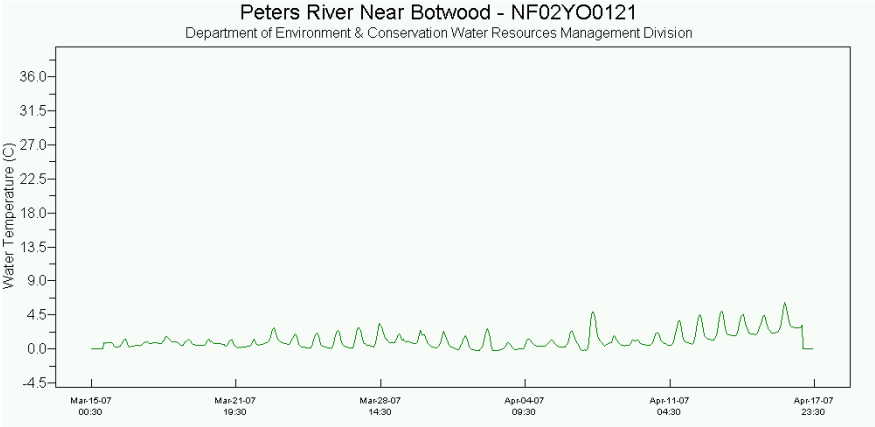

Figure 1

- The dissolved oxygen graph (**Figure 2**) showed fluctuations in dissolved oxygen values over the deployment period. The dissolved oxygen values ranged from 11.33mg/L to 13.08mg/L. All dissolved oxygen values fall within the recommended CCME Protection of Aquatic Life guidelines for dissolved oxygen (cold water/other life stages – above 6.5 mg/L; cold water/early life stages – above 9.5 mg/L; warm water/other life stages – above 5.5 mg/L; warm water/early life stages – above 6 mg/L).

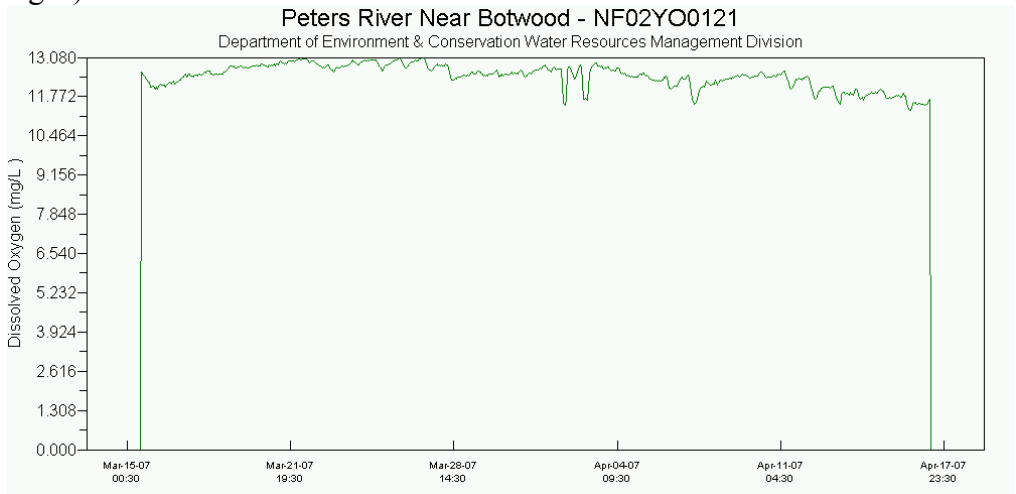

Figure 2

- pH values (**Figure 3**) increased throughout the deployment period between March 15th and April 17th, 2007. The increase in pH is most likely due to the decrease in stage height over the same period. The pH values ranged from 5.78 to 7.48 with most of the values falling within the recommended range (6.5 – 9.0) for the CCME Protection of Aquatic Life Guidelines.

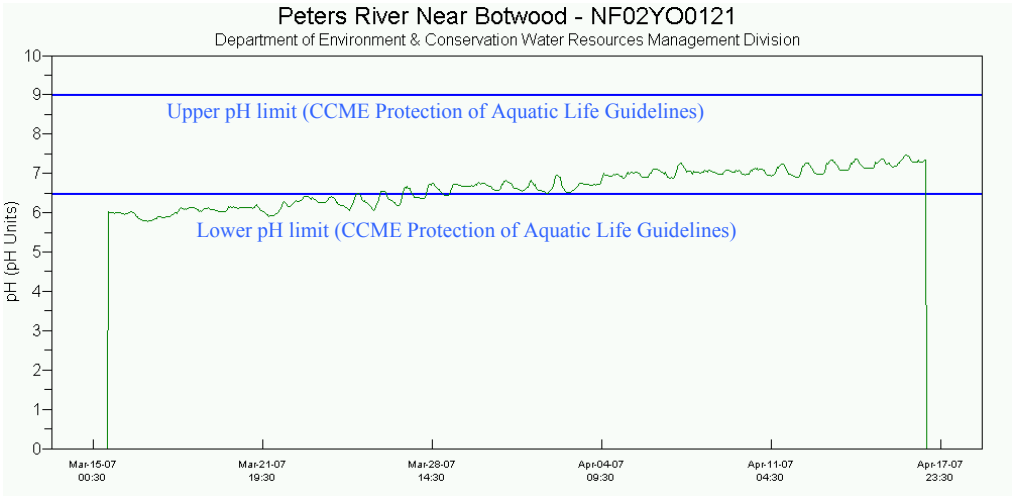

Figure 3

- The majority of the turbidity values **(Figure 4)** remained below 3 NTU which is the typical background concentration for this station. There was one extended period of high turbidity during the deployment period. From 14:30 on April 15th to 16:30 on April 16th turbidity values remained above the normal background conditions of 3 NTU. The maximum turbidity value during this period was 123 NTU.

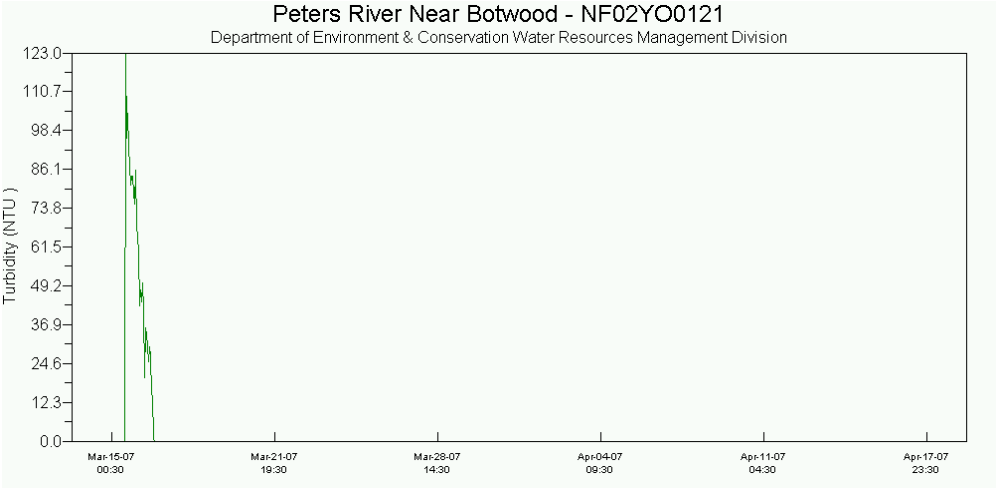

Figure 4

- The conductivity graph **(Figure 5)** showed fluctuations in specific conductance values over the deployment period. Conductivity values ranged from 29µS/cm to 59µS/cm. The changes in conductivity over the deployment period correspond to changes in the stage height.

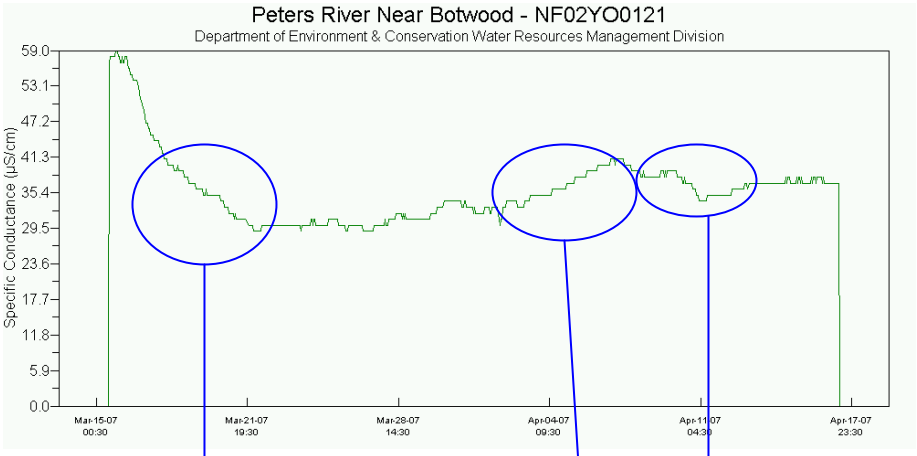

Figure 5

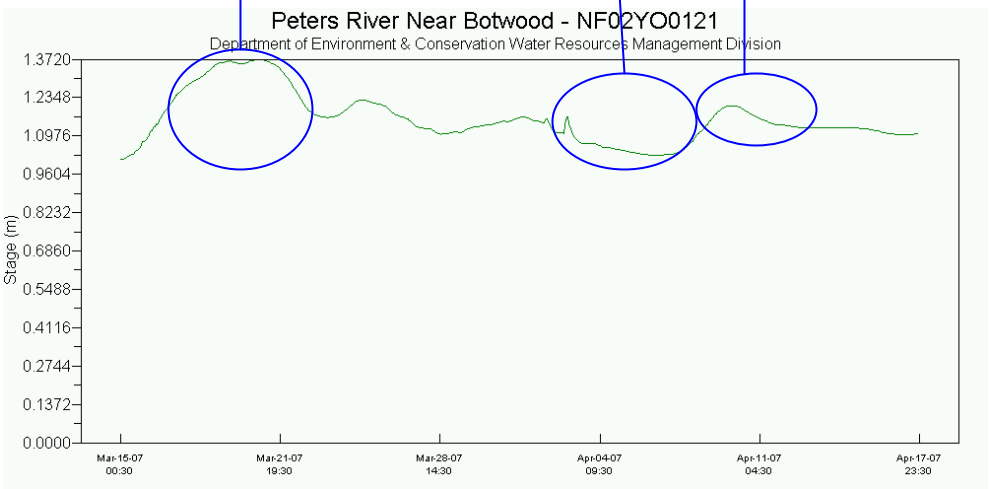

Figure 6

Appendix A: Climate Data for Gander (March & April 2007)

Daily Data Report for March 2007

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 Grnd cm	Dir of Max Gust 10's Deg	Spd of Max Gust km/h
01†	-0.2	-7.7	-4.0	22.0	0.0	0.0	0.0	0.0	120		<31
02†	-2.0	-8.6	-5.3	23.3	0.0	0.0	T	T	116		<31
03†	-1.7	-9.0	-5.4	23.4	0.0	0.0	5.0	4.2	112	13	44
04†	2.5	-4.0	-0.8	18.8	0.0	0.0	0.6	0.6	117		<31
05†	-0.7	-5.9	-3.3	21.3	0.0	0.0	T	T	112	26	35
06†	-1.0	-6.5	-3.8	21.8	0.0	0.0	1.0	0.6	110	22	44
07†	-6.4	-15.5	-11.0	29.0	0.0	0.0	0.4	0.2	109	25	65
08†	-9.5	-17.7	-13.6	31.6	0.0	0.0	0.0	0.0	109	25	46
09†	-9.3	-19.9	-14.6	32.6	0.0	0.0	0.4	0.4	107	27	52
10†	-2.3	-13.7	-8.0	26.0	0.0	0.0	0.0	0.0	107	27	48
11†	7.3	-4.4	1.5	16.5	0.0	0.4	0.0	0.4	106	23	59
12†	3.0	-8.5	-2.8	20.8	0.0	4.4	2.6	6.8	90	33	48
13†	-0.8	-10.5	-5.7	23.7	0.0	0.0	0.0	0.0	88	27	33
14†	5.5	-12.5	-3.5	21.5	0.0	T	0.0	T	87	19	54
15†	6.9	3.6	5.3	12.7	0.0	1.2	0.0	1.2	74	20	63
16†	4.4	-7.4	-1.5	19.5	0.0	0.2	T	0.2	58	29	41
17†	-0.3	-7.7	-4.0	22.0	0.0	0.2	T	0.2	53	10	41
18†	8.9	-0.3	4.3	13.7	0.0	0.6	0.0	0.6	53	15	46
19†	3.0	-7.2	-2.1	20.1	0.0	0.0	T	T	35	21	57
20†	1.5	-7.9	-3.2	21.2	0.0	1.8	2.4	4.2	31	15	56
21†	0.7	-13.6	-6.5	24.5	0.0	0.0	6.2	5.2	36	33	70
22†	1.6	-13.3	-5.9	23.9	0.0	0.0	0.6	0.4	39	20	67
23†	8.6	-4.1	2.3	15.7	0.0	0.2	0.6	0.4	38	26	54
24†	-4.1	-10.2	-7.2	25.2	0.0	0.0	0.4	0.2	32	31	39
25†	0.1	-11.0	-5.5	23.5	0.0	0.0	0.0	0.0	30		<31
26†	2.0	-9.3	-3.7	21.7	0.0	0.0	0.0	0.0	29		<31
27†	3.8	-6.4	-1.3	19.3	0.0	0.0	0.0	0.0	22	34	50
28†	4.4	-3.0	0.7	17.3	0.0	0.0	2.4	2.4	16	28	33
29†	1.4	-1.8	-0.2	18.2	0.0	0.0	10.2	9.8	18	32	44
30†	1.0	-1.8	-0.4	18.4	0.0	0.0	8.0	7.6	24	32	52
31†	0.3	-5.7	-2.7	20.7	0.0	0.0	1.8	1.4	24		<31
Sum				**669.9**	**0.0**	**9.0**	**42.6**	**47.0**			
Avg	**0.9**	**-8.1**	**-3.6**								
Xtrm	**8.9**	**-19.9**								**33**	**70**

Daily Data Report for April 2007

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 Grnd cm	Dir of Max Gust 10's Deg	Spd of Max Gust km/h
01†	-5.6	-8.1	-6.9	24.9	0.0	0.0	1.4	1.0	23	33	52
02†	-3.2	-8.1	-5.7	23.7	0.0	0.0	T	T	22	31	48
03†	-1.1	-7.0	-4.1	22.1	0.0	1.4	4.0	5.2	21	36E	57E
04†	0.9	-1.2	-0.2	18.2	0.0	3.0	1.0	4.2	25	34E	35E
05†	-0.1	-1.5	-0.8	18.8	0.0	0.4	0.2	0.6	22		<31
06†	4.2	-1.6	1.3	16.7	0.0	2.0	0.2	2.2	21		<31
07†	5.5	-2.5	1.5	16.5	0.0	0.0	2.2	2.2	17		<31
08†	4.9	-1.0	2.0	16.0	0.0	2.6	0.6	3.2	16	20	78
09†	1.5	-2.2	-0.4	18.4	0.0	0.0	T	T	13	20	67
10†	1.8	-4.1	-1.2	19.2	0.0	0.0	0.2	0.2	12	27	39
11†	4.4	-6.1	-0.9	18.9	0.0	0.0	T	T	12		<31
12†	4.5	-7.0	-1.3	19.3	0.0	0.0	0.0	0.0	8		<31
13†	5.2	-4.6	0.3	17.7	0.0	0.0	0.0	0.0	6		<31
14†	1.1	-4.3	-1.6	19.6	0.0	0.0	T	T	4	9	33
15†	2.4	-4.0	-0.8	18.8	0.0	0.0	T	T	3	1	39
16†	4.7	-3.2	0.8	17.2	0.0	0.2	0.4	0.6	3	4	35
17†	1.5	-0.2	0.7	17.3	0.0	4.0	0.4	4.6	3	3E	44E
18†	1.3	-0.5	0.4	17.6	0.0	1.0	0.2	1.2	2	4E	52E
19†	2.4	-1.8	0.3	17.7	0.0	0.0	T	T	2	2	54
20†	9.2	-3.2	3.0	15.0	0.0	0.0	T	T	2		<31
21†	3.5	-3.6	-0.1	18.1	0.0	0.0	0.6	0.4	1	34	35
22†	4.9	-4.2	0.4	17.6	0.0	0.0	0.0	0.0	1	32	48
23†	8.0	-2.7	2.7	15.3	0.0	1.4	1.0	3.8	1	20	52
Sum				**424.6***	**0.0***	**16.0***	**12.4***	**29.4***			
Avg	**2.7***	**-3.6***	**-0.5***								
Xtrm	**9.2***	**-8.1***								**20***	**78***

Days when heavy precipitation was recorded during the deployment period of March 15th to April 17th, 2007 are highlighted in red.