

Real Time Water Quality Monthly Report Main River June - July 2007

General

- The RTWQ station at Main River was initially installed on June 15th, 2007. Pictures of the Main River site are in **Appendix A**.

Maintenance and Calibration of Instrumentation

- The instrument at Main River was initially installed on June 15th, 2007. The results from comparing the Minisonde values to the Datasonde values during the initial installation on June 15th can be seen in **Table 1**.

Table 1: QA/QC Data Comparison Rankings upon initial installation on June 15th, 2007

| Station | Date | Action | Minisonde vs. Datasonde Comparison Ranking | | | |
|------------|------------------------------|----------------------|--|-----------|--------------|------------------|
| | | | Temperature | pH | Conductivity | Dissolved Oxygen |
| Main River | June 15 th , 2007 | Initial Installation | Marginal | Excellent | Poor | Excellent |

- Upon removal and redeployment, Minisonde readings were taken for QA/QC purposes. The results from comparing the Minisonde values to the Datasonde values can be seen in **Table 2**.

Table 2: QA/QC Data Comparison Rankings upon removal and reinstallation on August 2nd, 2007

| Station | Date | Action | Minisonde vs. Datasonde Comparison Ranking | | | |
|------------|-------------------------------|--------------|--|------|--------------|------------------|
| | | | Temperature | pH | Conductivity | Dissolved Oxygen |
| Main River | August 2 nd , 2007 | Removal | Good | Good | Poor | Fair |
| | August 2 nd , 2007 | Installation | Excellent | Good | Good | Excellent |

Data Interpretation

- This monthly report interprets the data from the Main River station for the period of June 15th – August 2nd, 2007.
- The water temperature (**Figure 1**) showed a slight increase throughout the deployment period which is expected as this time of the year. This was a strong diurnal pattern detected in the data throughout the months of June and July. The dissolved oxygen (**Figure 2**) showed a corresponding decrease in values with a range of 7.17 – 10.09 mg/L. The dissolved oxygen values fall within the majority of the recommended CCME Protection of Aquatic Life guidelines for dissolved oxygen (cold water/other life stages – above 6.5; warm water/other life stages – above 5.5; warm water/early life stages – above 6; cold water/early life stages – 9.5 mg/L).

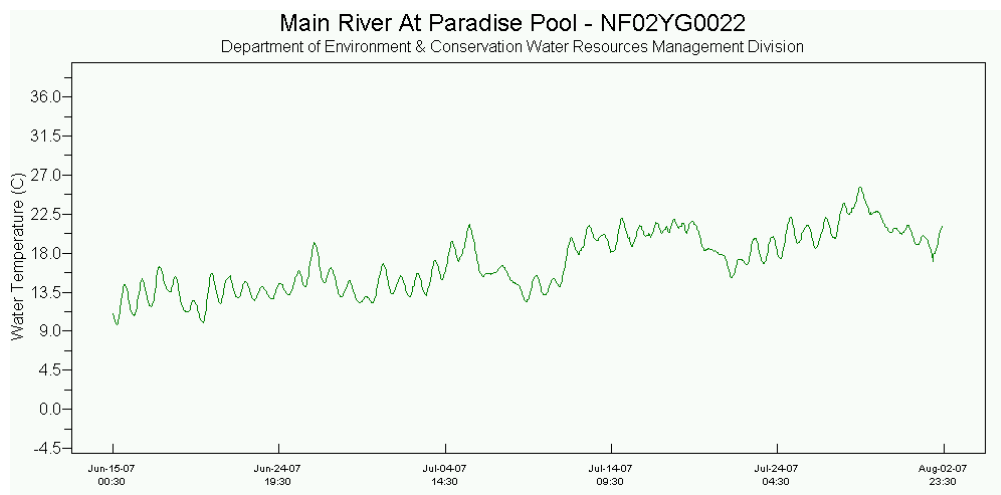


Figure 1

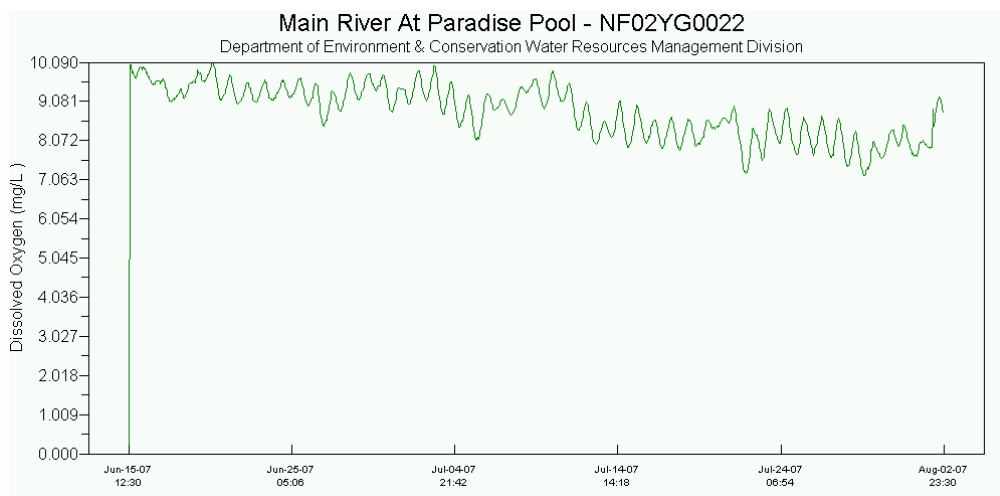


Figure 2

- The pH values (**Figure 3**) for Main River station remained fairly consistent throughout the deployment period. The pH values ranged from 5.49 – 6.34 with all values falling outside the recommended range (6.5 – 9.0) for the CCME Protection of Aquatic Life Guidelines. Due to the remote location of this station it is likely that the low pH values are due to natural causes.

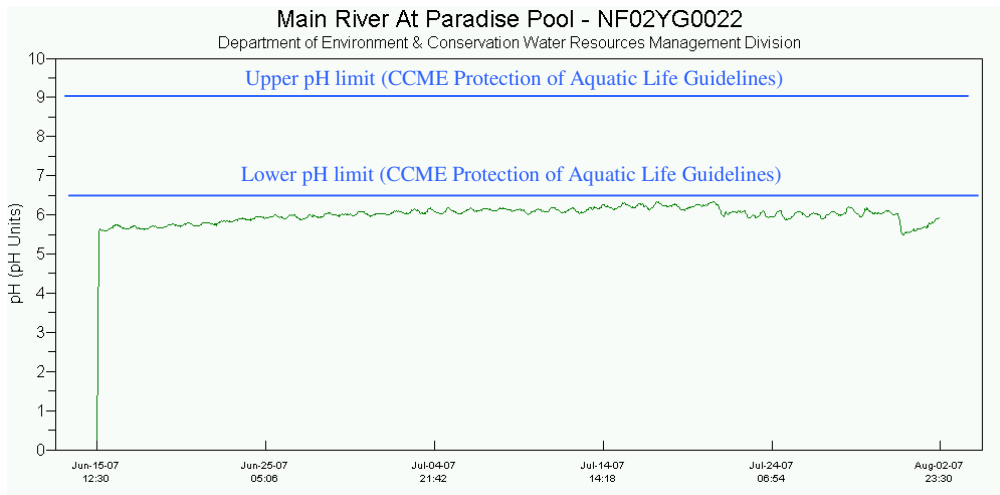


Figure 3

- The specific conductivity values (**Figure 4**) remained fairly consistent throughout the deployment period with the exception of three water quality incidents. In all three incidents there was an increase in stage (**Figure 5**) during the same period of time which could explain the increases seen in conductivity during those times.

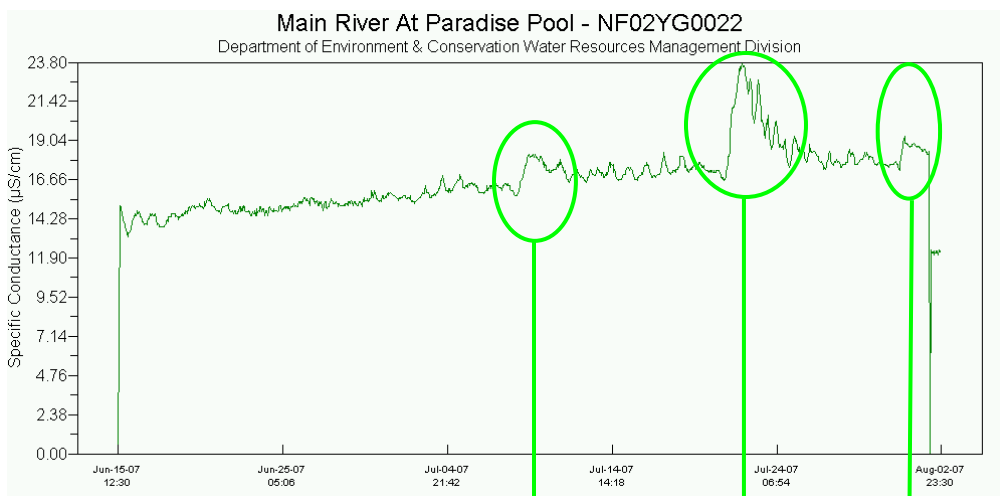


Figure 4

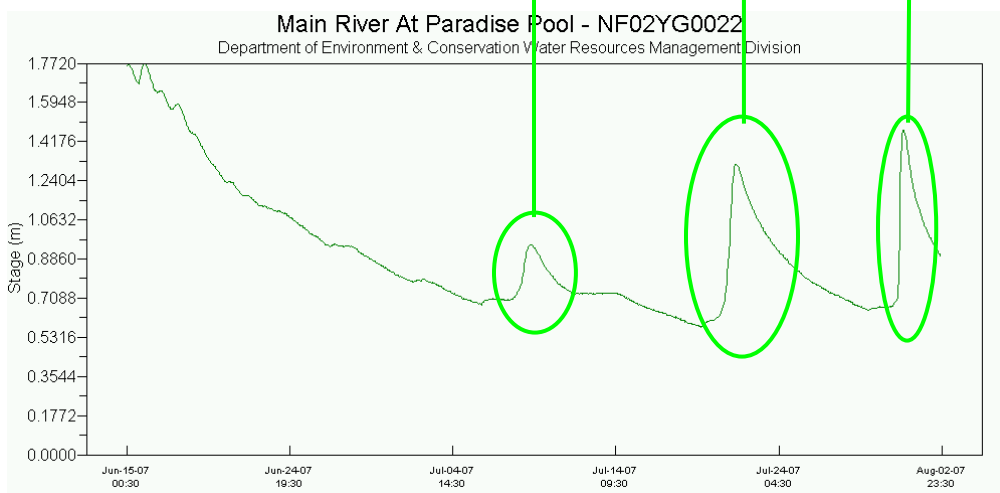


Figure 5

- The turbidity values (**Figure 6**) remained consistent around 0 NTU throughout the deployment period.

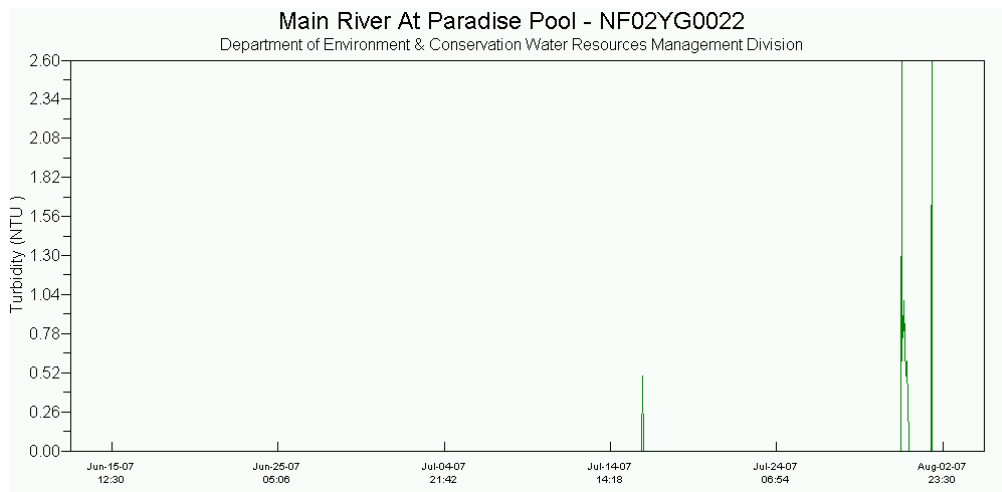


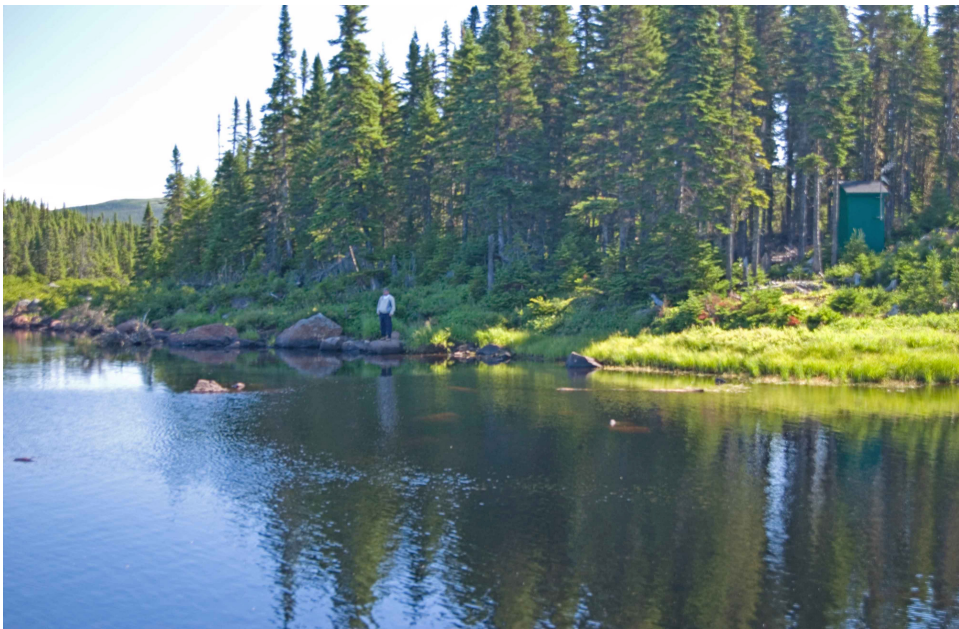
Figure 6

Prepared by: Annette Tobin
Environmental Scientist
Department of Environment and Conservation
PH: (709) 637-2431
FX: (709) 637-2541
annettetobin@gov.nl.ca

Appendix A – Pictures of Main River RTWQ Station



Picture 1: Main River RTWQ Station Location



Picture 2: Main River RTWQ Station Location