

**INTERNATIONAL RAINY RIVER WATER POLLUTION BOARD**  
**INTERNATIONAL RAINY LAKE BOARD OF CONTROL**

**FALL 2007 REPORT**

**Submitted to**  
**The International Joint Commission**  
**September 26, 2007**

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## **BOARD MEMBERS AND STAFF**

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<b>IRLBC Engineering Advisors</b>	Rick Walden PEng	Edward Eaton PE
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<sup>1</sup> Interim appointment

## **1. INTRODUCTION**

The International Rainy River Water Pollution Board (IRRWPB) and the International Rainy Lake Board of Control (IRLBC) report jointly to the International Joint Commission (IJC) in the spring and the fall of each year. Both reports address activities and basin issues of interest occurring since the previous report and may include sections on specific topics under review by the Boards. The fall reports address environmental quality and related issues, while the spring reports address regulation of Rainy and Namakan lakes over the past calendar year.

The two Boards continued to work closely together, holding joint conference calls throughout the year and hosting a joint public meeting in the basin. The public meeting was held in August in International Falls. The Boards also met then with the resource agencies and with representatives from the two pulp and paper companies. Commissioner Allen Olson, with IJC staff members Paul Pilon and Mark Colosimo, attended the meetings along with Board members and staff.

The dry basin conditions that commenced in June 2006 have generally persisted up to the present (mid-September 2007), apart from a return to more normal inflows in June and July of 2007. In spite of this, the level of Namakan Lake has remained within its IJC-specified operating band except for the May 17 to June 10, 2007 period. Rainy Lake has not fared as well, being below its operating band from early October 2006 through mid-March 2007 and again from May 15 to June 11, 2007. A detailed update on basin conditions will be provided in the spring 2008 joint report of the Boards.

## **2. AMBIENT ENVIRONMENTAL MONITORING**

### **2.1 Water Quality Monitoring (MPCA)**

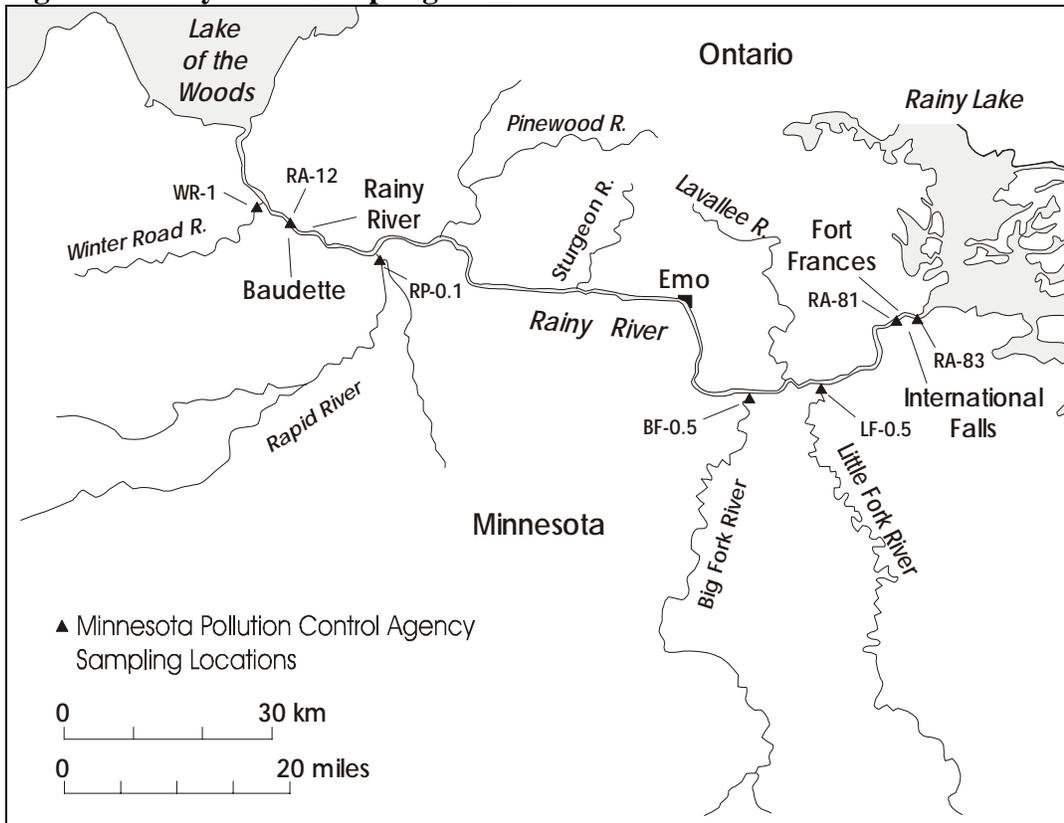
The Minnesota Pollution Control Agency (MPCA) monitors water quality on the main stem of the Rainy River at two long term sampling stations and on five tributaries to the Rainy River (Figure 1). All of these monitoring stations are part of the Minnesota Milestone sampling program, a program that includes fixed station stream monitoring sites throughout the state of Minnesota.

In keeping with the sampling schedule for the Minnesota Milestone program, these sites were last monitored in 2005 and reported on in the Fall 2006 Report. The MPCA Milestone sites are sampled monthly for ten months of two non-consecutive years in a five-year period. The next scheduled sampling year is 2008. Data from the 2008 sampling will be reported in the 2009 Fall Report.

Water samples collected from main stem Rainy River stations and tributaries are analyzed for temperature, dissolved oxygen, turbidity, pH, conductivity, total phosphorus, biological oxygen demand (BOD), nitrate + nitrite, ammonia, chlorophyll a, total suspended solids, volatile solids, *E. coli*, and fecal coliform.

The following sites in Table 1 are the current long-term water quality sampling stations on the main stem of the Rainy River and its tributaries. Data results from the monitoring program can be seen on the MPCA website at <http://www.pca.state.mn.us/data/eda/index.cfm#monitoring>.

**Figure 1. Rainy River Sampling Locations**



**Table 1. MPCA Sampling Locations**

<b>Sampling Agency</b>	<b>STORET Station #</b>	<b>STORET Description</b>
<b>MPCA</b>	RA - 12	Rainy River @ Baudette, MN
<b>MPCA</b>	RA - 83	Rainy River @ Int'l Falls, above dam
<b>MPCA</b>	BAU-0.1	Baudette River @ bridge on MN 11 in Baudette
<b>MPCA</b>	BF - 0.5	Big Fork River @ bridge on MN 11 (4 mi. E of Loman, MN)
<b>MPCA</b>	LF - 0.5	Little Fork River @ bridge on MN 11 (0.5 mi. W of Pelland, MN)
<b>MPCA</b>	RP - 0.1	Rapid River @ Clementson, MN
<b>MPCA</b>	WR - 1	Winter Road River @ bridge on MN 11 (4 mi. W of Baudette, MN)

## **2.2 Water Quality Monitoring (USGS)**

The United States Geological Survey (USGS) sampled five small interior lakes in Voyageurs National Park for total mercury, methylmercury, and field parameters in water year 2006 (October 2005 through September 2006). Ryan, Brown, Shoepack and Peary Lakes were sampled for mercury and field parameters two times (May and July). Agnes Lake also was sampled for mercury in August 2006. The purpose of the sampling, in which the U.S. National Park Service provided funding, is to establish “ambient” conditions of mercury in water in these high-quality headwaters. Results from Shoepack Lake will be used to assess effects of controlled burns or natural fires on lake quality. Results from water year 2006 substantiate the high-quality ambient conditions of these lakes. Specific conductance for all samples collected near the water surface was less than 24 micro Siemens per centimeter (@ 25 deg. C) and pH ranged from 6.0 to 6.8. Total mercury (unfiltered) ranged from 0.86 to 3.58 nanograms per liter (ng/L), which is less than Minnesota’s 6.9 ng/L water-quality standard, similar to the range measured last water year. Total methylmercury ranged from 0.06 to 0.26 ng/l. The sample from Agnes Lake had a concentration of total mercury of 3.05 ng/L and total methylmercury of 0.26 ng/L.

## **2.3 Rainy Basin Condition Monitoring**

### ***Little Fork River Watershed (HUC #09030005):***

The lower reach of the Little Fork mainstem was added to the United States Federal Impaired Waters List [303(d) Report to Congress] for turbidity in 2006. The Total Maximum Daily Load study and report development is scheduled to begin in 2011.

In 2006, the MPCA began the Little Fork/Big Fork Paired Watershed Study designed to provide resource managers with information that will explain why the Little Fork has high sediment concentrations causing the turbidity. 2006 field work included a sediment loading study during the spring runoff and gathering additional morphologic data from both watersheds.

### ***Rainy River Headwaters Watershed (HUC #09030001):***

The White Iron Chain of Lakes Association, in cooperation with stakeholders, and numerous state and federal agencies is leading a volunteer-based, long term, condition monitoring project for the Kawishiwi Watershed. The Kawishiwi is a sub-watershed of the Rainy River Headwaters Watershed. This effort was continued and expanded to include ambient water quality monitoring on five lakes and five stream sites, heavy metals monitoring on two lakes and biota monitoring at several sites.

## **2.4 Fish Consumption Advisories**

Fish consumption advisories are issued based on fish tissue monitoring carried out by provincial and state agencies in Ontario and Minnesota. In Minnesota, it is a shared program between the Minnesota Department of Natural Resources (MDNR) and the Minnesota Department of Health (MDH), while in Ontario it is a shared program with the Ministry of Natural Resources (OMNR) and the Ministry of Environment (OMOE).

## *Minnesota*

Each year, the MDNR collects fish from lakes and rivers for testing. Fish fillets are tested for mercury and in some cases polychlorinated biphenyls (PCBs). The MDNR, the MPCA, and the MDH collaborate to select sites where fish are tested. The MPCA also screens fish for other chemical contaminants that may be of concern. The MDH issues fish consumption advice based on the concentrations of chemicals measured in fish fillets. The concentrations that trigger fish consumption advice are listed in Tables 2 and 3.

**Table 2. Consumption Advice - Mercury**

<b>Meal Advice</b>	<b>General Population (ug/g mercury)</b>	<b>Women of Child-bearing Age and children under 15 years (ug/g mercury)</b>
Unlimited consumption	< 0.16	< 0.05
1 meal / week	0.16 - 0.65	0.06 - 0.2
1 meal / month	0.66 - 2.8	0.21 - 1.0
Do not eat	> 2.8	> 1.0

**Table 3. Consumption Advice - PCBs**

<b>Meal Advice</b>	<b>(ug/g PCB)</b>
Unlimited consumption	< 0.05
1 meal / week	0.06 - 0.2
1 meal / month	0.21 - 1.0
1 meal / two months	1.1 - 1.9
Do not eat	> 1.9

Currently MDH issues consumption advisories based on mercury for Rainy Lake, Rainy River, Little Fork River, Big Fork River, and Lake of the Woods. Consumption advice for the Vermillion River is based on levels of PCBs and mercury. There have been no changes to consumption guidelines included in the Fall 2005 report. Detailed information can be found at <http://www.health.state.mn.us/divs/eh/fish/index.html>.

## *Ontario*

The Guide to Eating Sport Fish in Ontario is published every other year by the Ministry of the Environment in cooperation with the Ministry of Natural Resources. Skin-off fillets are analyzed for a variety of contaminants that may include mercury and other metals, DDT, PCBs, PCB congeners, mirex/photomirex, pesticides, chlorinated phenols, chlorinated benzenes, polycyclic aromatic hydrocarbons (PAHs), dioxins/furans and dioxin-like PCBs. Results are used to develop tables in the Guide, which give size-specific consumption advice for each species tested at each location. Consumption advice is based on health protection guidelines developed by Health Canada. The 2007-2008 Guide contains important information on consumption of sport fish for both the general population and the sensitive population of women of child-bearing age and children under 15. Examples of chemical concentrations that trigger consumption restrictions are as follows:

**Table 4. Examples of Ontario Consumption Advice Restrictions**

Contaminant	Restrictions Begin	Total Restriction
Mercury (ug/g)	0.61	1.84
Mercury (ug/g) <sup>1</sup>	0.26	0.52
Total PCBs (ug/g)	0.153	1.22
Dioxin-like PCBs (pg/g) TEQ <sup>2</sup>	1.62	12.96
Dioxins/Furans (pg/g) TEQ <sup>2</sup>	1.62	12.96

1. Concentrations for women of child-bearing age and children under 15 years of age

2. TEQ is the toxic equivalent of 2,3,7,8-TCDD

Advisories restricting fish consumption remain in effect for Rainy Lake, Rainy River, and Lake of the Woods. These advisories are mainly a result of mercury concentrations in fish tissue, but depending on location they may also be based on concentrations of PCBs, mirex/photomirex, pesticides, dioxans/furans or chlorinated phenols and chlorinated benzenes. Fish consumers should consult the “2007-2008 Guide to Eating Ontario Sport Fish” for more detailed information. The Guide can be accessed at [www.ene.gov.on.ca/envision/guide/index.htm](http://www.ene.gov.on.ca/envision/guide/index.htm).

## 2.5 Environmental Effects Monitoring (EEM)

Through federal legislation, the Environmental Effects Monitoring program requires pulp and paper mills in Canada to monitor the effects of pulp and paper mill discharges in receiving waters. Study components include an adult fish survey, a benthic invertebrate survey, and toxicological testing of final effluent. The EEM program consists of a series of monitoring and interpretation cycles that build on the findings from previous cycles. Since the regulations came into effect, the Fort Frances mill has completed 4 cycles of the program.

The Cycle 4 study for Abitibi-Consolidated included a fish survey, benthic invertebrate survey and sub-lethal toxicity testing of mill process effluent. The field investigations for Cycle 4 were conducted from September 18-21, 2006 while the mill was operating normally. The report was submitted on April 1, 2007 to Environment Canada.

The fish survey was conducted using Iowa darter and mottled sculpin as sentinel species. Key endpoints measured included length, weight, age, and relative liver and gonad size. The reference area data suggested that environmental factors other than mill effluent may be affecting male fish gonad weights. There were no differences between reference and exposed fish for growth, liver weight or female gonad weight.

The Cycle 4 benthic invertebrate survey utilized the same gradient design as used in Cycle 3. The benthic community of the Rainy River was generally indicative of good water/habitat quality. Key endpoints included abundance, taxa richness, Simpson’s Evenness and Bray-Curtis Index of Diversity. In Cycle 4, abundance increased with distance from the effluent outfall while in previous cycles it was highest near the outfall. This implies a recovery of the benthic community in the near-field environment. Taxa richness increased substantially in the lower reaches of the study area.

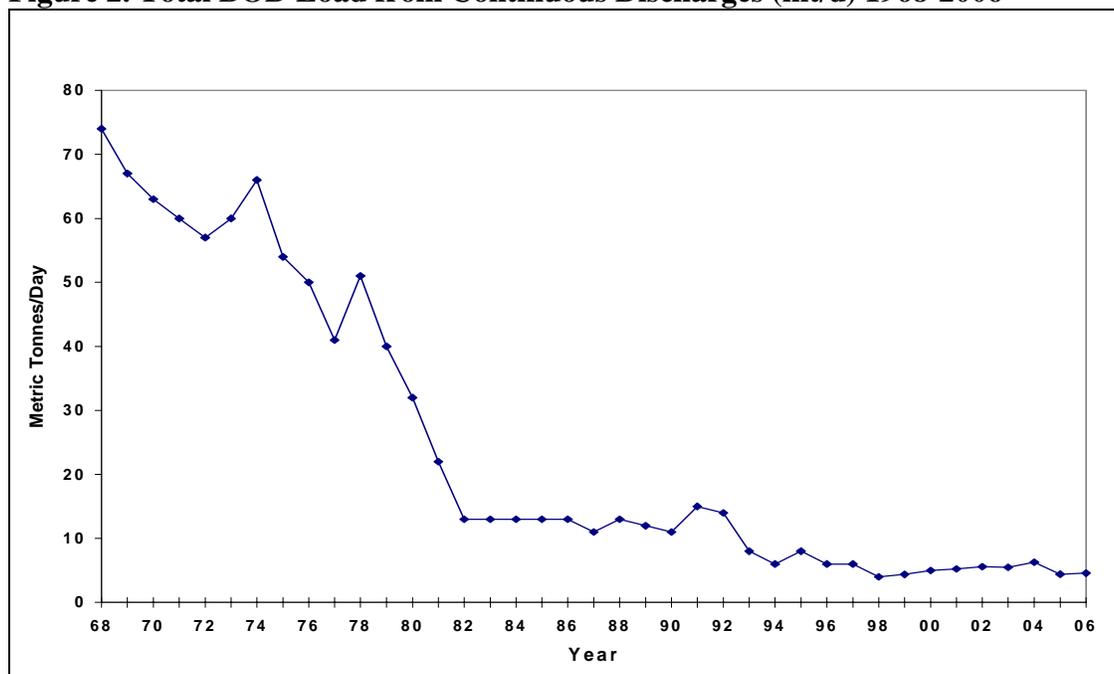
Sub-lethal toxicity testing of final effluent was undertaken and there was no impairment for survival of fathead minnows or *Ceriodaphnia dubia* exposed to undiluted effluent. *Ceriodaphnia dubia*

reproduction results were generally comparable to Cycle 3 while fathead minnow and *Selenastrum capricornutum* showed increase in overall growth inhibition in Cycle 4 compared to Cycle 3.

### **3. POINT SOURCE DISCHARGES**

As indicated in the recent Board reports, point source discharges to the Rainy River from municipal and industrial sources have remained relatively constant from a loadings perspective and will probably remain fairly steady at current levels in the foreseeable future. The dramatic decreases in loading, for the conventional parameters such as BOD and TSS from the 1960's to the early 1980's are the direct result of remedial measures undertaken by industry and municipalities. Figure 2 documents this historical downtrend of BOD from municipal and industrial sources. With no other significant remedial measures planned, BOD loads to the Rainy River will likely continue at or around the current levels.

**Figure 2. Total BOD Load from Continuous Discharges (mt/d) 1968-2006**



#### **3.1 Minnesota Municipal Sources**

##### **North Koochiching Sanitary Sewer District:**

The District, which includes International Falls, discharges to the Rainy River downstream of International Falls. The District reported no violations to its discharge permit for the calendar year 2006. Discharge data from this facility are shown in Table 5 for the years 1996 through 2006. Note that data in Table 5 will have minor differences from previous North Koochiching discharge summaries. These corrections were made to ensure consistency and accuracy of data.

**Table 5. North Koochiching Sanitary Sewer Average Annual Discharge Summary**

<b>Year</b>	<b>Flow (m<sup>3</sup>/d)</b>	<b>BOD (kg/d)</b>	<b>TSS (kg/d)</b>
1996	6813	89.7	50.4
1997	4921	77.4	38.6
1998	5349	77.1	32.4
1999	5149	70.0	35.0
2000	4245	54.6	26.7
2001	4920	64.3	35.4
2002	4538	71.0	35.2
2003	3191	47.1	20.2
2004	4397	43.4	19.0
2005	4781	51.6	24.6
2006	3794	46.2	18.6

***Baudette***

The Baudette wastewater treatment facility has a lagoon system that discharges seasonally to the Rainy River. The facility discharged during May, June, and October of 2006. The total discharge during that period was 184,530 m<sup>3</sup>. Monthly discharges are shown below in Table 6. During discharge periods, BOD and TSS were within the National Pollutant Discharge Elimination System Permit (NPDES) limits of 25 mg/L and 45 mg/L, respectively. Average BOD and TSS concentrations during discharge were 11.6 mg/L and 28.5 mg/L. The NPDES Permit for the Baudette facility does not have a limit for total phosphorus. Average total phosphorus concentrations during discharge were 1.80 mg/L.

**Table 6. Baudette Waste Water Treatment Facility Monthly Discharge in m<sup>3</sup>**

<b>Year</b>	<b>April</b>	<b>May</b>	<b>June</b>	<b>July</b>	<b>Aug</b>	<b>Sept</b>	<b>Oct</b>	<b>Nov</b>
2004	0	144,235	28,847	0	0	96,157	67,310	38,463
2005	57,690	0	96,150	0	0	38,460	57,690	67,305
2006	0	69,150	67,305	0	0	0	48,075	0

**3.2 Ontario Municipal Sources*****Fort Frances***

A rebuild and upgrade of the Fort Frances wastewater treatment plant was completed in January 1998 to include secondary treatment and phosphorus removal. The result of improved treatment is indicated in the 1998 discharge data in Table 7 which includes two years of pre-secondary treatment and eight years of secondary treatment. The plant operated throughout 2006 within the Ministry of Environment guidelines of 25 mg/L for both BOD and TSS. Average concentrations in 2006 were 3.54 mg/L BOD and 9.73 mg/L TSS, both well within the 25 mg/L limit. There weren't any bypass events during 2006.

**Table 7. Fort Frances Wastewater Treatment Plant Average Annual Discharge Summary**

<b>Year</b>	<b>Flow (m<sup>3</sup>/d)</b>	<b>BOD (kg/d)</b>	<b>TSS (kg/d)</b>
1996	8940	211	449
1997	7240	323	447
1998	6500	52	76
1999	8280	48	56
2000	6973	48	55
2001	8144	46	90
2002	7549	52	88
2003	6281	44	71
2004	7791	59	89
2005	8684	30	80
2006	7249	27	74

***Emo***

The Town of Emo has a seasonal discharge from its sewage lagoon to the Rainy River. During 2006, a total of 165,402 m<sup>3</sup> was discharged to the river over 43 discharge days for the year. BOD and TSS were within the provincial discharge guidelines of 40 mg/L and 30 mg/L, respectively, during discharge periods. Average BOD and TSS concentrations during discharge were 6.73 mg/L and 14.06 mg/L.

***Manitou Rapids***

The sewage lagoon operated by Rainy River First Nations at Manitou Rapids was sampled by Health Canada on two occasions during 2006. Table 8 indicates that there were no exceedances of Federal guidelines on either occasion. After the October results were received, the tested cell (the “West” cell) was slowly discharged over a 3-week period.

**Table 8. Manitou Rapids Lagoon Test Results 2006 (mg/L)**

<b>Parameter</b>	<b>May 9, 2006</b>	<b>October 10, 2006</b>	<b>Federal Guidelines</b>
Total Phosphorus	1.0	0.95	1.0
BOD	2	3	20
Phenols	0.002	0.001	20
TKN	5.56	2.64	None
TSS	<2	4	25

***Barwick***

There were 12,753 m<sup>3</sup> of effluent discharged from the lagoon to the Rainy River over a 51-hour period in 2006. During this discharge period, BOD averaged 11.5 mg/L and TSS averaged 21 mg/L.

### *Rainy River*

The Town of Rainy River discharged a total of 178,277 m<sup>3</sup> from its lagoon to the Rainy River during 2006. During the discharge period, BOD averaged 9.8 mg/L and TSS averaged 15.2 mg/L, both below the provincial guidelines of 40 mg/L and 30 mg/L, respectively.

### **3.3 Minnesota Industrial Sources**

#### *Boise Paper Solutions - International Falls*

Discharge data from 1996 to 2006 including effluent flow, BOD, TSS, and AOX for the Boise Paper Solutions mill in International Falls is provided below in Table 9. There were no National Pollutant Discharge Elimination System permit violations in calendar year 2006. Dioxins and furans in mill effluent samples were below the detection limit of 10 parts per quadrillion (ppq) in 2006.

The current National Pollutant Discharge Permits for the Boise Paper Solutions facility will expire in 2009.

**Table 9. Boise Paper Solutions Annual Average Discharge Data**

	<b>Flow (m3/d)</b>	<b>BOD (kg/d)</b>	<b>TSS (kg/d)</b>	<b>AOX (kg/d)</b>
<b>Permit Limit</b>	N/A	4,720	7,940	N/A
1996	120,363	1,500	3,750	762
1997	114,686	1,150	2,230	615
1998	158,242	1,129	2,156	611
1999	149,368	1,537	2,105	506
2000	158,837	789	1,183	805
2001	135,768	645	1,079	NA
2002	160,484	747	1,584	NA
2003	143,164	956	2,094	NA
2004	150,496	1,884	3,978	NA
2005	150,325	1,134	1,810	267
2006	151,358	561	1,161	232

### **3.4 Ontario Industrial Sources**

#### *Abitibi-Consolidated Inc. - Fort Frances*

Data on flow, BOD, TSS, and AOX are provided in Table 10 for the years 1996 through 2006. The average annual daily loads for BOD, TSS and AOX in 2006 continue to be well below compliance levels. Abitibi had no reported spills or uncontrolled discharges at the Abitibi lagoons in 2006.

**Table 10. Abitibi-Consolidated Inc. Average Annual Discharge Data**

	<b>Flow (m3/d)</b>	<b>BOD (kg/d)</b>	<b>TSS (kg/d)</b>	<b>AOX (kg/d)</b>
<b>Compliance Limit</b>	N/A	5990	9420	956
1996	84800	3330	4790	271
1997	84900	3350	5320	284
1998	59700	2290	3150	140
1999	86469	2700	5300	272
2000	91129	4139	6563	274
2001	88184	4484	6216	234
2002	87954	4701	6635	233
2003	88899	4429	5362	212
2004	80068	4279	5152	221
2005	79966	3199	4204	187
2006	78470	3936	4435	179

## **4. BASIN ACTIVITY UPDATE**

Background information on other activities occurring in the basin is summarized below. Some of the activities involve members of the IRRWPB and IRLBC in their agency roles, while others are summarized to provide an overview of the types of initiatives that are currently taking place by other agencies and/or interest groups.

### **4.1 Hydropower Peaking**

As reported in the Spring 2007 Report, the Peaking Work Group established the 2007 spring spawning period from April 15<sup>th</sup> through June 30<sup>th</sup>. The work group had previously determined that there would be no hydropower peaking during the spring spawning period.

The work group met in June to review spawning conditions and determine if the 2007 spawning period end date should remain June 30 or if conditions indicated the need to increase or decrease the period. All members agreed that the 2007 period end date should remain June 30.

The work group will meet in the fall of 2007 to review the success of the 2007 spawning period determination process and to make any changes necessary for the 2008 determination process.

### **4.2 Pine Island Peat Mining Project**

The IRRWPB sent a letter dated January 19, 2007 to the Minnesota Pollution Control Agency (MPCA) outlining the recommendations of the Board suggesting monitoring and reporting of mercury in rivers. The IRRWPB contacted the MPCA by telephone in June 2007 to track progress on their response. MPCA thanked the Board for the reminder. To date, the Board has not received an official response. The proponent proposes to start preparing the site this year. It is expected that actual mining of peat will not start for 2 to 3 years.

### **4.3 Proposed Namakan River Hydropower Developments**

On January 4, 2006, the Ontario Government announced an expansion of the province's supply of renewable energy through new development of waterpower sites on Crown land. Three potential development sites were announced on the Namakan River which is located wholly within Ontario: High Falls, Hay Rapids and Myrtle Falls. The sites are downstream from and do not include the waterfall at the northern outlet of Lac La Croix. There is no proposal to change water levels on the boundary waters.

The proponent for all three sites is Ojibway Power and Energy Group Ltd., which is a partnership between Chant Construction of Aurora, Ontario, and the Lac La Croix First Nation located at the head of the Namakan River in Ontario.

The Boards have been informed that the proposals are subject to environmental assessment requirements under the Environmental Assessment Acts of both Ontario and Canada. As a result, studies on hydrology, geology, fisheries, aquatic environment and water quality have commenced for the sites. The environmental screening process is expected to continue through to the end of 2008 or early 2009. Two main periods of formal public review and input are anticipated to be publicly advertised: one in summer 2008 and another in late fall 2008. In the meantime the public may comment to the proponent at any time via their website ([www.opeg.ca](http://www.opeg.ca)).

The proposed hydropower developments on Namakan River were a topic of keen interest at the Boards' public meeting in International Falls, Minnesota on Aug. 21, 2007. In response to public concerns, Commissioner Olson agreed to recommend to his fellow Commissioners that the IJC alert both federal Governments that the Namakan hydropower proposals are a growing issue in the basin. He noted, however, that the IJC has no authority to act unless the issue is referred to the IJC by the governments of the U.S.A. and Canada.

### **4.4 Rainy Lake and Namakan Reservoir Environmental Monitoring Workgroup**

In the Spring 2007 Report the Boards noted that the IJC had proposed a six member team to develop a Plan of Study (POS), addressing the concerns raised in the Boards' memorandums, that would outline the monitoring and analysis required to lead to a scientifically defensible review of the 2000 Order by the year 2015. As requested by the IJC, the Boards provided a list of potential candidates to the Commission in a letter dated March 9, 2007.

At the Boards' meeting with resource agencies (Section 4.7) IJC staff indicated that the Commission is expected to act soon to appoint POS team members.

The Rainy Lake and Namakan Reservoir Working Group reports that:

- Funding has been secured for an investigation (USGS/NPS) of nutrient cycling in relation to changes in water levels in Kabetogama Lake. The study will be conducted from 2008 through 2010.

- Funding has been secured for an analytical modeling project (USGS/NPS) that will produce both statistical models of the response of key components of the Rainy Lake – Namakan Reservoir ecosystem to water level fluctuations and a synthesis interpreting all of the relevant scientific information regarding the effects of water level management on components of the Rainy Lake – Namakan Reservoir ecosystem.
- Pilot field work was begun for an investigation of the effects of reservoir management on lake sturgeon in the Namakan Reservoir, for which funding has been secured by the NPS for 2008-2010. In addition, the OMNR is participating in an environmental assessment of sturgeon on the Namakan River that should complement the NPS sturgeon study.

#### **4.5 IJC International Watersheds Initiative - Rainy River Modeling**

In the Spring 2007 Report to the IJC, the Boards provided an update on the status of the development of a computer hydraulic model of the Rainy River from International Falls – Fort Frances to Lake of the Woods under the Watersheds Initiative. This work is being accomplished by the U.S. Army Corps of Engineers under Amendment 15 of the 1998 Memorandum of Agreement between the U.S. Section of the IJC and the U.S. Department of the Army. It is the Boards' understanding that the work has encountered some minor delays associated with satisfaction of Corps review comments by the LIDAR survey contractor, improvements to the model's calibration and completion of an independent technical review of the model. The Boards understand that completion of the work and submission of a final report to the IJC is now expected by the end of October 2007. The IJC was provided with progress reports on the work this year by the Corps of Engineers on January 25, August 30 and September 17.

#### **4.6 Emerging Issues**

##### *Aquatic Invasive Species*

In the summer of 2006, spiny waterfleas were identified in Rainy Lake and the Namakan Chain. Minnesota DNR designated the Namakan Chain, Rainy Lake, Rainy River and Lake of the Woods as waters infested with spiny waterfleas in January 2007. In the summer of 2007 waterflea populations were confirmed in Lake of the Woods.

#### **4.7 Meetings**

This section contains brief summaries of key meetings and tours attended by the Boards and their staff during the reporting period.

##### *Board Conference Calls and Meetings*

The Boards met in Washington D.C. on April 18 and held five joint conference calls on June 5, June 28, August 15, September 5 and September 20. While much of the meeting in Washington focused on the presentation to the IJC, there also was significant discussion about spawning criteria (particularly water temperature) for walleye and sturgeon in the Rainy River. The conference calls addressed: correspondence with the IJC, the change in ownership of the Abitibi Fort Frances outlet works, the

spring spawn on the Rainy River, summer basin meeting planning (including basin conditions, advertising of the public meeting, the Prairie Portage inspection tour and arrangements for the public, , Companies and resources agencies meetings ), the Rainy Lake Conservancy submission regarding the proposed Namakan River hydropower developments and the Board/IJC role regarding the issue, basin studies (with their related funding issues), and preparing for the fall semiannual report, meeting with the IJC in Ottawa, and initial discussions about the governance for Lake of the Woods water quality. Additionally, at the meeting, on the conference calls, and via email, the Boards dealt with basin conditions and regulation under the February 27, 2007 Supplementary Order issued by the IJC to address the drought conditions.

Several Members and staff also attended the ManOMin Watershed Conference in International Falls on April 10-12, at which staff gave a presentation on the IJC and the Boards.

### ***IJC Spring Semi-Annual Meeting – April 18, 2007***

IRLBC and IRRWPB members and staff attended the spring semi-annual meeting of the IJC in Washington DC. The Boards' presentation to the IJC addressed lake regulation, ongoing and emerging basin issues, projects under the IJC's "Watersheds Initiative" program and planned summer meetings. The basin issues component addressed hydropower peaking and rule curve monitoring, while emerging issues included proposed plans for hydropower on the Namakan River and the potential effects of Rainy River turbidity and nutrient loads on Lake of the Woods water quality.

### ***IRLBC/IRRWPB Joint Annual Basin Meetings – August 21-23, 2007***

The Boards held their seventh joint annual meetings in the Rainy-Namakan basin on August 21 and 23 to discuss water issues in the Rainy-Namakan and Rainy River basins. The meetings consisted of an afternoon meeting with the dam operators (Boise and ACI) followed by an evening public meeting on the 21st. As with last year, the boards decided to have only one public meeting to maximize Board availability for other meetings. A tour to inspect Prairie Portage dam site in the upper part of the Rainy basin was led by representatives of the U.S. Forest Service, Superior National Forest on August 22. A meeting with resource agencies in the basin occurred the following morning on August 23. The meetings were held in International Falls, Minnesota at the Rainy River Community College (public meeting) and at the Holiday Inn (meetings with dam operators and resource agencies). IJC Commissioner Allen Olson (United States) and several IJC staff were in attendance at all of the aforementioned meetings.

### **Dam Operators Meeting**

At the meeting with the dam operators on the afternoon of August 21, Boise and ACI representatives presented a summary of their regulation activities and dam operations during the preceding twelve months as well as an update on dam maintenance and safety activities, data collection and public information efforts. There was some discussion about the dam operations and reporting related to the Abitibi-ACH ownership change. No significant issues were identified and no comments had been received from the public on regulation. The Boards reported few public comments on water levels on either Rainy Lake or the Namakan Chain of lakes. One comment received from a Rainy Lake resident

had encouraged the Boards not to lose focus of the potential for high water, during the brief late May and early June runoff period that returned Rainy Lake back to within its IJC rule curve band.

The Boards requested copies of the companies' emergency action and response plans and suggested that the companies exchange them with each other. The Boards acknowledged the cooperation received from the companies in participating in the six-member dialog group responsible for working collaboratively toward a common goal of limiting hydropower peaking during the spring spawning periods on the Rainy River. The Boards also expressed appreciation for the companies' cooperation in monitoring dissolved oxygen concentrations throughout the low flow conditions in the Rainy River.

### Public Meeting

The public meeting began at approximately 7:00 PM on August 21. There were more people in attendance than for the 2006 meeting, including many residents from both the US and Canada, resource managers from both countries and several media reporters. Following introductions, the Boards gave a brief presentation that included an update on some of the water quality issues discussed earlier in this report and those related to drought conditions, a summary of the partnership for spring spawning success, news about the potential problem with the invasive spiny water flea, a review of basin conditions (both lakes were in their respective rule curve bands, but with conditions becoming dry in August), and an update on Rainy River hydraulic modeling and associated work being accomplished for the IJC by the U.S. Army Corps of Engineers.

Following the presentation, the boards opened the meeting to hear comments and to answer questions from the public; many significant comments, concerns, and questions centered on the issue of the proposed Namakan River hydroelectric projects. Several attendees had expectations about the roles of the Boards and IJC in this matter. In response to several questions and much discussion about the proposed project, Commissioner Olson stated that he would recommend to his fellow Commissioners that the IJC alert the federal Governments about the public concern on this issue, but reminded the audience that the IJC has no authority to act until informed officially by the governments of U.S. and Canada to do so (please see Section 4.3).

### Resource Agencies Meeting

At the invitation of the boards, a meeting was held on the morning of August 23 with representatives of local resource agencies and other governmental organizations that have responsibility for water resources information and management within the Rainy River basin. In attendance were representatives from the U.S. Voyageurs National Park, U.S. Geological Survey, Ontario Ministry of Natural Resources, Minnesota Department of Natural Resources, Minnesota Pollution Control Agency, Lake of the Woods Land and Water Planning and Koochiching County Environmental Services.

Ryan Maki and Steve Windels, Voyageurs National Park Service, briefed the Boards on nutrient relations, cycling and proposed modeling and on recent lake sturgeon surveys for migration.

Commissioner Olson advised the group that Lake of the Woods is expected to be listed by Minnesota as an impaired water for nutrients, such as phosphorus. He also reiterated the IJC position regarding the proposed hydropower developments on the Namakan River (see "Public Meeting" above).

Kate Miller (Superintendent, Voyageurs National Park), co-chair of the “Rainy Lake and Namakan Reservoir Environmental Monitoring Work Group”, provided some comments on the status of the ongoing efforts of resource management agencies in the basin to identify impacts of the 2000 rule curves on the biological and aquatic communities, and to provide an adequate source of information for future reviews. She mentioned data gaps and reminded the Boards that the socioeconomic analysis and the analysis of downstream effects have yet to be started. Superintendent Miller pointed out to the Boards and Commissioner Olson that the committee tasked with scoping these reports (the Plan of Study team) by April 2008 has not been appointed nor have any moneys been secured for the committee’s expenses. Larry Kallemeyn (retired U.S. Geological Survey, International Falls, MN) is available to help in the data analysis, but would need funding to defray costs. Mark Colosimo suggested that some FY2007 funding might be available for the monitoring planning.

Overall, the meeting with the resource agencies and others was well received by all and fits well with the IJC’s Watersheds Initiative objective of facilitating and improving trans-boundary information awareness and sharing. The Boards intend to continue holding this type of meeting as a regular part of their annual basin meetings.