



Ottawa River
Regulation
Planning Board

Commission de planification
de la régularisation
de la rivière des Outaouais

Ottawa River Levels

Facts and Processes

MNRF Pembroke
District
John Swick
Christina Davis

Ontario Power
Generation
Marc Bisson

Ottawa River Regulation
Secretariat
Manon Lalonde
Michael Sarich

Presentation Overview

- Ottawa River Watershed and principal reservoirs
- Ottawa River Regulation Planning Board
- Factors affecting water levels
- Regulation process in place
- Communicating hydrologic forecasts
- Concluding words

Ottawa River Watershed



SPRING FLOODS VARY

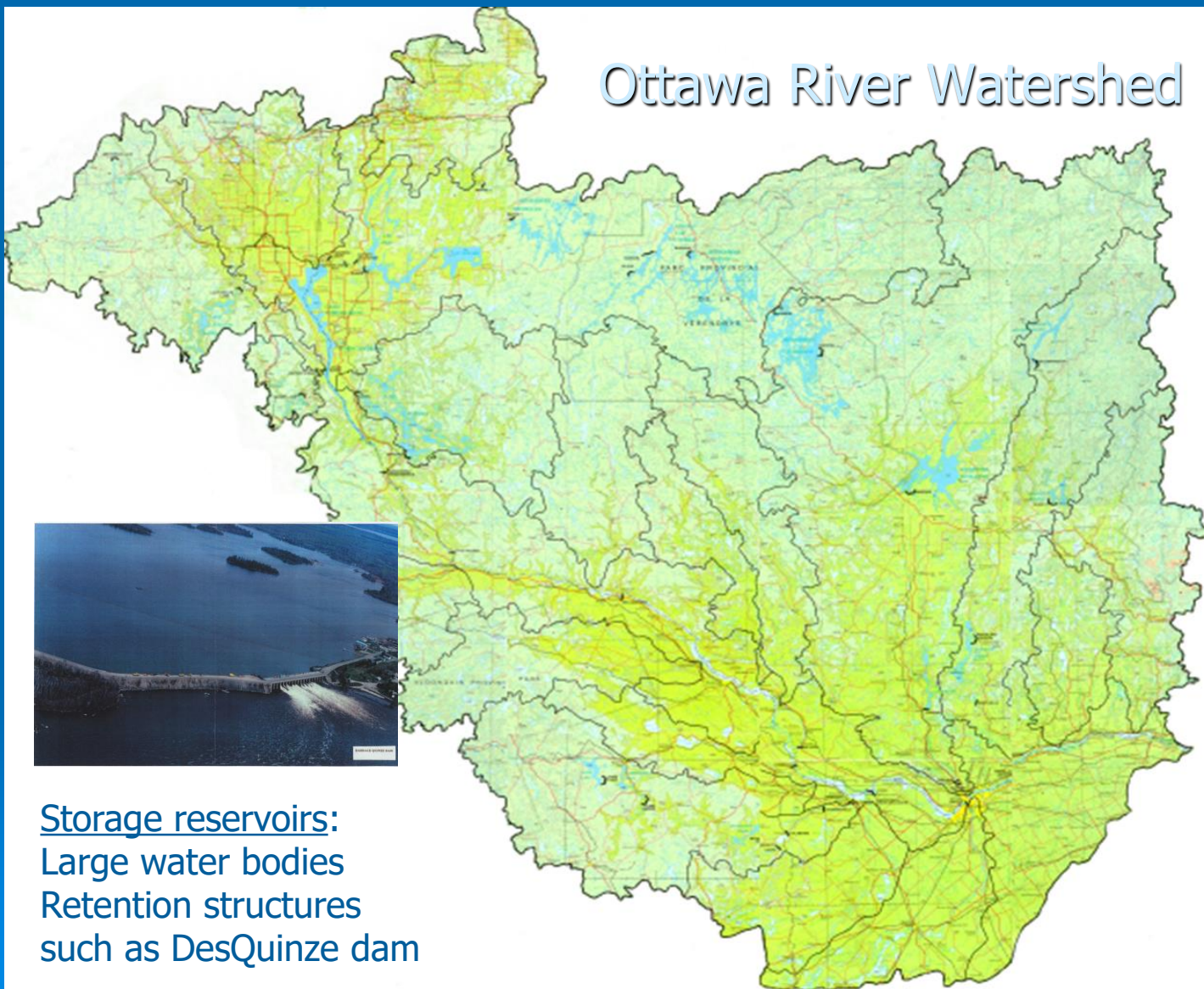
1950-2016:

Maximum daily flow
at Carillon dam
varied between
3,635 and 8,295 m³/s

In 2017:

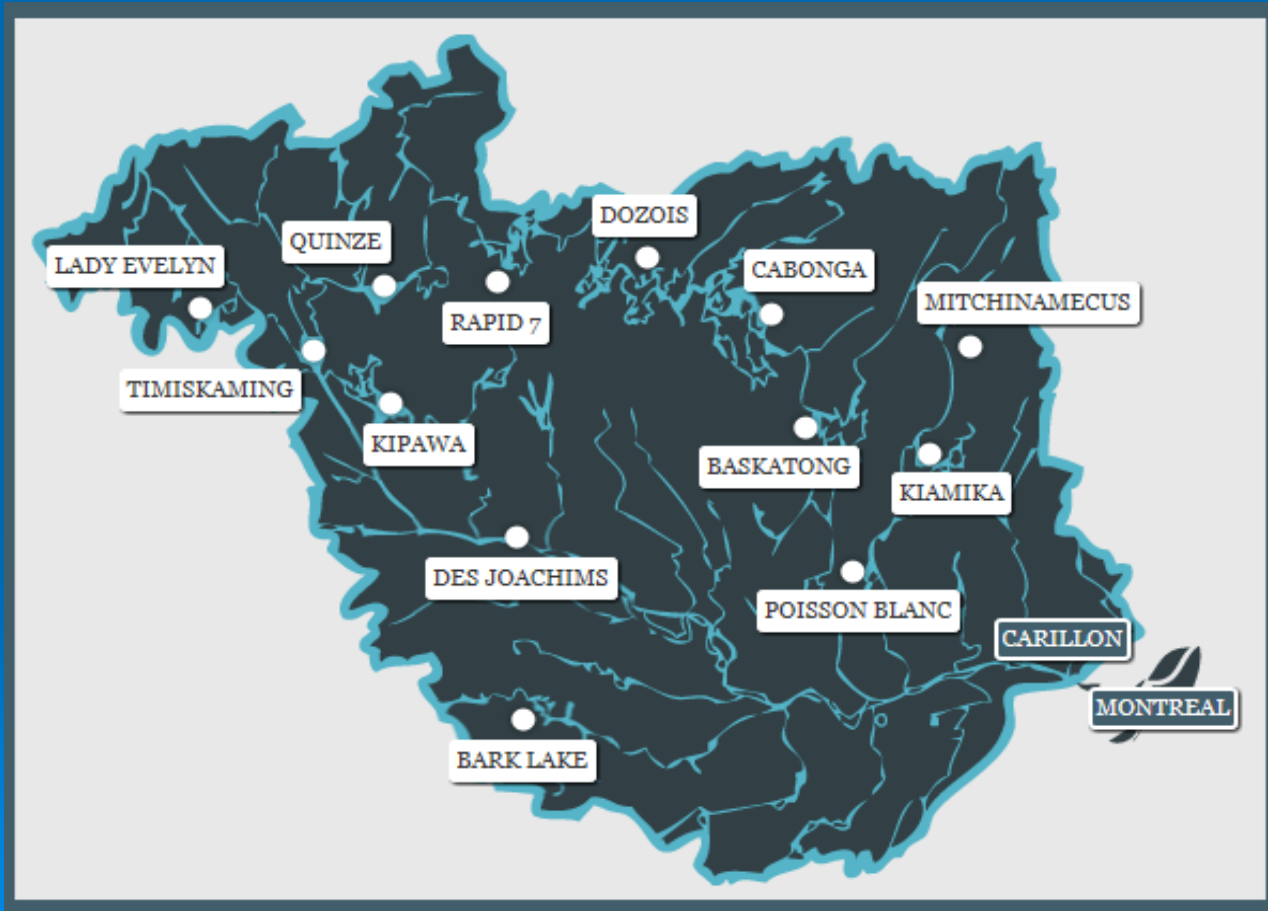
Maximum daily flow
on May 8th
~ 8,860 m³/s

Ottawa River Watershed



Storage reservoirs:
Large water bodies
Retention structures
such as DesQuinze dam

Principal Reservoirs



Planning Board Mandate

- The *Ottawa River Regulation Planning Board* was established in 1983 to ensure that the flow from the principal reservoirs of the Ottawa River Basin are managed on an integrated basis.
- The goal of this integrated management is to minimize damage from extreme conditions (flood and drought) along the Ottawa River and in the Montreal region, while maintaining beneficial water uses within the watershed (environmental, water power, navigation, supply, etc.).

The 1983 Canada-Ontario-Quebec Agreement

- *Established:*

- Ottawa River Regulation Planning Board
- Ottawa River Regulating Committee
- Ottawa River Regulation Secretariat

Planning Board Members

Quebec

Ministère du
Développement
durable, de
l'Environnement, et de
la Lutte contre les
changements
climatiques

Hydro-Québec

Canada

Public Services
and Procurement
Canada

Canadian Coast
Guard

Environment and
Climate Change
Canada

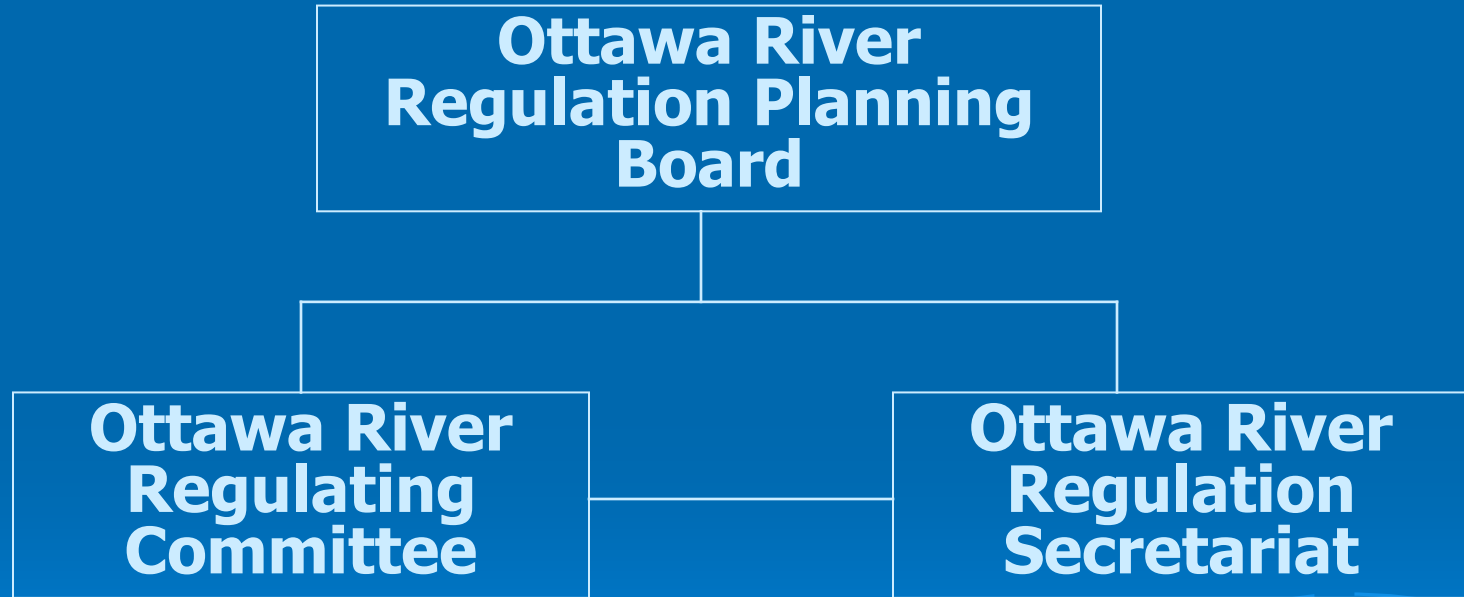
Ontario

Ministry of Natural
Resources and
Forestry

Ontario Power
Generation



How is the Board Structured?



Regulating Committee Members

Quebec

Ministère du Développement
durable, de l'Environnement
et de la Lutte contre les
changements climatiques

Hydro-Québec

Canada

Public Services and
Procurement Canada

Ontario

Ontario Power
Generation

The Agreement signed in 1983 established that :

« Membership on the Regulating Committee shall be limited to Operators »

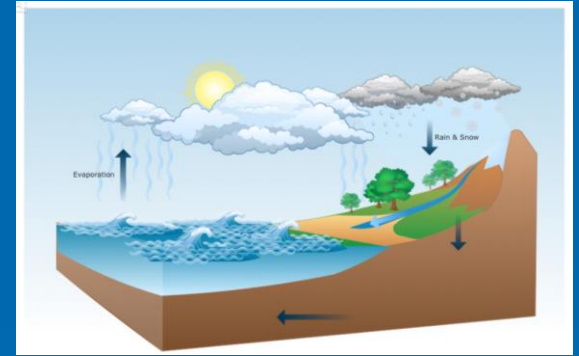
Daily Work of Regulating Committee

- Assess how much water (flows)
 - snowmelt, rainfall runoff?
- Assess water levels (natural and artificial features)
 - focus is on flood plains – areas vulnerable to flooding
- Share data among Committee members
 - to optimize their flow management of reservoirs
 - Upstream of Pembroke – 7 principal reservoirs
- Disseminate results to provincial authorities / public

Factors affecting water levels

➤ Flow rate (higher flow → higher level)

- Heavy rainfall combined with snowmelt generates very high flows.



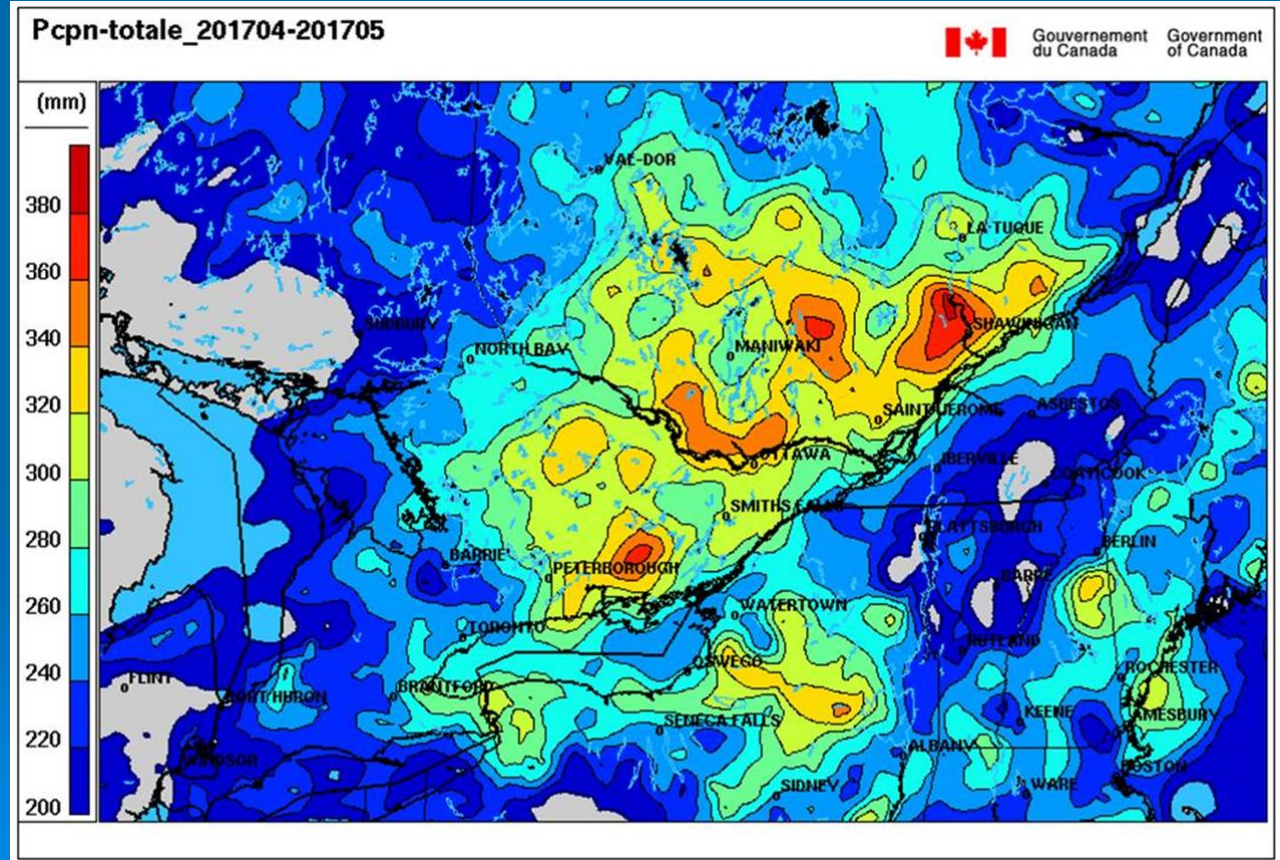
➤ Stream physical characteristics

- Natural - such as stream narrows and rapids
- Artificial - such as dams and levees

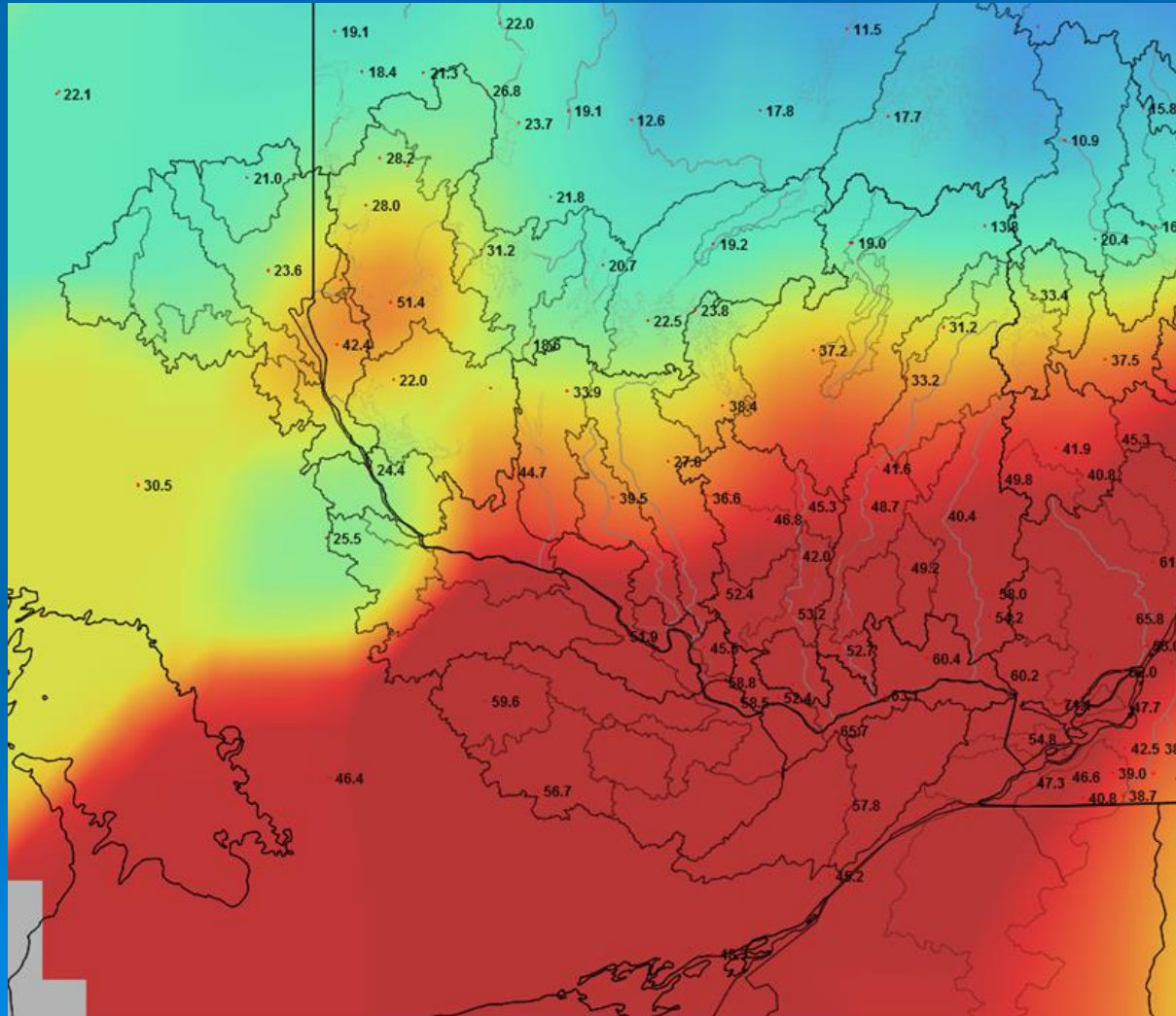
April & May Precipitation

More than twice normal

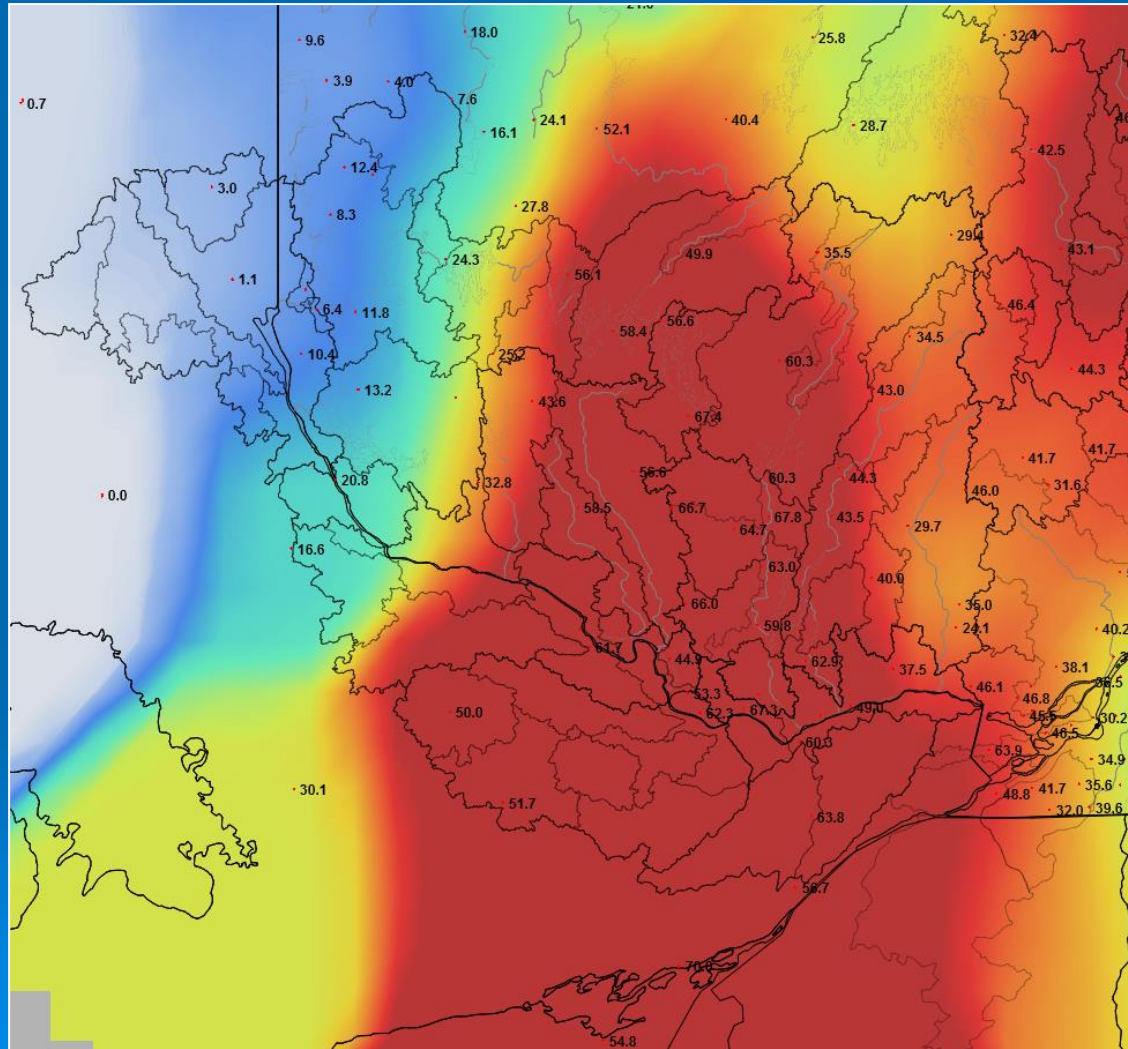
- Normal precipitation in April & May : 140 - 180 mm
- 2017 - Some locations received up to 380 mm
- Significant rainfall events



April 30 – May 1 Event



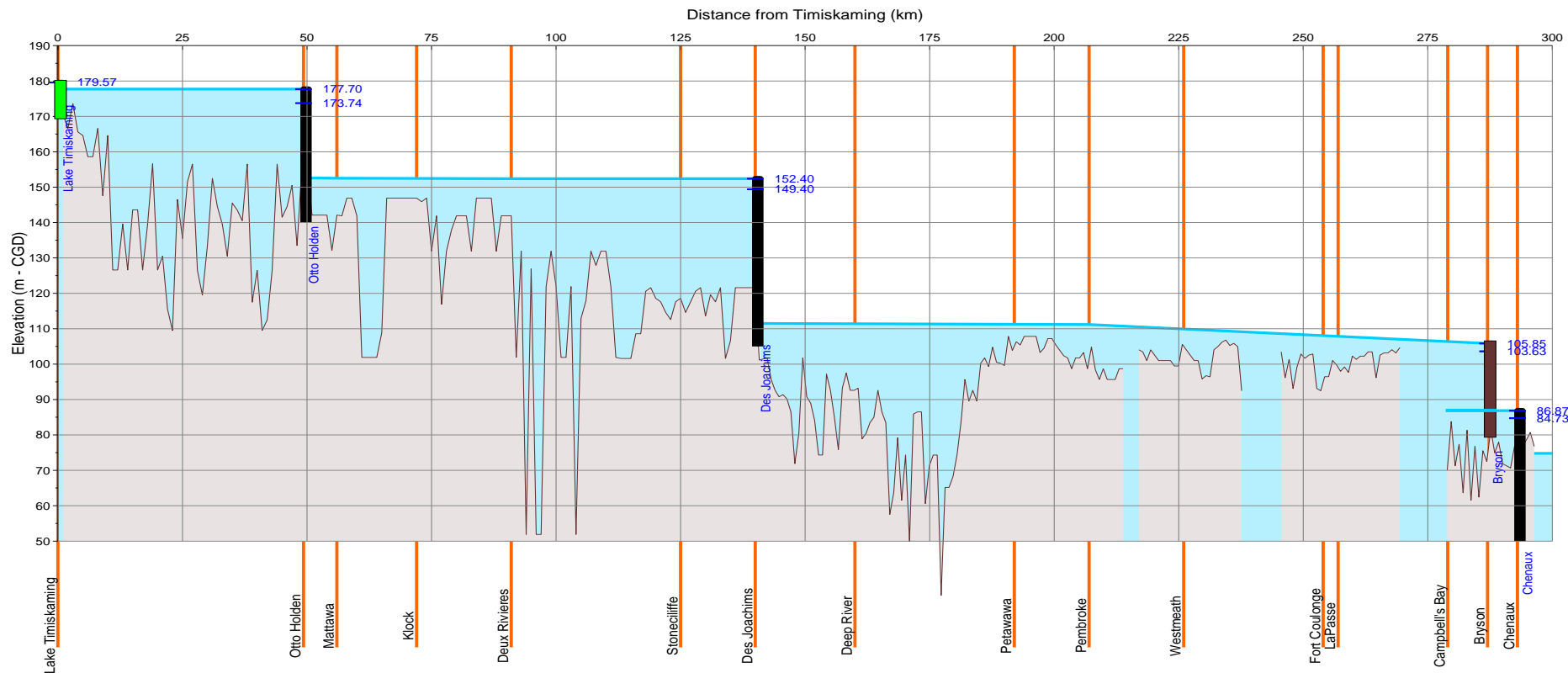
May 5 – May 6 Event



- Des Joachims

Backwater effect from rapids during high flows all the way to the town of Mattawa.

Ottawa River Profile – Timiskaming to Chenaux



Des Joachims – General Refill Strategy

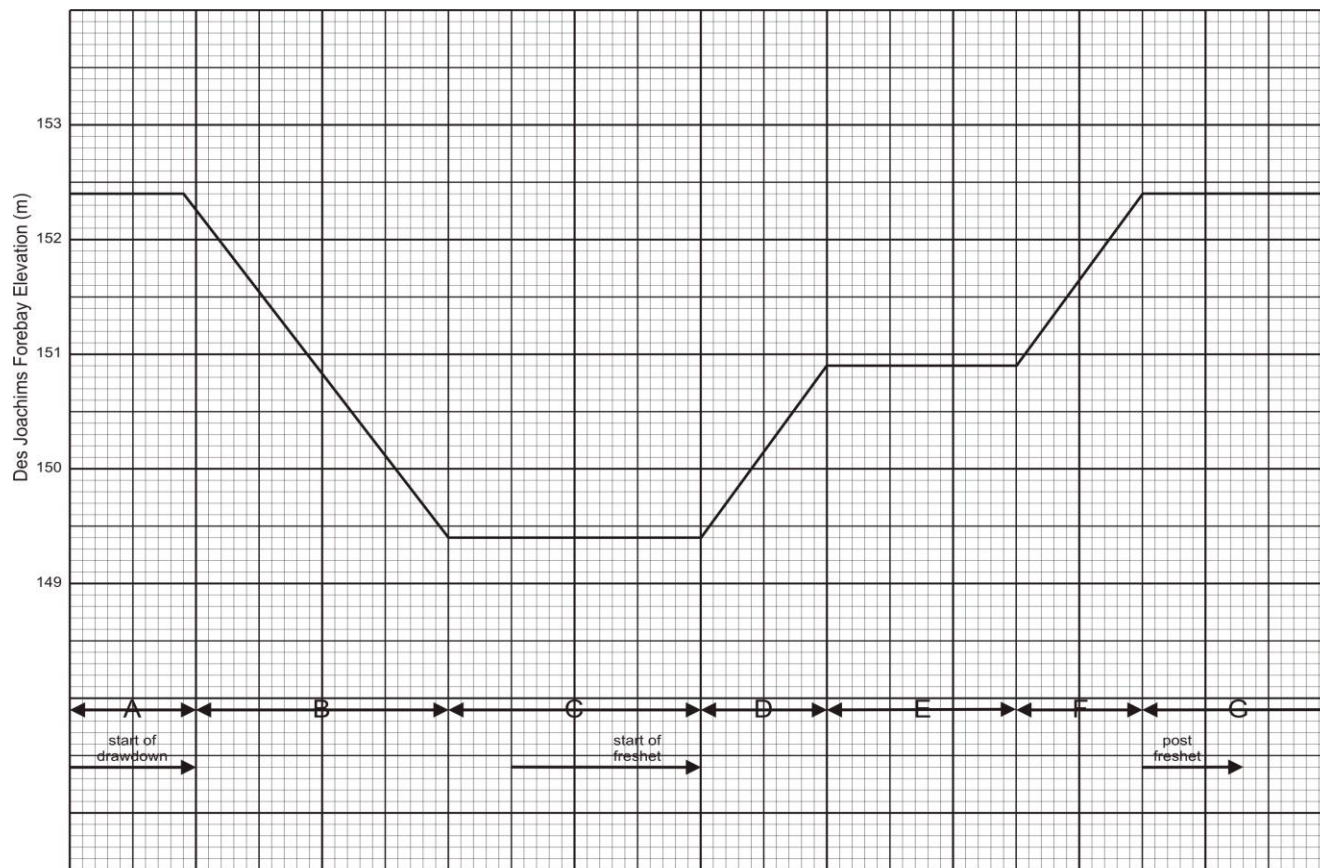
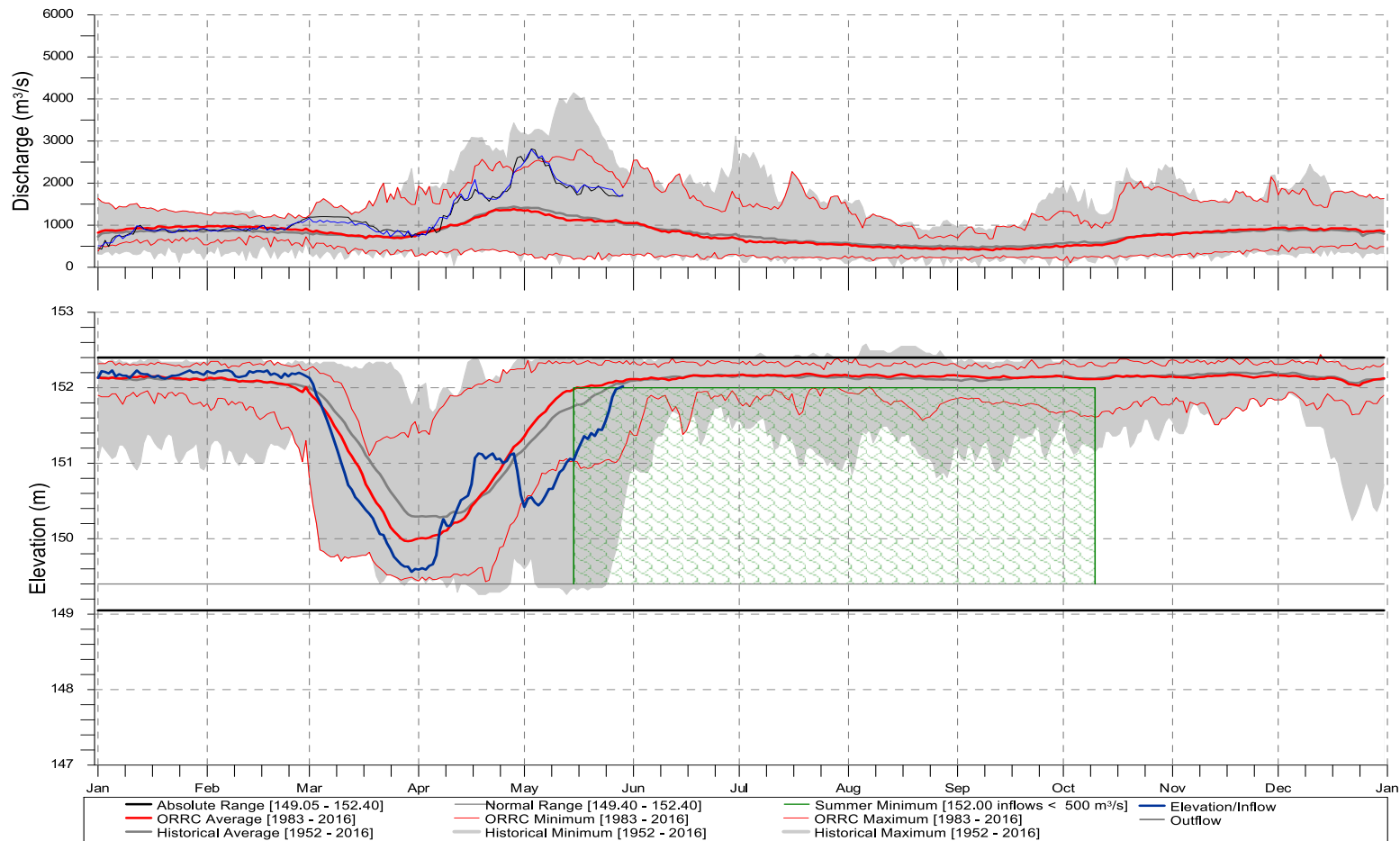
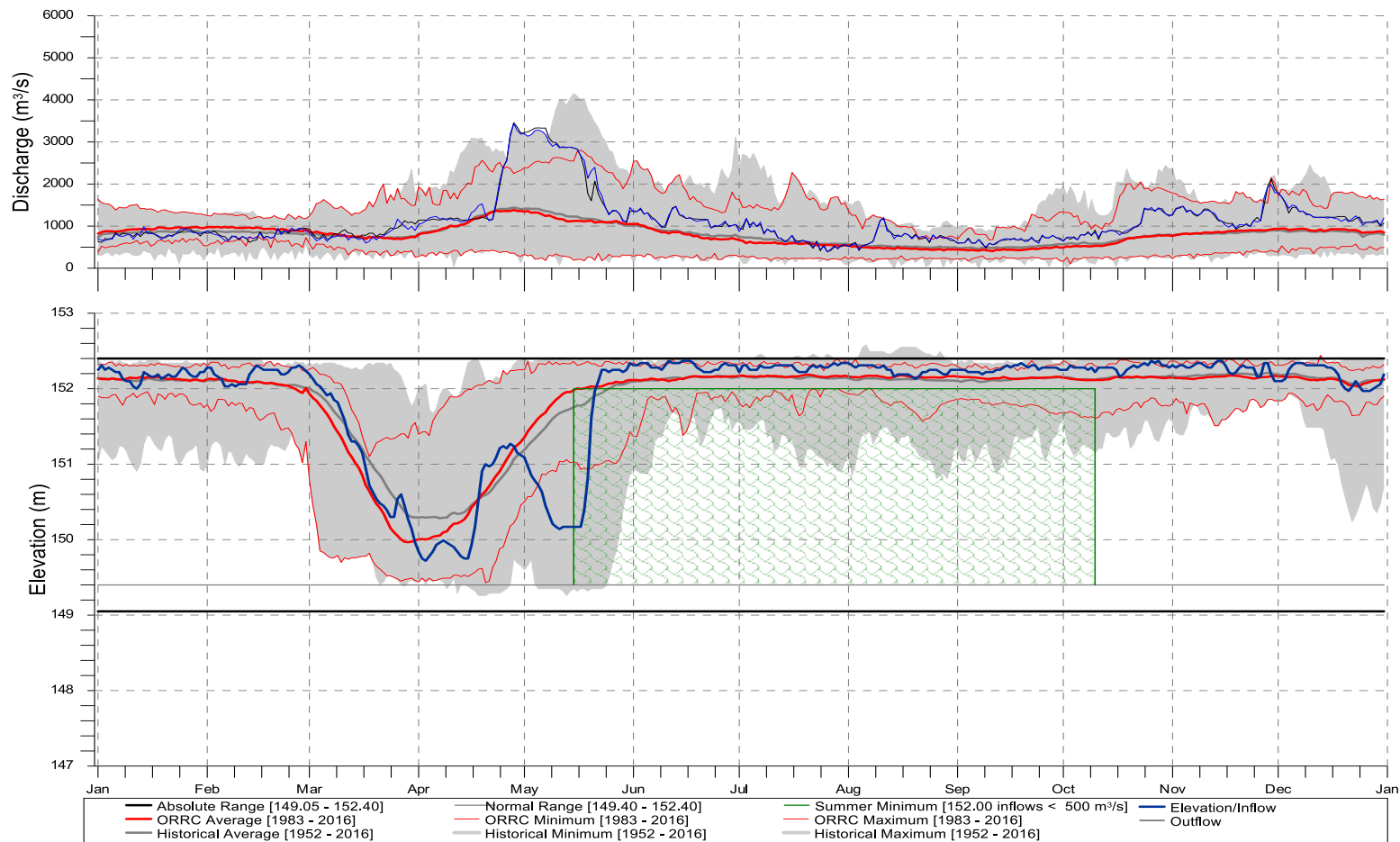


Figure 3.1.1
Operation of Des Joachims Forebay

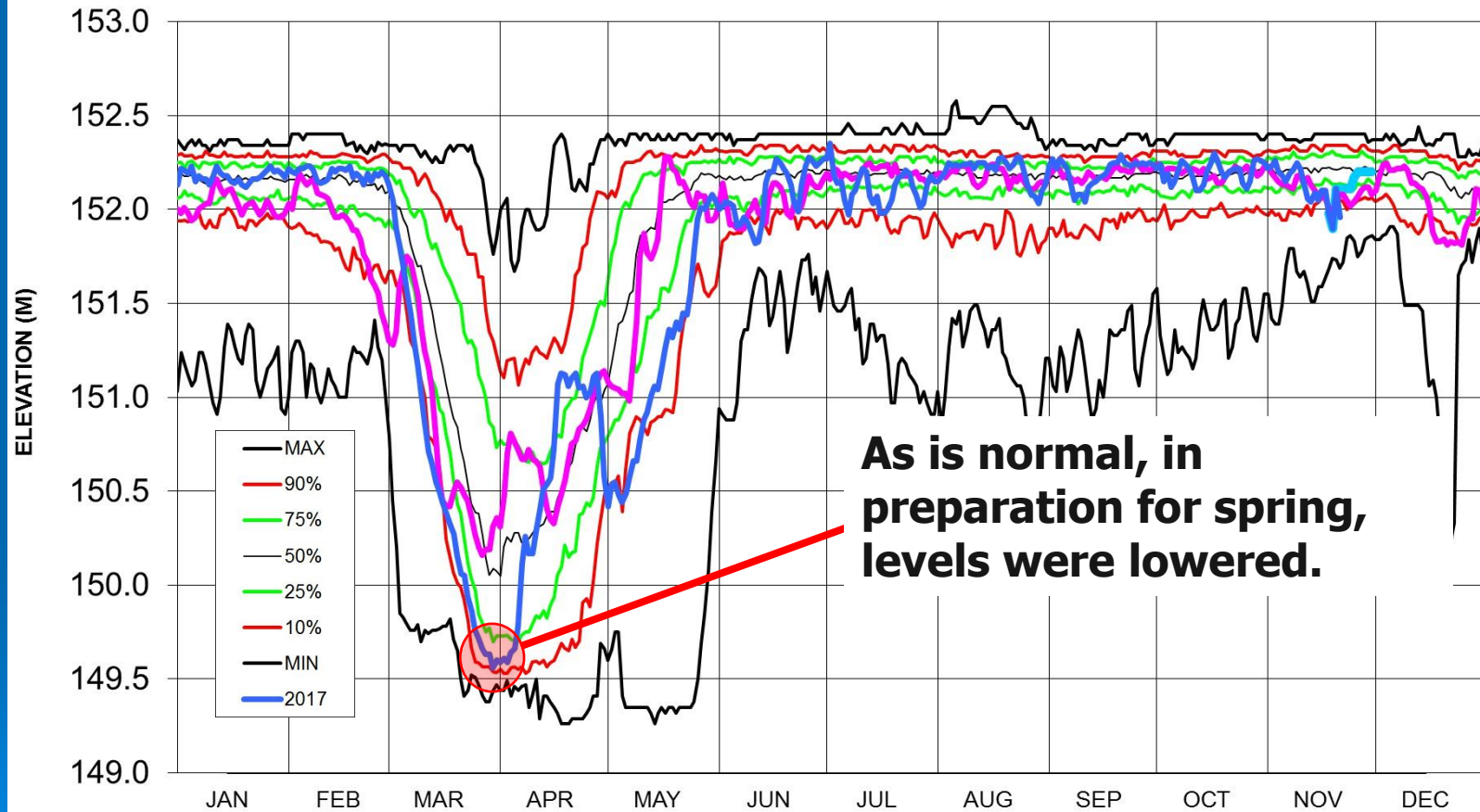
Des Joachims 2017



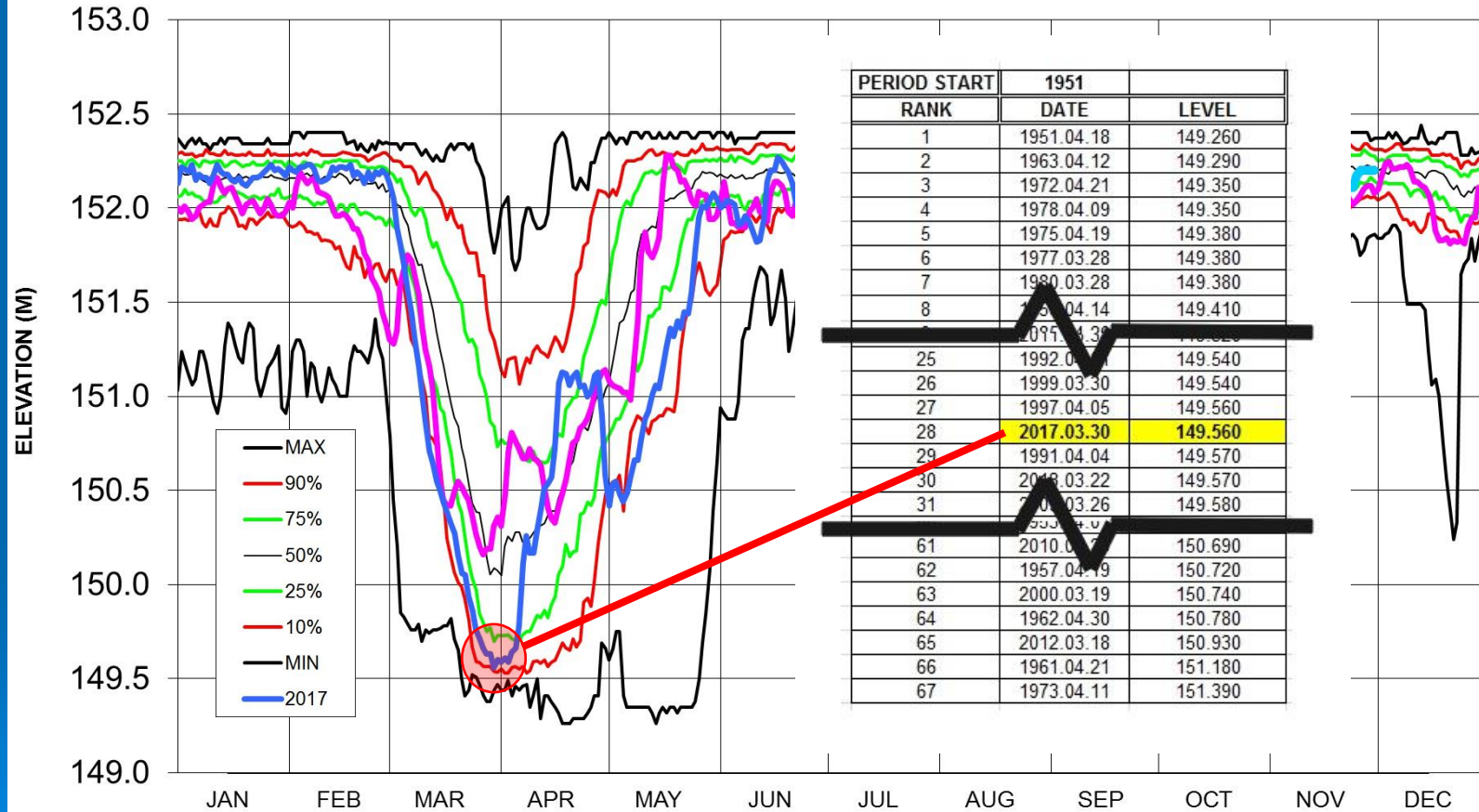
Des Joachims 1979



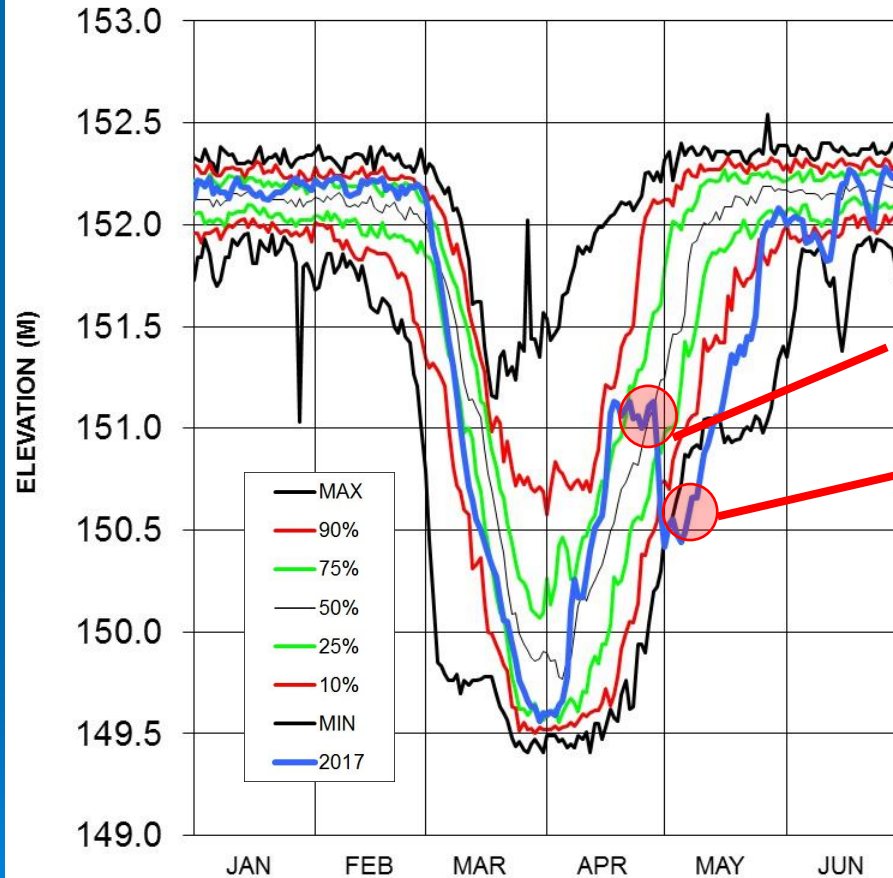
DES JOACHIMS LEVEL



DES JOACHIMS LEVEL



DES JOACHIMS LEVEL



Beginning April 27th levels are lowered knowing that two significant storms are forecast in the coming week.

Egan: High and dry – the maddening story of the upper Ottawa River



KELLY EGAN, OTTAWA CITIZEN
More from Kelly Egan, Ottawa Citizen ([HTTP://OTTAWACITIZEN.COM/AUTHOR/KELLYJOSEPHEGAN/](http://ottawacitizen.com/author/kellyosephegan/))

Published on: May 11, 2017 | Last Updated: May 11, 2017 4:00 PM EDT

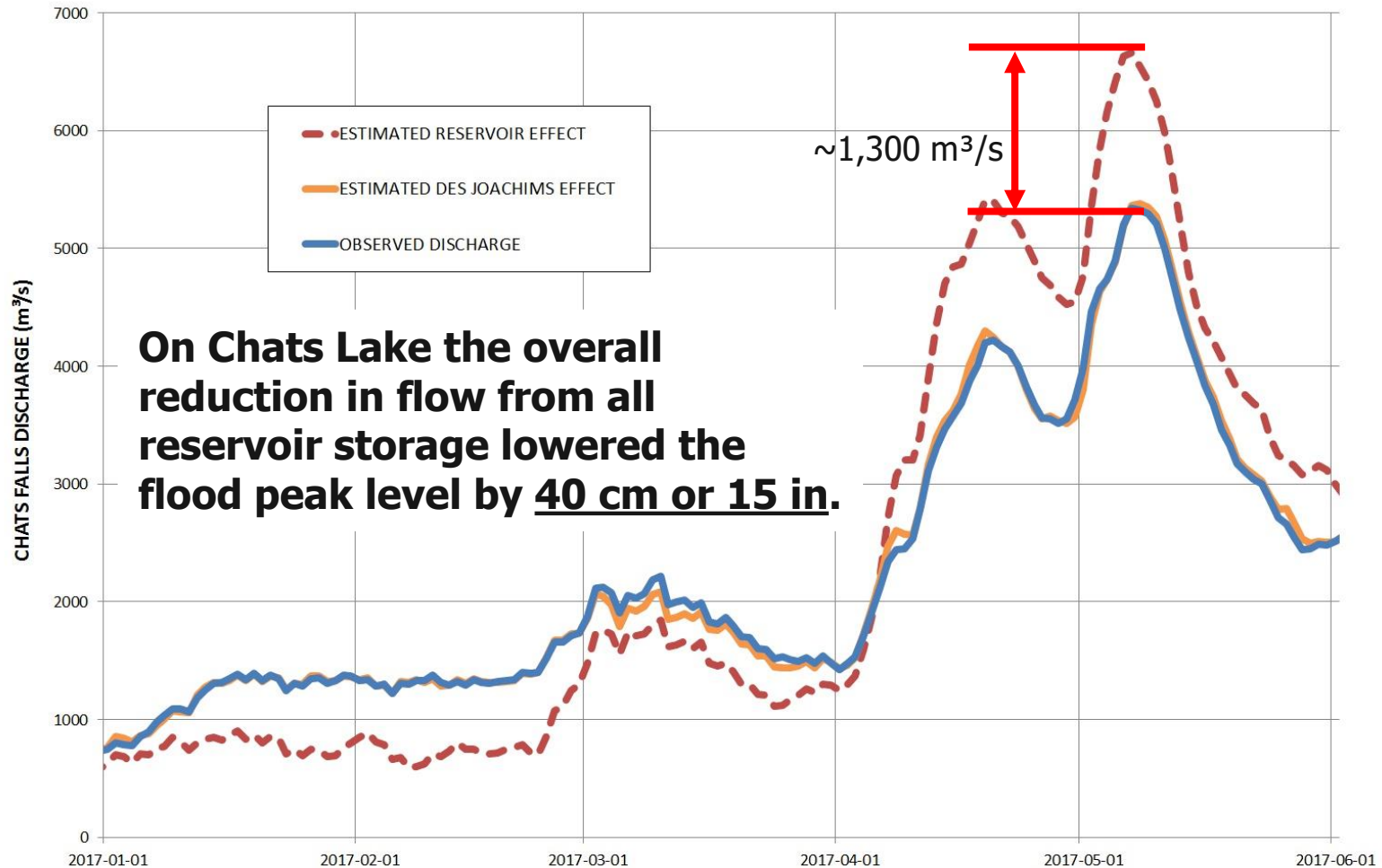


The low water level is seen at the Stonecliffe boat launch in Head, Clara and Maria Township on Sunday, May 7, while these living along the Ottawa River downstream and other waterways have been flooded out. **RYAN PAULSEN /**

JV

DEC

CHATS FALLS - OBSERVED DISCHARGE AND RESERVOIR EFFECTS



Flow Forecasts made available to Provincial Authorities and the Public

- MNRF Surface Water Monitoring Centre
 - Participate in daily conference calls & obtain model results
 - Transfer flow forecasts to provincial authorities responsible for flood advisories
- Secretariat brief local MNRF authorities
 - Participate in freshet calls
 - MNRF local District offices, municipal authorities
 - Conservation Authorities (Mississippi, Rideau Valley, South Nation)

Three Press Releases



Ottawa River
Regulation
Planning Board

Commission de planification
de la régularisation
de la rivière des Outaouais

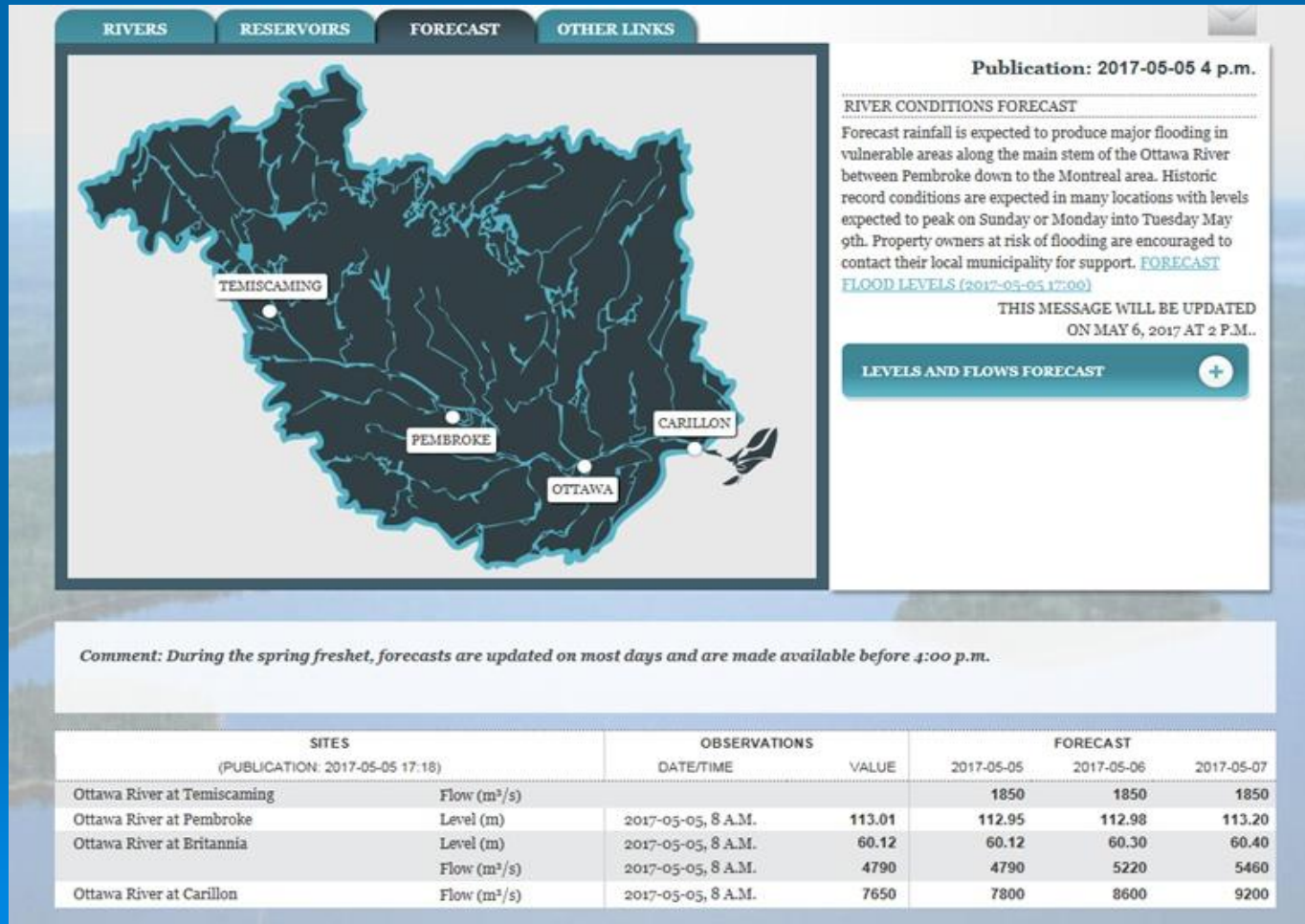
OTTAWA RIVER WATER LEVELS

OTTAWA/GATINEAU, Friday April 28, 2017 –The Ottawa River Regulating Committee cautions that water levels and flows along the main stem of the Ottawa River between Mattawa and the Montreal region will remain high for a sustained period of time. Well above normal April precipitation combined with snowmelt runoff have resulted in recent peak levels not seen in the last 20 years in many locations. Current meteorological forecasts are calling for additional rainfall of 30-60 mm over much of the Ottawa River basin. This additional precipitation is expected to once again increase levels that had been in decline.

Current weather forecasts predict very significant precipitation beginning Sunday, April 30th into Monday, May 1st. These weather conditions could cause rapid increases in levels and flows between Mattawa and the Montreal region. The increase in levels and extent of possible flooding will depend on the amount of precipitation received, the tracking of the storm as well as the amount of snowmelt in the north.

With current forecasts, northern snowmelt runoff combined with precipitation is expected to fill most northern reservoirs in the next few days. As a result, the capacity to retain additional runoff from the headwater areas in the north will be diminished. Residents of low-lying areas and communities located in areas prone to flooding along the Ottawa River are advised to monitor river conditions closely by consulting the daily update of river conditions on the ORRPB website at <http://www.ottawariver.ca> and checking with their local provincial agency that is responsible for issuing flood advisories.

Frequent update of Website



Make Flow Forecasts Available – *NEW!*

OTTAWA RIVER FORECAST FLOOD LEVELS

*** 2017-05-02 12:00:00 AM

	CURRENT LEVEL		FORECAST PEAK LEVEL		CHANGE (cm) **
	DATE-TIME	LEVEL (m) *	DATE	LEVEL (m) *	
MATTAWA	2017-05-02 10:00	153.78	2017-05-02	153.80	2
PEMBROKE	2017-05-02 8:00	112.90	2017-05-02	112.95	5
LAC COULONGE	2017-05-02 8:00	108.21	2017-05-04	108.35	14
LAC CHATS	2017-05-02 9:00	75.59	2017-05-05	75.65	6
LAC DESCHENES/BRITANNIA	2017-05-02 10:00	60.00	2017-05-05	60.10	10
GATINEAU/HULL MARINA	2017-05-02 9:00	44.25	2017-05-06	44.40	15
THURSO	2017-05-02 9:00	42.87	2017-05-06	43.00	13
GRENVILLE/HAWKESBURY	2017-05-02 9:00	42.19	2017-05-06	42.35	16

* All levels are in reference to mean sea level

** CHANGE is the forecast change in level in centimeters

*** This forecast will be updated as warranted

Warning:

- Water level forecasts are subject to a high degree of uncertainty and should be used as an approximate reference only.
- The flow rate and actual levels can change rapidly without warning, particularly during the freshet period. We advise those using bodies of water to exercise caution and to follow safety rules at all times.

Table with
forecast peak
levels - updated
twice daily
starting May 2nd

During
Spring
Freshet



MNRF = Communications

B R I N G I N G

E V E R Y O N E

TOGETHER



**Flooding
Bulletins
Need To Be
Shared**



The image features a central signpost with a white sign that reads 'CONTINUOUS IMPROVEMENT' in bold, black, sans-serif capital letters. The sign is rectangular with rounded ends and a white arrow pointing to the right. The signpost is a vertical silver pole. The background is a solid blue color with faint, concentric white circles representing water ripples. The entire scene is framed by a thick black border.

CONTINUOUS IMPROVEMENT

Exceptional Spring Flood Lower Reach

- Chats Lake level within 9 cm of 1951 record level
- Historic flooding from Lac Deschenes down to Montreal
 - Highest level observed at Britannia beach (since start of record - 1915)
 - Highest level in Gatineau (since start of record -1964)
 - Largest flow rate at Carillon dam (since construction -1962)
- Exceptional floods occurred in 20's, 50's, 70's, and this year
 - Other exceptional floods are to be expected in the future

Concluding words

Limits of regulation

- Size of reservoirs smaller than spring runoff, part of watershed uncontrolled
- Flooding cannot be prevented
- Peak of the flood is reduced
- Amount of precipitation, rate of snowmelt and natural stream characteristics are main factors in flood levels
- The weather factors are known only a few days ahead

Risk of Living in Floodplain

Facts you may not know of

Risk over a 50-yr Period

Over a 50-year period, there's 40% chance of getting a 100-yr flood event at least once

100-yr Flood

Is actually a 1% flood, meaning that on any given year, there is a 1% chance of having a flood of this magnitude

Questions?





Information

Current Water levels
Toll free number 24 hours per day

Ottawa-Gatineau

613-995-3443

613-995-3455

English

French

Outside

1 800 778-1246

1 800 778-1243

Flow forecasts
during freshet

Web Site: **<http://www.ottawariver.ca>**

Ottawa River Regulation Secretariat
373 Sussex Dr, Block E1, Room E120
Ottawa, Ontario
Email : secretariat@ottawariver.ca