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SULFUR YIELDS OF QUEBEC RIVERS

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Executive Summary

This report presents added evidence that the primary source of sulphate to surface waters of remote areas of Quebec is the deposition by atmospheric transport.

Résumé à l'intention de la Direction

Ce rapport présente d'autres données établissant que la plupart du sulfate présent dans les eaux de surface des régions éloignées du Québec est principalement le résultat du transport atmosphérique.

ABSTRACT

The long term average sulfur-yields of rivers in southern Quebec have been calculated using mean sulfate concentrations times runoff for gauged rivers. The areal distribution of sulfur-yields agrees well with the known pattern of atmospheric wet deposition. In heavily populated areas, however, especially in the St. Lawrence Lowlands, there is considerably more sulfur than can be attributed to wet deposition.

Résumé

On a calculé la valeur moyenne à long terme de l'apport en soufre dans le sud du Québec, à partir du produit de la concentration moyenne de sulfate dans l'eau et dans le ruissellement pour certains cours d'eau. La distribution surfacique de l'apport en soufre concorde bien avec la répartition connue des précipitations humides. Toutefois, dans les régions très peuplées et particulièrement dans les terres basses du Saint-Laurent, la quantité de soufre est de beaucoup supérieure à celle attribuable uniquement aux précipitations humides.

INTRODUCTION

In order to calculate the sulfur-yield of rivers, chemical data must be available and discharge data are useful, although in some cases runoff can be estimated, using data for nearby rivers. During 1980/81, the chemical data base of the Province of Quebec was incorporated into NAQUADAT (Canada's National Water Quality Data Storage System). The base includes data on lakes and rivers from 1968 to 1979. NAQUADAT and the Provincial data base use different systems for identifying stations. NAQUADAT has chemical data under NAQUADAT Station codes, but discharge data, in publications of the Province of Quebec, are identified by Provincial codes.

A systematic approach was used to match the two data sets. For each station, the data are listed in the same format: first the station name and NAQUADAT station code, then its latitude and longitude, then the period of chemical record, the mean sulfate concentration ($\bar{X}$), standard deviation (s), and number of samples (n). Then the name of the gauging station, its Quebec station code and the drainage area above the gauge, the latitude and longitude, and the period of record are shown. The last line shows the mean discharge in metres cubed per second (cms), the runoff (R) calculated from the discharge and the drainage area:

$$R = (m^3 s^{-1})(s\ yr^{-1})/(\text{drainage area in } m^2) = m\ yr^{-1}$$

Finally, the sulfur yield is calculated as

$$(\bar{x}_{SO_4})(R)/3 = S \text{ in g m}^{-2} \text{ yr}^{-1}$$

The number of samples available per river to calculate the mean sulfate concentrations ranges from 5 to more than 400. Mostly larger data sets were used, and, in some cases, efforts were made to match the discharge data to the period of record of the chemical data. Generally this made little difference, except in the cases of rivers sampled only in the early 1970s, when both sulfate concentrations and discharges were higher than later in the 1970s.

For rivers near the ocean whose Cl^-, Na^+ and Mg^{++} concentrations indicated that they received significant amounts of seasalt, the sulfate data were corrected for seasalt, using Cl^-, and assuming the same ratio of sulfate to Cl^- as in normal open seawater. Specifically, in weight units:

$$\text{Excess } SO_4^{--} = \text{Total } SO_4^{--} - 0.14(Cl^-)$$

Some of the results were plotted on maps by Provincial Regions. The detailed data sheets are in Appendix A.

Figure 1 shows the system used by the Province of Quebec to subdivide southern Quebec into hydrographic regions. Regions 1 and 2 lie along the southern and northern extent of the Gaspé Peninsula, respectively. Region 3 lies south of the St. Lawrence River in southernmost Quebec. Region 4 includes watersheds of rivers draining into the Ottawa River from the north. Region 5 includes rivers draining the north shore of the St. Lawrence River, as far east as, but not including, the Saguenay. Region 6 comprises the watershed of the Saguenay including rivers draining into Lac Saint Jean. Region 7 comprises the rivers draining the north shore of the St. Lawrence River from just east of the Saguenay to Labrador.

RESULTS

Regions 1 and 2

Figure 2 shows some of the calculated S, or excess S, yields along the Gaspé Peninsula. At the eastern end of the peninsula the yields generally range from 1 to 1.8 g m^{-2} yr^{-1}, a notable exception being the York River, apparently affected by smelting activities at Murdochville. To the west, however, in the eastern Quebec lowlands, the S yields are much higher, ranging up to 4 g S m^{-2} yr^{-1}. Although this is a region of very high atmospheric deposition (Barrie and Sirois, 1982), there is likely also a significant terrestrial and/or municipal-industrial-effluent source as well.

Region 3

Rivers in this region (Figure 3) lie mainly in the St. Lawrence Lowlands and they too exhibit very high S yields.

Region 4

For rivers draining the north shore of the Ottawa River (Figure 4) an interesting phenomenon begins to appear. That is, rivers with smaller watersheds exhibit higher S yields than larger rivers. Much of the watersheds of the larger rivers lie far to the north, out of the area of high atmospheric deposition, while much of the watersheds of the smaller rivers lie to the south. (For information on the areal distribution of atmospheric deposition, see Barrie and Sirois, 1982). The high S yield of the Kinojevis River, no doubt reflects smelting activities at Rouyn-Noranda.

Region 5

The same areal pattern seen in Region 4 is seen in Region 5 (Figure 5). The larger rivers generally show smaller S yields than the smaller ones. There is also a tendency towards smaller S yields to the east.

Region 6

S yields of rivers entering Lac Saint Jean are less than 1 g m^{-2} yr^{-1} and are only a little higher in the area of the Kenogami Reservoir and for the Sainte Margarite River (Figure 6). The slightly higher yield of the Sainte Margarite River on the north bank of the Saguenay compared to the Petite Saguenay on the south bank may reflect differences in atmospheric deposition due to prevailing winds and topography.

Region 7

There is a sparsity of data for many of the rivers in Region 7 (Figure 7), but the excess S yields are generally low, well under 1 g m^{-2} yr^{-1}. A S yield of 0.6 g m^{-2} yr^{-1} is equivalent to 18.8 m mol SO_4^{--} m^{-2} yr^{-1} and agrees well with the wet deposition maps of Barrie and Sirois (1982) in which the 20 m mol m^{-2} yr^{-1} contour generally crosses this area. In this relatively remote region, the S yielded by the rivers is mainly due to atmospheric wet deposition. Terrestrial sources and dry deposition are unimportant.

SUMMARY AND CONCLUSIONS

Calculations, admittedly crude, of the S yield of rivers in southern Quebec have produced results that are generally in accord

with the known pattern of atmospheric wet deposition. Only in the Saint Lawrence Valley and in the western extension of the low table-lands of eastern Quebec are the river yields of S much higher than can be explained as due to atmospheric wet deposition. This area is well populated, however, and there are probably significant sources of S from municipal/industrial effluents, as well as likely terrestrial sources, and dry deposition.

These results show that, except in populated lowland areas, the principal sources of S to Quebec rivers is via atmospheric deposition, and that over the long term there is little retention of S within the watersheds.

ACKNOWLEDGEMENTS

I thank H. St. Martin of the Ministère de l'environnement for permission to use the Quebec Provincial Data Base for this exercise.

REFERENCES

Barrie, L.A. and A. Sirois, 1982. An analysis and assessment of precipitation chemistry measurements made by CANSAP (the Canadian Network for Sampling Precipitation): 1977-1980. Environment Canada, Atmospheric Environment Service Report AQRB-82-003-T.

Quebec, Ministere des Richerses naturelles Annuaire hydrologique - various years.

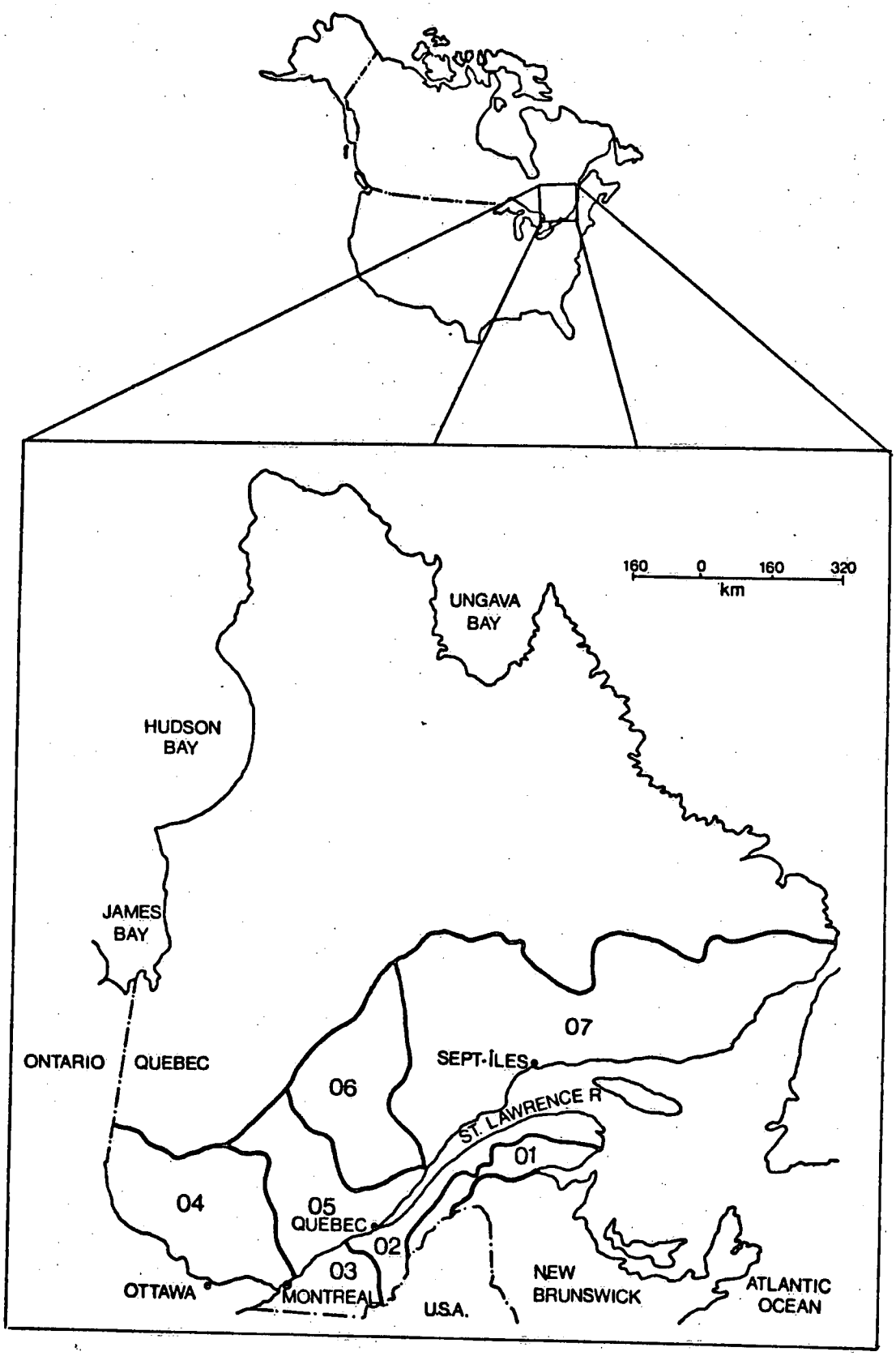

Figure 1 The first seven hydrographic regions of Quebec.

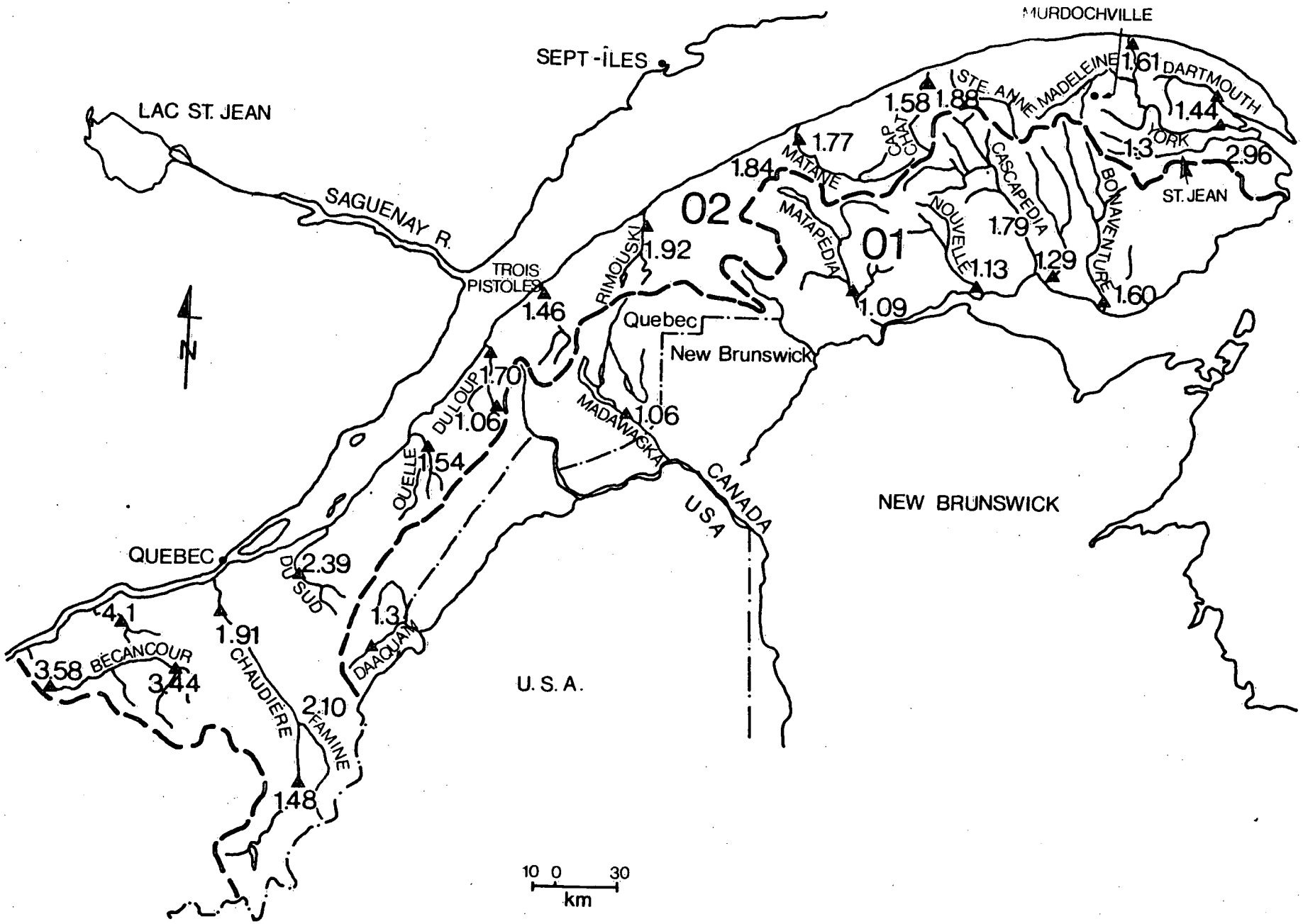

Figure 2 Excess S-yields of rivers in Regions 1 and 2.

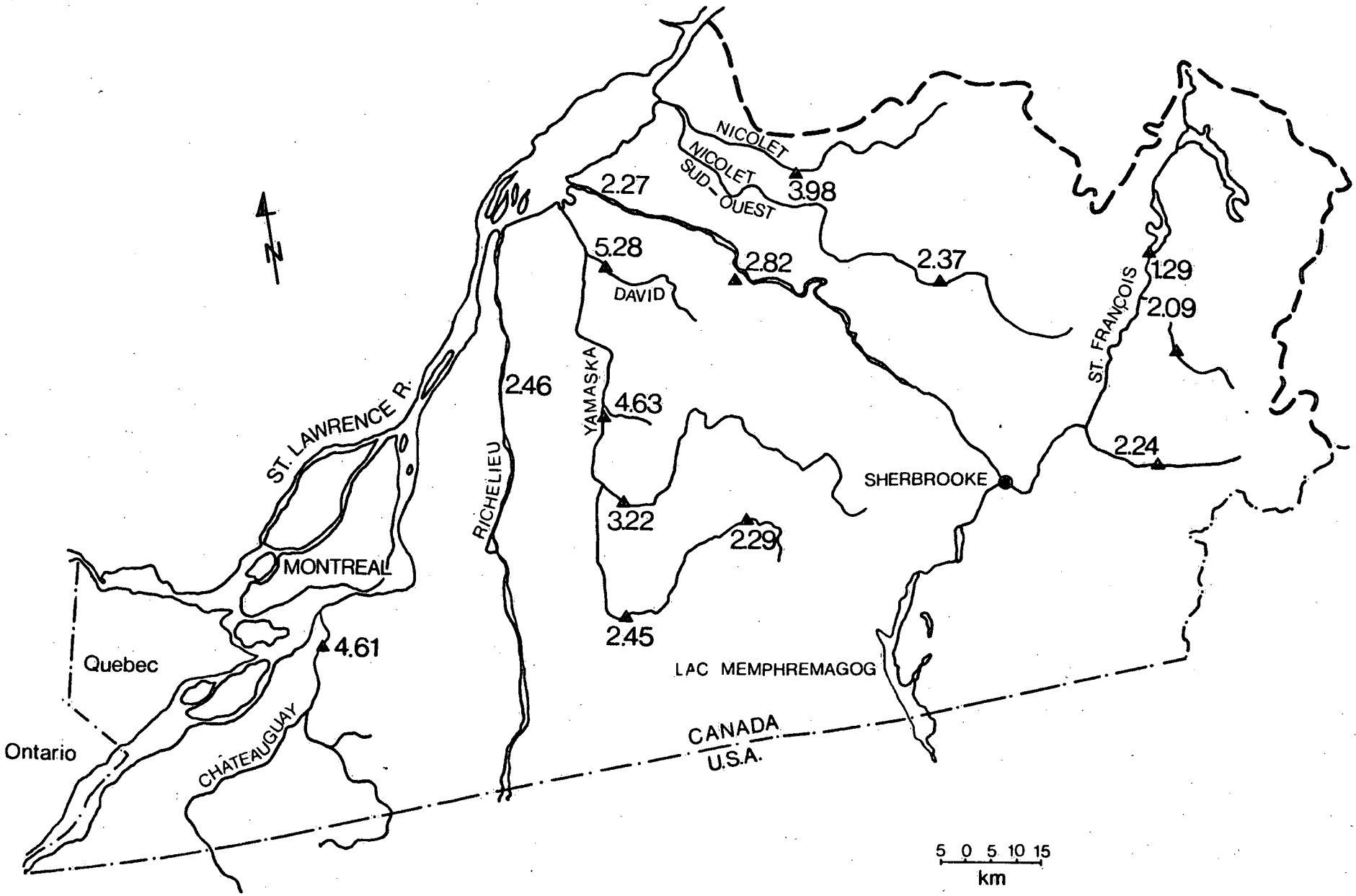

Figure 3 Excess S-yields of rivers in Region 3.

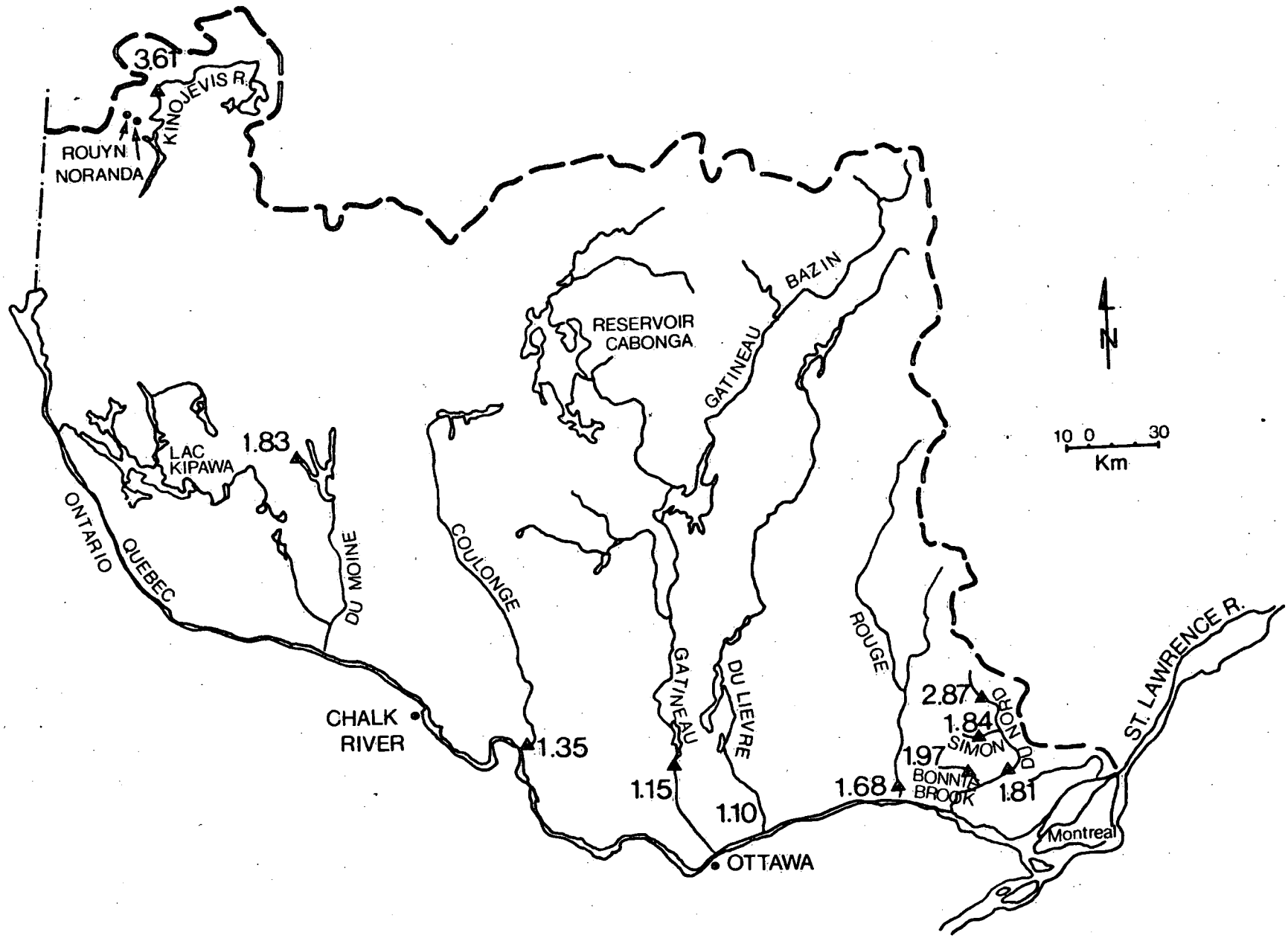

Figure 4 Excess S-yields of rivers in Region 4.

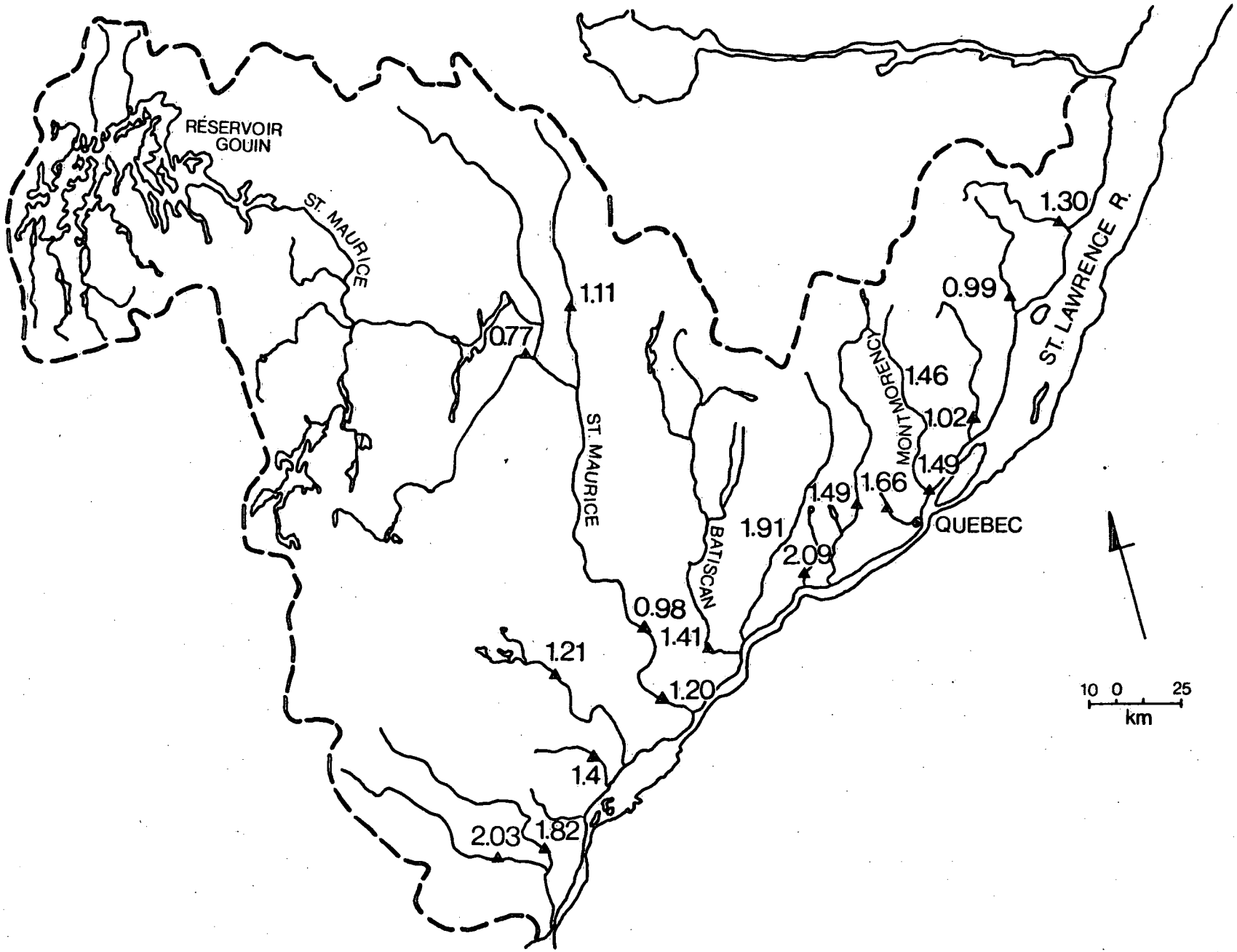

Figure 5 Excess S-yields of rivers in Region 5.

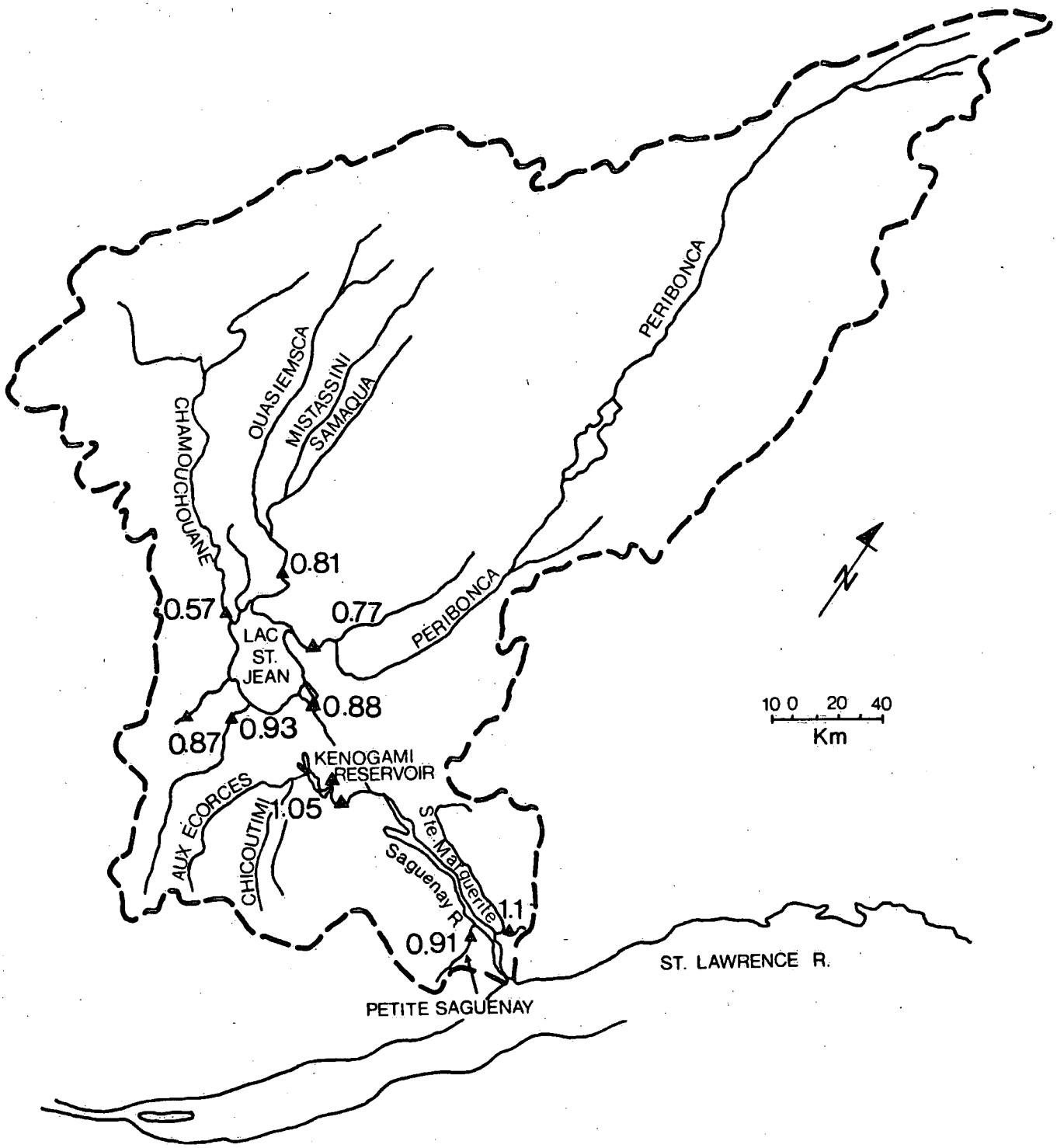

Figure 6 Excess S-yields of rivers in Region 6.

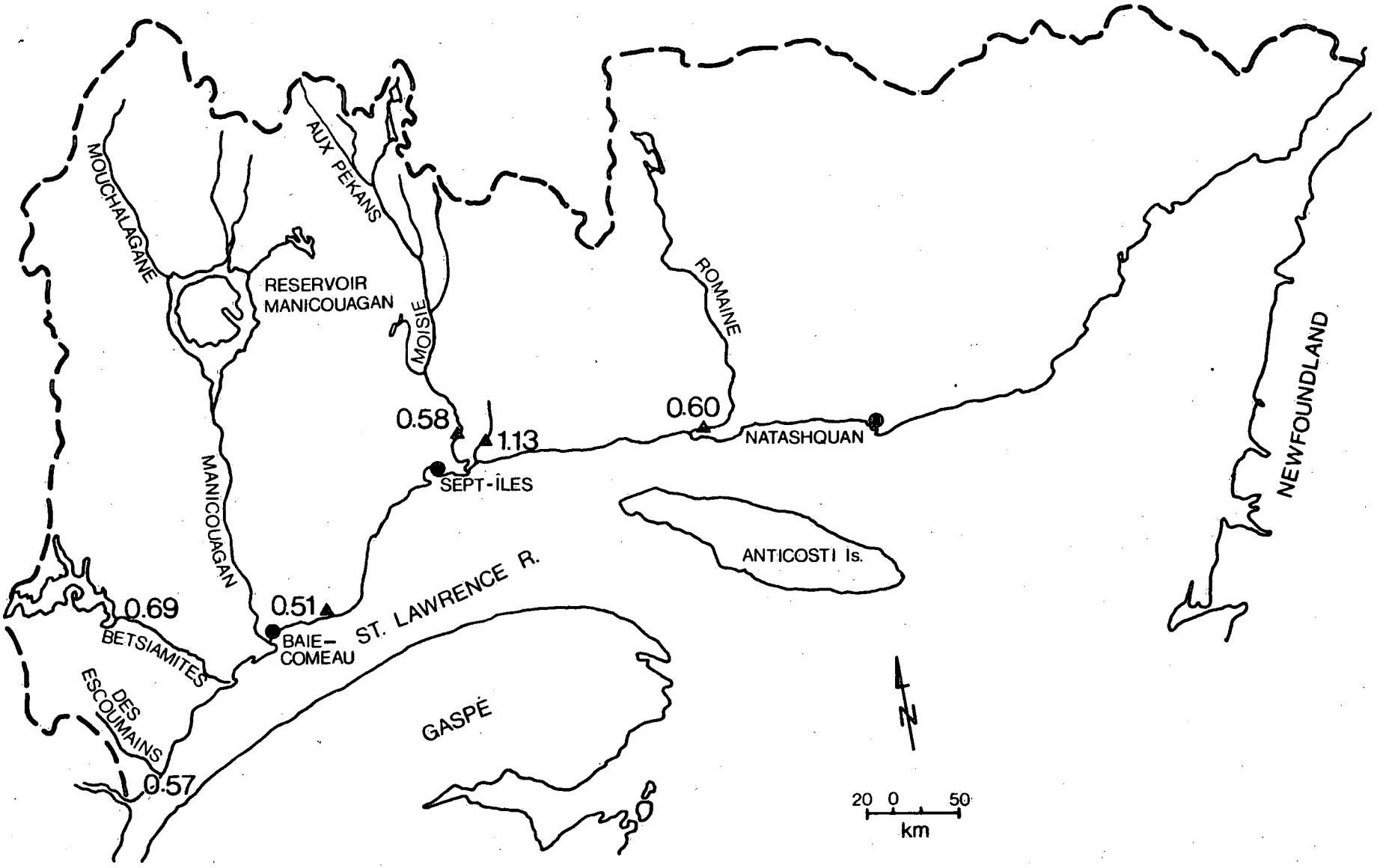

Figure 7 Excess S-yields of rivers in Region 7.

APPENDIX

Data for Rivers in Quebec: Region 1

Name	DAAQUAM AU PONT-ROUTE DE SAINTE-JUSTE-DE-BRETENIERES
NAQUADAT Code	00PQ01AA0001000
Lat Long	46-33-27N 70-04-49W
Period	71-10-06 to 74-07-24
SO_4^{--} mg L^{-1}	$\bar{x}$ 5.2 s = 2.1 n = 96
Gauge	no gauge
Lat Long	
Period	
Data	R ~ 0.75 m yr^{-1} S ~ 1.30 g m^{-2} yr^{-1}

Name	MADAWASKA AU PONT-ROUTE A DEGELIS
NAQUADAT Code	00PQ01AD0001000
Lat Long	47-33-02N 68-38-13W
Period	71-07-13 to 79-12-16
SO_4^{--} mg L^{-1}	$\bar{x}$ 5.7 s = 1.3 n = 212
Gauge	MADAWASKA A 3.1 KM EN AVAL DU BARRAGE DU LAC TEMISCOUATA 011702 2720 km^2
Lat Long	47-32-54N 68-38-11W
Period	61 years
Data	48.2 cms R = 0.558 S = 1.06 g m^{-2} yr^{-1}

Name	MATAPEDIA AU PONT-ROUTE A SAINT-ALEXIS
NAQUADAT Code	00PQ01BD0001000
Lat Long	48-01-05N 67-01-40W
Period	70-02-15 to 77-07-03
SO_4^{--} mg L^{-1}	$\bar{x}$ = 5.4 s = 2.3 n = 230
Gauge	MATAPEDIA A 1.0 KM EN AMONT DE L'ASSEMETOUAGAN
	011507 2770 km^2
Lat Long	48-05-12 N 67-06-02W
Period	1968-1979
Data	56.7 cms R = 0.645 m yr^{-1} S = 1.09 g m^{-2} yr^{-1}

Name	MATAPEDIA AU PONT-ROUTE A LA SORTIE DULAC
NAQUADAT Code	00PQ01BD0002000
Lat Long	48-29-30N 67-26-53W
Period	71-08-31 to 74-06-17
SO_4^{--} mg L^{-1}	$\bar{x}$ = 6.45 s = 2.3 n = 96
Gauge	MATAPEDIA A 0.6 MI EN AMONT DE L'ASSEMETQUAGAN
	011507 2770 km^2
Lat Long	
Period	1971-01 to 1974-09
Data	61.5 cms R = 0.700 m yr^{-1} S = 1.50 g m^{-2} yr^{-1}

Name	NOUVELLE AU PONT-ROUTE 132 A NOUVELLE
NAQUADAT Code	00PQ01BF0001000
Lat Long	48-09-29N 66-20-57W
Period	70-05-28 to 79-12-16
SO_4^{--} mg L^{-1}	$\bar{x}$ = 4.53 s = 1.5 n = 320
Gauge	NOUVELLE AU PONT-ROUTE 132 A NOUVELLE 011201 1140 km^2
Lat Long	48-09-26N 66-20-58W
Period	1964-1979
Data	27.2 cms R = 0.752 m yr^{-1} S = 1.13 g m^{-2} yr^{-1}

Name	BONAVENTURE A 6.9 KM EN AMONT DU PONT-ROUTE 132
NAQUADAT Code	00PQ01BG0001000
Lat Long	48-05-12N 65-26-53W
Period	77-01-16 to 79-12-16
SO_4^{--} mg L^{-1}	ssc $\bar{x}$ 5.4 s = 1.5 n = 87
Gauge	BONAVENTURE A 9.7 KM EN AMONT DU PONT-ROUTE 132
	010801 2150 km^2
Lat Long	48-06-00N 64-27-42W
Period	1978-10 to 1979-09
Data	60.5 cms R = 0.886 m yr^{-1} S = 1.60 g m^{-2} yr^{-1}

Name	PETITE RIVIERE CASCAPEDIA AU PONT-ROUTE A NEW RICHMOND
NAQUADAT Code	00PQ01BG0002000
Lat Long	48-10-17N 65-50-43W
Period	70-05-28 to 78-09-10
SO_4^{--} mg L^{-1}	ssc $\bar{x}$ 5.17 s = 3.1 n = 286
Gauge	PETITE RIVIERE CASCAPEDIA A 3.9 KM EN AMONT DU PONT DU C.N. 010901 1390 KM^2
Lat Long	48-11-21N 65-48-43W
Period	1961-1979
Data	33.1 cms R = 0.750 m yr^{-1} S = 1.29 g m^{-2} yr^{-1}

Name	CASCAPEDIA AU PONT-ROUTE DE SAINT JULES DE CASCAPEDIA
NAQUADAT Code	00PQ01BG0004000
Lat Long	48-15-06N 65-53-43W
Period	70-05-28 to 79-12-16
SO_4^{--} mg L^{-1}	ssc $\bar{x}$ 6.92 s = 2.4 n = 319
Gauge	CASCAPEDIA A 1.4 KM EN AVAL DE LA BRANCHE DU LAC 011001 1470 km^2
Lat Long	48-39-59N 66-11-22W
Period	1966-1978
Data	36.3 cms R = 0.778 m yr^{-1} S = 1.79 g m^{-2} yr^{-1}

Name	RUISSEAU BASTIEN A 0.5 KM EN AMONT DU PONT-ROUTE 132 A CARLETON
NAQUADAT Code	00PQ01BG0006000
Lat Long	48-06-33N 66-07-36W
Period	70-01-10 to 71-12-03
SO_4^{--} mg L^{-1}	ssc $\bar{x}$ 9.28 s = 1.4 n = 50
Gauge	NO GAUGE
Lat Long	
Period	
Data	R ~ 0.750 m yr^{-1} S = 2.3 g m^{-2} yr^{-1}

Name	SAINT-JEAN AU PONT-ROUTE 132 DE DOUGLASTOWN
NAOUADAT Code	00PQ01BH0003000
Lat Long	48-46-18N 64-28-27W
Period	74-06-16 to 79-12-16
SO_4^{--} mg L^{-1}	ssc $\bar{x}$ 4.83 s = 1.6 n = 203
Gauge	NO GAUGE
Lat Long	
Period	
Data	R = ~ 0.8 m yr^{-1} S = ~ 1.3 g m^{-2} yr^{-1}

Data for Rivers in Quebec: Region 2

Name	YORK A 4.3 KM EN AMONT DU PONT-ROUTE 132 A SUNNY BANK
NAQUADAT Code	00PQ01BH0004000
Lat Long	48-50-07N 64-35-26W
Period	70-01-05 to 79-12-16
SO_4^{--} mg L^{-1}	$\bar{x}$ 13.2 s = 8.9 n = 363
Gauge	YORK A 4.3 KM EN AMONT DU PONT-ROUTE 132 A SUNNY BANK 020401 1010 km^2
Lat Long	48-50-03N 64-37-30W
Period	1945-1979
Data	21.6 cms R = 0.674 m yr^{-1} S = 2.96 g m^{-2} yr^{-1}

Name	DARTMOUTH AU PONT-ROUTE A SAINT-MAJORIQUE
NAQUADAT Code	00PQ01BH0006000
Lat Long	48-54-24N 64-35-57W
Period	71-08-28 to 78-09-10
SO_4^{--} mg L^{-1}	$\bar{x}$ = 5.73 s = 2.8 n = 278
Gauge	DARTMOUTH A 1.6 KM EN AMONT DU RUISSEAU DU PAS DE DAME 020602 642 km^2
Lat Long	48-58-47N 64-41-55W
Period	1979-1979
Data	15.4 cms R = 0.756 m yr^{-1} S = 1.44 g m^{-2} yr^{-1}

Name	MADELEINE A 5.1 KM EN AMONT DUPONT-ROUTE 132 A RIVIERE-LA-MADELEINE
NAQUADAT Code	00PQ02QC0002000
Lat Long	49-12-10N 65-17-44W
Period	74-11-24 to 79-12-16
SO_4^{--} mg L^{-1}	$\bar{x}$ = 6.29 s = 1.5 n = 16
Gauge	MADELEINE A 5.1 KM EN AMONT DUPONT-ROUTE 132 A RIVIERE-LA-MADELEINE 020802 1220 km^2
Lat Long	49-12-10N 65-17-44W
Period	1953-1979
Data	29.7 cms R = 0.767 m yr^{-1} S = 1.61 g m^{-2} yr^{-1}

Name	MADELEINE AU PONT-ROUTE 132 A RIVIERE-LA-MADELEINE
NAQUADAT Code	00PQ02QC0003000
Lat Long	49-14-04N 64-18-51W
Period	70-05-26 to 74-11-17
SO_4^{--} mg L^{-1}	$\bar{x}$ 6.42 (ssc) s = 2.6 n = 129
Gauge	MADELEINE A 5.1 KM EN AMONT DU PONT-ROUTE 132 A RIVIERE-LA-MADELEINE 020802 1220 km^2
Lat Long	49-12-10N 64-17-44W
Period	22 years
Data	29.6 cms R = 0.764 m yr^{-1} S = 1.64 g m^{-2} yr^{-1}

Name	SAINTE-ANNE A LA FOSSE PELLETIER
NAQUADAT Code	00PQ02QC0005000
Lat Long	49-05-60N 66-30-43W
Period	70-01-01 to 79-12-16
SO_4^{--} mg L^{-1}	Ex SO_4 $\bar{x}$ 6.11 s = 4.7 n = 405
Gauge	SAINTE-ANNE A 9.7 KM EN AMONT DU PONT-ROUTE 132
	021407 785 km^2
Lat Long	49-03-32N 66-29-12W
Period	10 years
Data	23.0 cms R = 0.923 m yr^{-1} S = 1.88 g m^{-2} yr^{-1}

Name	CAP-CHAT A 5.3 KM EN AMONT DU PONT-ROUTE 132 A CAP CHAT
NAQUADAT Code	00PQ02QB0001000
Lat Long	49-03-23N 66-40-18W
Period	71-07-13 to 78-09-12
SO_4^{--} mg L^{-1}	Ex SO_4 $\bar{x}$ 5.49 s = 1.7 n = 200
Gauge	DU CAP CHAT A 5.3 KM EN AMONT DU PONT-ROUTE 132 A CAP CHAT
	021502 752 km^2
Lat Long	49-03-23N 66-40-20W
Period	11 years
Data	1.99 cms R = 0.865 m yr^{-1} S = 1.58 g m^{-2} yr^{-1}

Name	MATANE A 8.5 KM EN AMONT DU PONT-ROUTE 132 A MATANE
NAQUADAT Code	00PQ02QB0002000
Lat Long	48-46-27N 67-32-30W
Period	70-01-07 to 74-06-14
SO_4^{--} mg L^{-1}	$\bar{x}$ 6.99 s = 2.9 n = 193
Gauge	MATANE A 8.5 KM EN AMONT DU PONT-ROUTE 132 A MATANE
	021601 1650 km^2
Lat Long	48-46-29N 67-32-31W
Period	1926-1979
Data	39.8 cms R = 0.760 m yr^{-1} S = 1.77 g m^{-2} yr^{-1}

Name	MATANE AU PONT-ROUTE A 4.8 KM EN AMONT DE MATANE
NAQUADAT Code	00PQ02QB0003000
Lat Long	48-47-38N 67-32-17W
Period	74-06-16 to 79-12-16
SO_4^{--} mg L^{-1}	$\bar{x}$ = 6.1 s = 2.2 n = 198
Gauge	MATANE A 8.5 KM EN AMONT DUPONT-ROUTE 132 A MATANE
	021601 1650 km^2
Lat Long	48-46-29N 67-32-31W
Period	54 years
Data	39.7 cms R = 0.758 m yr^{-1} S = 1.54 g m^{-2} yr^{-1}
	(ssc S = 1.40 g m^{-2} yr^{-1})

Name	BLANCHE AU PONT-ROUTE 132 A SAINT-ULRIC
NAQUADAT Code	00PQ02QB0004000
Lat Long	48-47-08N 67-41-40W
Period	71-08-27 to 78-09-10
SO_4^{--} mg L^{-1}	$\bar{x}$ 7.5 s = 2.6 n = 272
Gauge	BLANCHE A 3.5 KM EN AMONT DU PONT-ROUTE 132
	021702 208 km^2
Lat Long	48-46-00N 67-39-58W
Period	43 years
Data	4.85 cms R = 0.734 m yr^{-1} S = 1.84 g m^{-2} yr^{-1}

Name	METIS AU BARRAGE METIS DEUX A GRAND-METIS
NAQUADAT Code	00PQ02QA0001000
Lat Long	48-37-09N 68-08-25W
Period	70-01-22 to 79-12-16
SO_4^{--} mg L^{-1}	$\bar{x}$ = 6.2 s = 2.1 n = 317
Gauge	
Lat Long	
Period	
Data	R = ~ 0.63 m yr^{-1} S = ~ 1.3 g m^{-2} yr^{-1}

Name	RIMOUSKI A 5.3 KM EN AMONT DU PONT-ROUTE 132 A RIMOUSKI
NAQUADAT Code	00PQ02QA0002000
Lat Long	48-22-58N 68-30-33W
Period	70-01-01 to 79-12-16
SO_4^{--} mg L^{-1}	Ex SO_4 $\bar{x}$ 9.18 s = 2.8 n = 323
Gauge	RIMOUSKI A 3.7 KM EN AMONT DU PONT-ROUTE 132
	022003 1590 km^2
Lat Long	48-24-48N 68-33-22W
Period	55 years
Data	31.6 cms R = 0.626 m yr^{-1} s = 1.92 g m^{-2} yr^{-1}

Name	DU BIC AU PONT ROUTE DE CHEMIN DU GOLF
NAQUADAT Code	00PQ02QA0003000
Lat Long	48-29-57N 68-33-51W
Period	70-03-16 to 72-06-02
SO_4^{--} mg L^{-1}	$\bar{x}$ = 14.4 s = 5.6 n = 110
Gauge	
Lat Long	
Period	
Data	R = ~ 0.63 m yr^{-1} S = ~ 3.02 g m^{-2} yr^{-1}

Name	DES TROIS PISTOLES A 0.6 KM EN AMONT DUPONT-ROUTE 132 A TROIS PISTOLES
NAQUADAT Code	00PQ02QA0011000
Lat Long	48-05-26N 69-12-33W
Period	71-08-26 to 79-12-17
SO_4^{--} mg L^{-1}	Ex SO_4 $\bar{x}$ 7.47 s = 2.9 n = 304
Gauge	DES TROIS PISTOLES A 2.1 KM EN AMONT DU PONT-ROUTE 132 022301 958 km^2
Lat Long	48-05-21N 69-11-47W
Period	55 years
Data	17.8 cms R = 0.585 m yr^{-1} Ex S = 1.46 g m^{-2} yr^{-1}

Name	FOURCHUE A 0.2 KM EN AVAL DU BARRAGE MORIN
NAQUADAT Code	00PQ02PG0003000 02250C
Lat Long	47-39-02N 69-30-46W
Period	71-08-15 to 72-03-13
SO_4^{--} mg L^{-1}	$\bar{x}$ = 5.5 s = 1.8 n = 6
Gauge	FOURCHUE A 0.2 KM EN AVAL DU BARRAGE MORINE 02250 267 km^2
Lat Long	47-39-03N 69-30-46W
Period	35 years
Data	48.9 cms R = 0.577 m yr^{-1} S = 1.06 g m^{-2} yr^{-1}

Name	DU LOUP AU PONT-ROUTE DU CHEMIN DU LAC
NAQUADAT Code	00PQ02PG0001000 02250A
Lat Long	47-44-17N 69-30-56W
Period	70-01-01 to 74-06-09
SO_4^{--} mg L^{-1}	$\bar{x}$ = 8.9 s = 2.9 n = 143
Gauge	DU LOUP A 0.6 KM EN AMONT DU PONT-ROUTE 232
	022513 1040 km^2
Lat Long	47-49-21N 69-31-14W
Period	55 years
Data	18.9 cms R = 0.572 m yr^{-1} S = 1.70 g m^{-2} yr^{-1}

Name	DU LOUP AU PONT-ROUTE 185
NAQUADAT Code	00PQ02PG0004000
Lat Long	47-48-38N 69-31-05W
Period	74-06-16 to 76-12-05
SO_4^{--} mg L^{-1}	$\bar{x}$ = 7.7 s = 2.6 n = 85
Gauge	DU LOUP AU PONT-ROUTE A SAINT JOSEPH-DE-KAMOURASKA
	022507 518 km^2
Lat Long	47-36-45N 69-38-45W
Period	1978-10 to 1979-09
Data	130 cms R = 0.791 m yr^{-1} S = 2.03 g m^{-2} yr^{-1}

Name	OUELLE AU PONT-ROUTE A 0.8 KM EN AVAL DU PONT-ROUTE 20
NAQUADAT Code	00PQ02PG0007000 02270B
Lat Long	47-25-59N 69-58-19W
Period	70-06-16 to 72-12-17
SO_4^{--} mg L^{-1}	$\bar{x}$ 7.7 s = 2.7 n = 208
Gauge	OUELLE AU PONT-ROUTE A SAINTE-GABRIEL-DE-KAMOURASKA
	022703 785 KM^2
Lat Long	47-21-39N 69-56-40W
Period	1970-1978
Data	15.0 cms R = 0.602 m yr^{-1} S = 1.54 g m^{-2} yr^{-1}

Name	LINIERE AU PONT-ROUTE A SAINT-COME
NAQUADAT Code	00PQ02PJ0004000
Lat Long	46-03-33N 70-31-41W
Period	70-04-17 to 73-10-30
SO_4^{--} mg L^{-1}	$\bar{x}$ = 7.2 s = 2.1 n = 106
Gauge	NO GAUGE
Lat Long	
Period	
Data	R = ~ 0.7 m yr^{-1} S = ~ 1.7 g m^{-2} yr^{-1}

Name	DU SUD AU PONT-ROUTE 20 A MONTMAGNY
NAQUADAT Code	00PQ02PH0004000 02310D
Lat Long	46-58-00N 70-33-47W
Period	74-06-16 to 79-12-16
SO_4^{--} mg L^{-1}	$\bar{x}$ = 9.2 s = 3.3 n = 203
Gauge	DU SUD A 1.0 KM EN AMONT DU PONT-ROUTE A ARTHURVILLE 023106 821 km^2
Lat Long	46-49-14N 70-45-25W
Period	55 years
Data	20.3 cms R = 0.779 m yr^{-1} S = 2.39 g m^{-2} yr^{-1}

Name	DU SUD AU PONT-ROUTE A ARTHURVILLE
NAQUADAT Code	00PQ02PH0001000 02310A
Lat Long	46-49-35N 70-45-24W
Period	70-01-02 to 74-06-09
SO_4^{--} mg L^{-1}	$\bar{x}$ 7.3 s = 2.1 n = 114
Gauge	DU SUD A 1.0 KM EN AMONT DU PONT-ROUTE A ARTHURVILLE 023106 821 KM^2
Lat Long	46-49-14N 70-45-25W
Period	55 years
Data	20.3 cms R = 0.779 m yr^{-1} S = 1.90 g m^{-2} yr^{-1}

Name	CHAUDIERE AU PONT-ROUTE A SAINT-LAMBERT-DE-LEVIS
NAQUADAT Code	00PQ02PJ0001000
Lat Long	46-35-12N 71-12-51W
Period	70-01-01 to 78-09-10
SO_4^{--} mg L^{-1}	$\bar{x}$ 9.2 s = 2.8 n = 329
Gauge	CHAUDIERE AU PONT-ROUTE 210 A SAINT-LAMBERT-DE-LEVIS
	023402 5830 km^2
Lat Long	46-35-16N 71-12-59W
Period	59 years
Data	115 cms R = 0.621 m yr^{-1} Ex S = 1.91 g m^{-2} yr^{-1}

Name	CHAUDIERE AU PONT-ROUTE DE SAINT-SAMUEL
NAQUADAT Code	00PQ02PJ0007000
Lat Long	45-41-30N 70-47-12W
Period	70-06-16 to 79-12-16
SO_4^{--} mg L^{-1}	$\bar{x}$ 7.2 s = 2.1 n = 97
Gauge	CHAUDIERE A 0.2 KM EN AVAL DU RUISSEAU DROLET
	023403 1170 km^2
Lat Long	45-41-30N 70-47-09W
Period	1915-1979
Data	22.9 cms R = 0.617 m yr^{-1} S = 1.48 g m^{-2} yr^{-1}

Name	FAMINE AU PONT-ROUTE 173 A SAINT-GEORGES-DES-BEAUCE
NAQUADAT Code	00PQ02PJ0010000
Lat Long	46-07-44N 70-41-17W
Period	71-10-06 to 73-10-30
SO_4^{--} mg L^{-1}	$\bar{x}$ 8.4 s = 3.2 n = 53
Gauge	FAMINE A 6.3 KM EN AMONT DU PONT-ROUTE 173 A SAINT-GEORGES 023422 686 km^2
Lat Long	46-09-51N 70-38-23W
Period	1964-1978
Data	16.3 cms R = 0.478 m yr^{-1} S = 2.10 g m^{-2} yr^{-1}

Name	CHAUDIERE AU PONT-ROUTE A NOTRE-DAME-DES-PINS
NAQUADAT Code	00PQ02PJ0005000
Lat Long	46-10-55N 70-43-04W
Period	70-01-01 to 79-12-16
SO_4^{--} mg L^{-1}	$\bar{x}$ = 8.8 s = 2.9 n = 100
Gauge	CHAUDIERE A 4.7 KM EN AMONT DU PONT-ROUTE 108 A BEAUCEVILLE 023426 4090 km^2
Lat Long	46-12-04N 70-44-42W
Period	1964-1978
Data	83.9 cms R = 0.646 m yr^{-1} S = 1.90 g m^{-2} yr^{-1}

Name	DU CHENE AU PONT-ROUTE 132 A LECLERCVILLO
NAQUADAT Code	00PQ02PK0001000
Lat Long	46-34-22N 71-59-35W
Period	73-12-02 to 79-12-15
SO_4^{--} mg L^{-1}	$\bar{x}$ = 14.8 s = 7.9 n = 239
Gauge	NO GAUGE
Lat Long	
Period	
Data	R = ~ 0.82 m yr^{-1} S = 4.05 g m^{-2} yr^{-1}

Name	PETITE DU CHENE AU PONT-ROUTE DE LECLERCVILLE
NAQUADAT Code	00PQ02PK0002000
Lat Long	46-33-24N 72-02-39W
Period	73-12-02 to 78-09-10
SO_4^{--} mg L^{-1}	$\bar{x}$ 12.6 s = 5.7 n = 223
Gauge	BECANCOUR A 2.1 KM EN AMONT DE LA PALMER
	024003 922 km^2
Lat Long	46-18-22N 71-27-05W
Period	1966-1978
Data	24.0 cms R = 0.820 m yr^{-1} S = 3.44 g m^{-2} yr^{-1}

Name	BECANCOUR AU PONT-ROUTE 132 A BECANCOUR
NAQUADAT Code	00PQ02PL0004000
Lat Long	46-21-11N 72-26-17W
Period	73-12-02 to 79-12-10
SO_4^{--} mg L^{-1}	$\bar{x}$ = 13.3 s = 5.1 n = 146
Gauge	BEACANCOUR AU PONT-ROUTE PRES DE SAINT-SYLVERE
	024007 2340 km^2
Lat Long	46-11-41N 72-17-02W
Period	8 years
Data	60.0 cms R = 0.808 m yr^{-1} s = 3.58 g m^{-2} yr^{-1}

Name	GENTILLY AU PONT-ROUTE 132 A GENTILLY
NAQUADAT Code	00PQ02PK0004000
Lat Long	46-22-59N 72-20-12W
Period	73-13-02 to 79-11-12
SO_4^{--} mg L^{-1}	$\bar{x}$ 16.4 s = 30.2 n = 222
Gauge	NO GAUGE
Lat Long	
Period	
Data	R = ~ 0.8 S ~ 4.4 g m^{-2} yr^{-1}

Data for Rivers in Quebec: Region 3

Name	NICOLET SUD-OUEST AU PONT-ROUTE A NICOLET FALLS
NAQUADAT Code	00PQ020D0002000
Lat Long	45-47-30N 71-58-54W
Period	71-08-20 to 73-10-31
SO_4^{--} mg L^{-1}	$\bar{x}$ 10.3 s = 2.7 n = 52
Gauge	NICOLET SUD-OUEST AU PONT-ROUTE 255 EN AVAL D'ASBESTOS
	030101 544 km^2
Lat Long	45-47-30N 71-58-09W
Period	49 years
Data	11.9 cms R = 0.689 m yr^{-1} S = 2.37 g m^{-2} yr^{-1}

Name	NICOLET AU PONT-ROUTE A NICOLET
NAQUADAT Code	00PQ020D0005000
Lat Long	46-13-31N 72-37-30W
Period	73-12-02 to 78-11-05
SO_4^{--} mg L^{-1}	$\bar{x}$ = 16.5 s = 6.1 n = 175
Gauge	NICOLET A 5.8 KM EN AVAL DE LA BULSTRODE 030103 1540 km^2
Lat Long	46-03-23N 72-18-23W
Period	1966-1978
Data	35.4 cms R = 0.724 m yr^{-1} S = 3.98 g m^{-2} yr^{-1}

Name	RICHELIEU A L'USINE DE FILTRATION A SOREL
NAQUADAT Code	00PQ020J0008000
Lat Long	46-01-00N 73-07-49W
Period	75-08-22 to 79-12-16
SO_4^{--} mg L^{-1}	$\bar{x}$ 15.3 s = 3.7 n = 146
Gauge	
Lat Long	
Period	
Data	R = ~ 0.55 m yr^{-1} S ~ 2.8 g m^{-2} yr^{-1}

Name	NICOLET AU PONT-ROUTE 20 A SAINT-LEONARD
NAQUADAT Code	00PQ020D0001000
Lat Long	46-03-29N 72-18-33W
Period	70-01-07 to 73-11-14
SO_4^{--} mg L^{-1}	$\bar{x}$ 15.0 s = 5.7 n = 75
Gauge	NICOLET A 5.8 KM EN AVAL DE LA BULSTRODE 030103 1540 km^2
Lat Long	46-03-23N 72-18-23W
Period	1966-1978
Data	35.4 cms R = 0.724 m yr^{-1} S = 3.62 g m^{-2} yr^{-1}

Name	SAINT FRANCOIS A LA SORTIE DU LAC AYLMER
NAQUADAT Code	00PQ020E0035000
Lat Long	45-45-37N 71-24-23W
Period	73-11-21 to 75-11-19
SO_4^{--} mg L^{-1}	$\bar{x}$ = 6.1 s = 1.5 n = 23
Gauge	SAINT FRANCOIS-RESERVOIR AYLMER 030202 1710 km^2
Lat Long	45-45-37N 71-24-23W
Period	34 years
Data	34.4 cms R = 0.634 m yr^{-1} S = 1.29 g m^{-2} yr^{-1}

Name	SAINT-FRANCOIS AU PONT-ROUTE A PIERREVILLE
NAQUADAT Code	00PQ020F0005000 03020G
Lat Long	46-04-00N 72-49-00W
Period	73-11-19 to 79-12-16
SO_4^{--} mg L^{-1}	$\bar{x}$ 10.9 s = 4.3 n = 145
Gauge	SAINT-FRANCOIS-CENTRALE DE HEMMINGS FALLS 030203 9610 km^2
Lat Long	45-51-42N 72-27-11W
Period	53 years
Data	191 cms R = 0.626 m yr^{-1} S = 2.27 g m^{-2} yr^{-1}

Name	SAINT FRANCOIS AU PONT-ROUTE 20 A DRUMMONDVILLE
NAQUADAT Code	00PQ020F0001000
Lat Long	45-54-33N 72-29-47W
Period	70-01-01 to 73-11-14
SO_4^{--} mg L^{-1}	$\bar{x}$ = 13.5 s = 3.6 n = 151
Gauge	SAINT FRANCOIS-CENTRALE DE HEMMINGS FALLS 030203 9610 km^2
Lat Long	45-51-42N 72-27-11W
Period	53 years
Data	191 cms R = 0.626 m yr^{-1} S = 2.82 g m^{-2} yr^{-1}

Name	EATON AU PONT-ROUTE 108 A COOKSHIRE
NAQUADAT Code	00PQ020E0020000
Lat Long	45-24-51N 71-37-26W
Period	70-01-01 to 72-03-01
SO_4^{--} mg L^{-1}	$\bar{x}$ 10.3 s = 4.5 n = 183
Gauge	EATON A 0.6 KM DE LA SAINT-FRANCOIS (NO. 3) 030234 642 km^2
Lat Long	45-28-02N 71-39-19W
Period	46 years
Data	13.3 cms R = 0.653 m yr^{-1} S = 2.24 g m^{-2} yr^{-1}

Name	YAMASKA A 3.5 KM EN AMONT DU PONT-ROUTE A FARNHAM
NAQUADAT Code	00PQ020G0002000
Lat Long	45-17-26N 72-56-48W
Period	70-01-13 to 78-03-19
SO_4^{--} mg L^{-1}	$\bar{x}$ = 13.6 s = 4.1 n = 347
Gauge	YAMASKA A 0.6 KM EN AMONT DU PONT-ROUTE A FARNHAM 030302 1270 km^2
Lat Long	45-16-57N 72-57-57W
Period	38 years
Data	21.8 cms R = 0.541 m yr^{-1} S = 2.45 g m^{-2} yr^{-1}

Name	SAINT FRANCOIS A PONT-ROUTE 122 A ASCOT CORNER
NAQUADAT Code	00PQ020E0021000
Lat Long	45-26-47N 71-45-59W
Period	70-07-10 to 75-11-19
SO_4^{--} mg L^{-1}	$\bar{x}$ 9.6 s = 4.2 n = 85
Gauge	SAINT FRANCOIS CENTRALE DE WESTBURY 030207 3320 km^2
Lat Long	45-29-58N 71-37-04W
Period	1929-1979
Data	71.1 cms R = 0.675 m yr^{-1} S = 2.16 g m^{-2} yr^{-1}

Name	EATON AU PONT-ROUTE A 6.7 KM DE LA SAINT-FRANCOIS
NAQUADAT Code	00PQ020E0022000
Lat Long	45-25-18N 71-37-58W
Period	72-03-02 to 73-10-31
SO_4^{--} mg L^{-1}	$\bar{x}$ = 8.6 s = 3.1 n = 75
Gauge	EATON A 0.6 KM DE LA SAINT-FRANCOIS (NO. 3) 030234 642 km^2
Lat Long	45-28-02N 71-39-19W
Period	1953-1979
Data	13.3 cms R = 0.653 m yr^{-1} S = 1.87 g m^{-2} yr^{-1}

Name	DAVID AU PONT-ROUTE A L'EMBOUCHURE
NAQUADAT Code	00PQ020G0036000
Lat Long	45-58-18N 72-53-52W
Period	73-11-12 to 75-11-12
SO_4^{--} mg L^{-1}	$\bar{x}$ 28.2 s = 13.4 n = 23
Gauge	DAVID AU PONT-ROUTE A SAINT-DAVID 030316 342 km^2
Lat Long	45-57-13N 72-51-34W
Period	1969-1979
Data	6.10 cms R = 0.562 m yr^{-1} S = 5.28 g m^{-2} yr^{-1}

Name	YAMASKA NORD AU PONT DE LA RUE CHURCH A LASORTIE DU RESERVOIR BOIVIN
NAQUADAT Code	00PQ020G071000
Lat Long	45-23-52N 72-43-00W
Period	72-07-29 to 78-08-29
SO_4^{--} mg L^{-1}	$\bar{x}$ = 15.7 s = 9.4 n = 48
Gauge	YAMASKA NORD A 0.2 KM EN AMONT DU PONT-ROUTE A SHEFFORDVALE 030309 153 km^2
Lat Long	45-24-57N 72-37-20W
Period	1968-1979
Data	2.70 cms R = 0.556 m yr^{-1} S = 2.91 g m^{-2} yr^{-1}

Name	AU SAUMON AU PONT ROUTE DE GOULD
NAQUADAT Code	00PQ020E0023000
Lat Long	45-37-18N 71-23-35W
Period	71-08-12 to 73-10-30
SO_4^{--} mg L^{-1}	$\bar{x}$ 7.4 s = 2.2 n = 59
Gauge	AU SAUMON A 1.9 KM EN AMONT DE LA MOFFAT 030282 746 km^2
Lat Long	45-34-50N 71-23-12W
Period	1974-1979
Data	20.1 cms R = 0.849 m yr^{-1} S = 2.09 g m^{-2} yr^{-1}

Name	NOIRE AU PONT-ROUTE 235 A SAINT-PIE
NAQUADAT Code	00PQ020G0003000
Lat Long	45-29-44N 72-54-11W
Period	70-03-25 to 79-12-09
SO_4^{--} mg L^{-1}	$\bar{x}$ = 16.3 s = 5.9 n = 142
Gauge	NOIRE A 7.6 KM DE LA YAMASKA 030304 1470 km^2
Lat Long	45-29-59N 72-54-23W
Period	1965-1979
Data	28.6 cms R = 0.613 m yr^{-1} S = 3.33 g m^{-2} yr^{-1}

Name	NOIRE AU PONT-ROUTE 116 A UPTON
NAQUADAT Code	00PQ020G0005000
Lat Long	45-38-56N 72-41-30W
Period	70-01-15 to 73-11-11
SO_4^{--} mg L^{-1}	$\bar{x}$ 14.2 s = 4.5 n = 81
Gauge	NOIRE A 4.7 MI DE LA YAMASKA 030304 1470 km^2
Lat Long	45-26-59N 72-54-23W
Period	1970-1973
Data	31.8 cms R = 0.681 m yr^{-1} S = 3.22 g m^{-2} yr^{-1}

Name	YAMASKA AU PONT-ROUTE A YAMASKA
NAQUADAT Code	00PQ020G0023000
Lat Long	46-00-15N 72-54-38W
Period	73-11-12 to 79-11-25
SO_4^{--} mg L^{-1}	$\bar{x}$ = 21.2 s = 9.3 n = 123
Gauge	YAMASKA A 0.6 KM EN AVAL DU BARRAGE A SAINT-HYACINTHE 030334 3370 km^2
Lat Long	45-37-18N 72-56-22W
Period	1977-1979
Data	67.0 cms R = 0.626 m yr^{-1} S = 4.43 g m^{-2} yr^{-1}

Name	YAMASKA-NORD AU PONT-ROUTE A SHEFFORDVALE
NAQUADAT Code	00PQ020G0006000
Lat Long	45-24-52N 72-37-35W
Period	70-02-01 to 79-12-16
SO_4^{--} mg L^{-1}	$\bar{x}$ 12.1 s = 3.8 n = 104
Gauge	YAMASKA NORD A 0.2 KM EN AMONT DU PONT-ROUTE A SHEFFORDVALE 030309 153 km^2
Lat Long	45-24-57N 72-37-20W
Period	5 years
Data	2.76 cms R = 0.568 m yr^{-1} S = 2.29 g m^{-2} yr^{-1}

Name	YAMASKA AU PONT-ROUTE 20 A SAINT-HYACINTHE
NAQUADAT Code	00PQ020G0004000
Lat Long	45-39-02N 75-56-26W
Period	70-03-25 to 78-10-04
SO_4^{--} mg L^{-1}	$\bar{x}$ = 18.1 s = 5.2 n = 196
Gauge	YAMASKA A 0.6 KM EN AVAL DU BARRAGE A SAINT-HYACINTHE 030334 3370 km^2
Lat Long	45-37-18N 72-56-22W
Period	1977-1978
Data	82.1 cms R = 0.767 m yr^{-1} S = 4.63 g m^{-2} yr^{-1}

Data for Rivers in Quebec: Region 4

Name	DU NORD AU PONT DE LA RUE LAJEUNESSE A SAINT-JEROME
NAQUADAT Code	00PQ02LC0001000
Lat Long	45-47-21N 74-00-37W
Period	70-01-28 to 73-11-18
SO_4^{--} mg L^{-1}	$\bar{x}$ 8.8 s = 2.1 n = 62
Gauge	DU NORD A 4.8 KM EN AMONT DU PONT-ROUTE DU C.N. A SAINT-JEROME 040110 1170 km^2
Lat Long	45-47-35N 74-00-48W
Period	48 years
Data	22.9 cms R = 0.617 m yr^{-1} S = 1.81 g m^{-2} yr^{-1}

Name	DU NORD AU PONT-ROUTE 344 A SAINT ANDRE
NAQUADAT Code	00PQ02LC0002000
Lat Long	45-33-45N 74-20-15W
Period	72-01-19 to 79-12-16
SO_4^{--} mg L^{-1}	$\bar{x}$ = 11.7 s = 11.5 n = 88
Gauge	DU NORD A 0.5 KM EN AVAL DU PONT C.P. PRES DE SAINT-AGATHE 040122 311 km^2
Lat Long	46-02-45N 74-15-10W
Period	1970-1978
Data	7.27 cms R = 0.736 m yr^{-1} S = 2.87 g m^{-2} yr^{-1}

Name	SIMON AU PONT-ROUTE A 1.6 KM DE L'EMBOUCHURE
NAQUADAT Code	00P002LC0011000
Lat Long	45-54-45N 74-09-19W
Period	76-05-26 to 78-08-22
SO_4^{--} mg L^{-1}	$\bar{x}$ 7.5 s = 0.9 n = 14
Gauge	SIMON A 1.4 KM DE LA DU NORD 040127 167 km^2
Lat Long	45-54-48N 74-09-07W
Period	1977-10 to 1978-09
Data	3.91 cms R = 0.738 m yr^{-1} S = 1.84 g m^{-2} yr^{-1}

Name	BONNIEBROOK CREEK AU PONT-ROUTE A MIRABEL (ST-CANUT)
NAQUADAT Code	00PQ02LC0007000
Lat Long	45-43-23N 74-05-21W
Period	76-05-26 to 78-08-22
SO_4^{--} mg L^{-1}	$\bar{x}$ = 7.8 s = 1.8 n = 14
Gauge	BONNIEBROOK A 2.1 KM EN AVAL DE LA DECHARGE DU LAC FIDDLER 040128 54.1 km^2
Lat Long	45-48-04N 74-10-16W
Period	1977-10 to 1978-09
Data	1.30 cms R = 0.757 m yr^{-1} S = 1.97 g m^{-2} yr^{-1}

Name	DE L'OUEST AU PONT-ROUTE A 1.0 KM EN AMONT DE LACHUTE
NAQUADAT Code	00PQ02LC0005000
Lat Long	45-39-24N 74-21-06W
Period	76-05-25 to 79-12-16
SO_4^{--} mg L^{-1}	$\bar{x}$ 8.7 s = 1.5 n = 31
Gauge	NO GAUGE
Lat Long	
Period	
Data	R = ~0.6 m yr^{-1} S = ~1.7 g m^{-2} yr^{-1}

Name	ROUGE AU PONT-ROUTE 148
NAQUADAT Code	00PQ02LC0053000
Lat Long	45-38-35N 74-41-26W
Period	71-09-11 to 79-12-16
SO_4^{--} mg L^{-1}	$\bar{x}$ = 8.5 s = 4.9 n = 193
Gauge	ROUGE EN AMONT DE LA CHUTE MCNEIL 040204 5460 km^2
Lat Long	45-44-11N 74-41-23W
Period	39 years
Data	103 cms R = 0.594 m yr^{-1} S = 1.68 g m^{-2} yr^{-1}

Name	DU LIEVRE AU PONT-ROUTE A NOTRE DAME-DE-LA-SALETTE
NAQUADAT Code	00PQ02LF0004000
Lat Long	45-46-18N 75-35-39W
Period	73-11-25 to 78-11-06
SO_4^{--} mg L^{-1}	$\bar{x}$ 6.1 s = 1.3 n = 167
Gauge	DU LIEVRE - CENTRALE DE MASSON 040617 9560 km^2
Lat Long	45-32-38N 75-25-30W
Period	21 years
Data	164 cms R = 0.540 m yr^{-1} S = 1.10 g m^{-2} yr^{-1}

Name	GATINEAU AU PONT-ROUTE DE FARRELLTON
NAQUADAT Code	00PQ02LH0001000 04080A
Lat Long	45-44-30N 75-54-24W
Period	71-09-10 to 73-11-18
SO_4^{--} mg L^{-1}	$\bar{x}$ = 7.1 s = 1.7 n = 58
Gauge	GATINEAU - CENTRALE DE PAUGAN FALLS 040803 22500 km^2
Lat Long	45-48-34N 75-55-55W
Period	1928-1978
Data	347 cms R = 0.486 m yr^{-1} S = 1.15 g m^{-2} yr^{-1}

Name	GATINEAU AU PONT-ROUTE DE TOURAINE
NAQUADAT Code	00PQ02LH0003000 04080C
Lat Long	45-29-12N 75-44-57W
Period	73-11-25 to 79-12-16
SO_4^{--} mg L^{-1}	$\bar{x}$ 6.5 s = 1.5 n = 178
Gauge	GATINEAU - CENTRALE DE PAUGAN FALLS 040803 22 500 km^2
Lat Long	45-48-34N 75-55-55W
Period	1928-1978
Data	347 cm R = 0.486 m yr^{-1} S = 1.05 g m^{-2} yr^{-1}

Name	COULONGE AU PONT-ROUTE 184 A FORT-COULONGE
NAQUADAT Code	00PQ02KG0002000
Lat Long	45-51-05N 76-43-49W
Period	79-01-14 to 79-12-16
SO_4^{--} mg L^{-1}	$\bar{x}$ = 8.1 s = 1.1 n = 9
Gauge	COULONGE A 8.4 KM EN AMONT DU PONT-ROUTE 148 PRES DE FONT-COULONGE 041301 5150 km^2
Lat Long	45-52-26N 76-41-09W
Period	1978-10 to 1979-09
Data	81.5 cms R = 0.498 m yr^{-1} S = 1.35 g m^{-2} yr^{-1}

Name	KIPAWA AU PONT-ROUTE 101 A LANIEL
NAQUADAT Code	00PQ02JE0002000
Lat Long	47-02-30N 79-16-14W
Period	78-12-10 to 79-12-16
SO_4^{--} mg L^{-1}	$\bar{x}$ 10.0 s = 0.5 n = 15
Gauge	KIPAWA A LA SORTIE DU LAC DUMOINE 042607 2110 km^2
Lat Long	46-58-13N 78-02-33W
Period	1978-10 to 1979-09
Data	7.96 cms R = 0.12 m yr^{-1} S = 1.83 g m^{-2} yr^{-1}

Name	KINOJEVIS AU PONT-ROUTE 117 A MCWATTER
NAQUADAT Code	00PQ02JB0002000
Lat Long	48-12-29N 78-51-45W
Period	78-12-10 to 79-12-16
SO_4^{--} mg L^{-1}	$\bar{x}$ = 17.7 s = 7.5 n = 16
Gauge	KINOJEVIS A 0.2 KM EN AMONT DU PONT-ROUTE A CLERICY 043012 2590 km^2
Lat Long	48-21-51N 78-51-29W
Period	1978-10 to 1979-09
Data	50.3 cms R = 0.612 m yr^{-1} S = 3.61 g m^{-2} yr^{-1}

Data for Rivers in Quebec: Region 5

Name	SAINT-MAURICE A L'USINE DE FILTRATION DE TROIS-RIVIERES
NAQUADAT Code	00PO02NG0004000
Lat Long	46-22-58N 72-36-38W
Period	73-11-19 to 78-12-10
SO_4^{--} mg L^{-1}	$\bar{x}$ 5.5 s = 1.1 n = 204
Gauge	SAINT-MAURICE - CENTRALE DE GRAND-MERE 050115 42 000 km^2
Lat Long	46-36-57N 72-40-46W
Period	78 years
Data	715 cms R = 0.54 m yr^{-1} S = 0.98 g m^{-2} yr^{-1}

Name	SAINT-MAURICE A LA CENTRALE DE LA GABELLE
NAQUADAT Code	00PQ02NG0001000
Lat Long	46-26-57N 72-44-21W
Period	70-01-14 to 73-11-13
SO_4^{--} mg L^{-1}	$\bar{x}$ = 6.5 s = 1.5 n = 56
Gauge	SAINT MAURICE - CENTRALE DE LA GABELLE 050133 42 700 km^2
Lat Long	46-26-58N 72-44-24W
Period	10 years
Data	748 cms R = 0.55 m yr^{-1} S = 1.20 g m^{-2} yr^{-1}

Name	VERMILLON A 2.2 KM DU SAINT-MAURICE
NAQUADAT Code	00PQ02ND0001000
Lat Long	47-39-20N 72-57-46W
Period	71-06-10 to 72-03-21
SO_4^{--} mg L^{-1}	$\bar{x}$ 4.8 s = 0.8 n = 5
Gauge	VERMILLON A 2.3 KM DU SAINT-MAURICE 050116 2670 km^2
Lat Long	47-39-20N 72-57-46W
Period	49 years
Data	41.0 cms R = 0.484 m yr^{-1} S = 0.77 g m^{-2} yr^{-1}

Name	CROCHE A 2.6 KM EN AVAL DU RUISSEAU CHANGY
NAQUADAT Code	00PQ02NE0001000
Lat Long	47-46-01N 72-44-11W
Period	71-06-09 to 72-03-22
SO_4^{--} mg L^{-1}	$\bar{x}$ = 5.2 s = 0.9 n = 6
Gauge	CROCHE A 2.6 KM EN AVAL DU RUISSEAU CHANGY 050135 1570 km^2
Lat Long	47-46-02N 72-44-12W
Period	1965-1979 14 years
Data	31.9 cms R = 0.640 m yr^{-1} S = 1.11 g m^{-2} yr^{-1}

Name	CHAMPLAIN AU PONT-ROUTE A CHAMPLAIN
NAQUADAT Code	00PQ02PA0001000
Lat Long	46-27-02N 72-16-54W
Period	73-12-02 to 78-09-10
SO_4^{--} mg L^{-1}	$\bar{x}$ 9.2 s = 3.2 n = 218
Gauge	NO GAUGE
Lat Long	
Period	
Data	R = ~ 0.7 m yr^{-1} S = ~ 2.1 g m^{-2} yr^{-1}

Name	BATISCAN AU PONT-ROUTE A SAINT GENEVIEVE-DE-BATISCAN
NAQUADAT Code	00PQ02PA0002000
Lat Long	46-31-36N 72-20-21W
Period	70-01-05 to 78-12-10
SO_4^{--} mg L^{-1}	$\bar{x}$ = 5.9 s = 3.4 n = 303
Gauge	BATISCAN A 3.4 KM EN AVAL DE LA RIVIERE DES ENVIES
	050304 4480 km^2
Lat Long	46-35-01N 72-24-17W
Period	1967-1979 36 years
Data	102 cms R = 0.717 m yr^{-1} S = 1.41 g m^{-2} yr^{-1}

Name	SAINTE-ANNE AU PONT-ROUTE 138 A SAINTE-ANNE-DE-LA-PERADE
NAQUADAT Code	00PQ02PB0007000
Lat Long	46-34-18N 72-12-15W
Period	73-11-20 to 78-11-12
SO_4^{--} mg L^{-1}	$\bar{x}$ 5.4 s = 4.4 n = 193
Gauge	SAINTE-ANNE A 1.3 KM EN AVAL DU BARRAGE A CHUTE-PANET
	050408 1550 km^2
Lat Long	46-51-10N 71-52-39W
Period	1965-1979 13 years
Data	52.3 cms R = 1.06 m yr^{-1} S = 1.91 g m^{-2} yr^{-1}

Name	PORTNEUF A 1.9 KM DU SAINT-LAURENT
NAQUADAT Code	00PQ02PC0001000
Lat Long	46-41-57N 71-53-04W
Period	70-06-18 to 78-09-17
SO_4^{--} mg L^{-1}	$\bar{x}$ = 8.1 s = 2.5 n = 294
Gauge	PORTNEUF A 2.9 KM DU SAINT-LAURENT PRES DE PORTNEUF
	050701 355 km^2
Lat Long	46-42-33N 71-52-29W
Period	1966-1979 12 years
Data	8.73 cms R = 0.775 m yr^{-1} S = 2.09 g m^{-2} yr^{-1}

Name	JACQUES CARTIER AU PONT-ROUTE A L'EMBOUCHURE A DONNACONA
NAQUADAT Code	00PQ02PC0006000
Lat Long	46-40-41N 71-45-07W
Period	73-11-21 to 78-11-12
SO_4^{--} mg L^{-1}	$\bar{x}$ 4.6 s = 1.7 n = 216
Gauge	JACQUES CARTIER AU PONT DU C.N. PRES DE SAINT-GABRIEL
	050801 2010 km^2
Lat Long	46-53-23N 71-31-38W
Period	1923-1979 45 years
Data	61.8 cms R = 0.969 m yr^{-1} S = 1.49 g m^{-2} yr^{-1}

Name	SAINT CHARLES AU PONT SCOTT
NAQUADAT Code	00PQ02PD0002000
Lat Long	46-48-32N 71-15-24W
Period	73-11-28 to 78-11-29
SO_4^{--} mg L^{-1}	$\bar{x}$ = 12.4 s = 5.4 n = 29 SSC = 6.9
Gauge	SAINT-CHARLES A 0.8 KM EN AMONT DE LA LORETTE
	050904 357 km^2
Lat Long	46-48-51N 71-19-03W
Period	1968-1979
Data	8.18 cms R = 0.722 m yr^{-1} Excess S = 1.66 g m^{-2} yr^{-1}

Name	MONTMORENCY AU PONT-ROUTE 360 A COURVILLE
NAQUADAT Code	00PQ02PD0017000 05100P
Lat Long	46-53-30N 71-08-53W
Period	70-01-08 to 78-11-29
SO_4^{--} mg L^{-1}	$\bar{x}$ 4.3 s = 1.4 n = 106
Gauge	MONTMORENCY A 0.6 KM EN AVAL DE LA CENTRALE DES MARCHES-NATURELLES 051001 1100 km^2
Lat Long	46-53-39N 71-09-05W
Period	1924-1978
Data	36.2 cms R = 1.04 m yr^{-1} S = 1.49 g m^{-2} yr^{-1}
Note:	From 70-01 to 78-11, mean flow was 39.0 cms, R = 1.12 m yr^{-1}, S = 1.60 g m^{-2} yr^{-1}

Name	RUISSEAU DES EAUX-VOLEES A 0.2 KM DE LA MONTMORENCY
NAQUADAT Code	00PQ02PD0005000 05100B
Lat Long	47-16-14N 71-08-16W
Period	70-01-05 to 75-07-02
SO_4^{--} mg L^{-1}	$\bar{x}$ = 3.5 s = 0.6 n = 131
Gauge	RUISSEAU DES EAUX VOLEES A 0.2 KM DE LA MONTMORENCY 051003 9.17 km^2
Lat Long	47-16-15N 71-08-16W
Period	1966-1978
Data	0.33 cms R = 1.142 m yr^{-1} S = 1.33 g m^{-2} yr^{-1}

Name	RUISSEAU DES AULNAIES OUEST A 0.2 KM EN AMONT DU CHEMIN DU BELVEDERE
NAQUADAT Code	00PQ02PD0006000 05100C
Lat Long	47-17-21N 71-09-42W
Period	70-01-20 to 72-07-24
SO_4^{--} mg L^{-1}	$\bar{x}$ 3.3 s = 0.6 n = 34
Gauge	RUISSEAU DES AULNAIES OUEST A 0.2 KM EN AMONT DU CHEMIN DU BELVEDERE 051004 1.22 km^2
Lat Long	47-17-22N 71-09-42W
Period	1966-1978
Data	0.038 cms R = 0.981 m yr^{-1} S = 1.08 g m^{-2} yr^{-1}
Note:	From 70-01 to 72-07, mean flow was 0.0364 cms, R = 0.941 m yr^{-1}, S = 1.03 g m^{-2} yr^{-1}

Name	MONTMORENCY A 0.3 KM EN AMONT DE LA BLANCHE
NAQUADAT Code	00PQ02PD0007000 05100D
Lat Long	47-15-33N 71-08-12W
Period	70-01-19 to 72-07-24
SO_4^{--} mg L^{-1}	$\bar{x}$ = 4.2 s = 1.0 n = 33
Gauge	MONTMORENCY A 0.3 KM EN AMONT DE LA BLANCHE 051005 269 km^2
Lat Long	47-15-33N 71-08-13W
Period	1966-1978
Data	8.92 cms R = 1.04 m yr^{-1} S = 1.46 g m^{-2} yr^{-1}
Note:	From 70-01 to 72-07, mean flow was 9.34 cms, R = 1.09 m yr^{-1}, S = 1.53 g m^{-2} yr^{-1}

Name	RUISSEAU DES AULNAIES A 0.2 KM DU RUISSEAU DES EAUX VOLEES
NAQUADAT Code	00PQ02PD0008000 05100E
Lat Long	47-16-21N 71-09-38W
Period	70-01-20 to 72-07-24
SO_4^{--} mg L^{-1}	$\bar{x}$ 3.6 s = 0.8 n = 34
Gauge	RUISSEAU DES AULNAIES A 30 M DU RUISSEAU DES EAUX VOLEES
	051007 3.57 km^2
Lat Long	47-16-21N 71-09-39W
Period	1971-1978
Data	0.12 cms R = 1.06 m yr^{-1} S = 1.27 g m^{-2} yr^{-1}

Name	SAINTE-ANNE DU NORD A LA CENTRALE DE SAINT FEREOL
NAQUADAT Code	00PQ02PE0004000 05120A
Lat Long	47-07-23N 70-49-05W
Period	73-11-21 to 74-12-18
SO_4^{--} mg L^{-1}	$\bar{x}$ = 3.0 s = 0.8 n = 20
Gauge	SAINT-ANNE DU NORD - CENTRALE DE SAINT-FEREOL 051201
	974 km^2
Lat Long	74-07-25N 70-49-06W
Period	73-11 to 74-12
Data	31.57 cms R = 1.02 m yr^{-1} S = 1.02 g m^{-2} yr^{-1}

Name	SAINTE-ANNE DU NORD AU PONT-ROUTE 183 A BEAUPRE
NAQUADAT Code	00PQ02PE0003000 05120C
Lat Long	47-03-02N 70-53-03W
Period	76-11-04 to 78-11-29
SO_4^{--} mg L^{-1}	$\bar{x}$ 4.0 s = 0.6 n = 10
Gauge	SAINTE-ANNE DU NORD - CENTRALE DE SAINT-FEREOL 051201
	974 km^2
Lat Long	47-07-25N 70-49-06W
Period	1912-1978
Data	24.9 cms R = 0.805 m yr^{-1} S = 1.07 g m^{-2} yr^{-1}

Name	SAINTE-ANNE DU NORD AU PONT-ROUTE DE SAINT-FEREOL
NAQUADAT Code	00PQ02PE0002000 05120B
Lat Long	47-10-09N 70-47-44W
Period	70-06-17 to 73-11-26
SO_4^{--} mg L^{-1}	$\bar{x}$ = 4.2 s = 1.2 n = 73
Gauge	SAINTE ANNE DU NORD - CENTRALE DE SAINT-FEREOL 051201
	974 km^2
Lat Long	47-07-25N 70-49-06W
Period	1912-1978
Data	24.9 cms R = 0.805 m yr^{-1} S = 1.13 g m^{-2} yr^{-1}

Name	DU GOUFFRE AU PONT-ROUTE 138 PRES DE SAINT-URBAIN
NAQUADAT Code	00PQ02PE0001000
Lat Long	47-31-28N 70-30-42W
Period	70-03-11 to 78-12-10
SO_4^{--} mg L^{-1}	$\bar{x}$ 4.0 s = 1.2 n = 65
Gauge	DU GOUFFRE A 1.6 KM EN AMONT DU PONT-ROUTE 362 A BAIE-SAINT-PAUL 051301 865 km^2
Lat Long	47-26-51N 70-30-38W
Period	11 years 1967-1979
Data	20.4 cms R = 0.743 m yr^{-1} S = 0.991 g m^{-2} yr^{-1}

Name	MALBAIE A 1.6 KM EN AMONT DU PONT-ROUTE 138
NAQUADAT Code	00PQ02PF0002000 05150B
Lat Long	47-40-18N 70-09-38W
Period	74-08-24 to 75-01-19
SO_4^{--} mg L^{-1}	$\bar{x}$ = 5.8 s = 1.5 n = 20
Gauge	MALBAIE A 0.3 KM EN AVAL DU PONT-ROUTE A CLERMONT 051502 1700 km^2
Lat Long	47-41-39N 70-13-01W
Period	1967-1978
Data	36.4 cms R = 0.674 m yr^{-1} S = 1.30 g m^{-2} yr^{-1}

Name	OUAREAU AU PONT-ROUTE A 1.9 KM D L'EMBOUCHERE
NAQUADAT Code	00PQ020B0012000
Lat Long	45-57-06N 73-24-51W
Period	76-06-08 to 79-12-16
SO_4^{--} mg L^{-1}	$\bar{x}$ 9.7 s = 2.8 n = 28
Gauge	OUAREAU A LA TETE DES CHUTES DARWIN 052212 1270 km^2
Lat Long	46-01-48N 73-42-19W
Period	58 years
Data	25.3 cms R = 0.628 m yr^{-1} S = 2.03 g m^{-2} yr^{-1}

Name	L'ASSOMPTION AU PONT-ROUTE A SAINT PAUL L'ERMITE
NAQUADAT Code	00PQ020B0003000
Lat Long	45-45-06N 73-28-04W
Period	73-12-02 to 78-12-11
SO_4^{--} mg L^{-1}	$\bar{x}$ = 9.9 s = 3.4 n = 132
Gauge	L'ASSOMPTION AU PONT-ROUTE 50 A JOLIETTE 052219 1340 km^2
Lat Long	46-00-37N 73-25-39W
Period	1969-1979
Data	23.4 cms R = 0.550 m yr^{-1} S = 1.82 g m^{-2} yr^{-1}

Name	L'ASSOMPTION AU PONT-ROUTE 131 A JOLIETTE
NAQUADAT Code	00PQ020B0001000
Lat Long	46-02-17N 73-26-26W
Period	70-05-01 to 73-12-16
SO_4^{--} mg L^{-1}	$\bar{x}$ 8.9 s = 1.9 n = 76
Gauge	L'ASSOMPTION AU PONT-ROUTE 50 A JOLIETTE 052219 1340 km^2
Lat Long	46-00-37N 73-25-39W
Period	57 years
Data	23.3 cms R = 0.548 m yr^{-1} S = 1.62 g m^{-2} yr^{-1}

Name	MASKINONGE AU PONT-ROUTE 138 A MASKINONGE
NAQUADAT Code	00PQ020C0002000
Lat Long	46-13-41N 73-00-55W
Period	70-07-02 to 73-11-13
SO_4^{--} mg L^{-1}	$\bar{x}$ = 7.8 s = 1.6 n = 79
Gauge	MASKINONGE AU BARRAGE DE SAINT DIDACE 052604 836 km^2
Lat Long	46-19-45N 73-16-40W
Period	
Data	Water levels only R = ~0.58 m yr^{-1} S = ~ 1.5 g m^{-2} yr^{-1}

Name	MASKINONGE AU PONT DU RANG RIVIERE SUD OUEST
NAQUADAT Code	00PQ020C0003000
Lat Long	46-10-54N 73-02-03W
Period	73-11-19 to 79-12-16
SO_4^{--} mg L^{-1}	$\bar{x}$ 7.5 s = 4.9 n = 196
Gauge	052600
Lat Long	
Period	
Data	R = ~ 0.56 m yr^{-1} S = 1.4 g m^{-2} yr^{-1}

Name	DU LOUP A ENVIRON 3.2 KM DE L'EMBOUCHURE
NAQUADAT Code	00PQ020C0004000
Lat Long	46-14-35N 72-55-27W
Period	76-10-17 to 79-12-16
SO_4^{--} mg L^{-1}	$\bar{x}$ = 6.8 s = 1.7 n = 97
Gauge	DU LOUP A 0.3 KM EN AVAL DU RUISSEAU CARUFEL 052805
	774 km^2
Lat Long	46-36-02N 73-11-11W
Period	1965-1979
Data	1.31 cms R = 0.533 m yr^{-1} S = 1.21 g m^{-2} yr^{-1}

Name	LA BAYONNE AU PONT-ROUTE A BERTHIER
NAQUADAT Code	00PQ020B0077000
Lat Long	46-05-39N 73-10-23W
Period	73-12-02 to 79-12-16
SO_4^{--} mg L^{-1}	$\bar{x}$ 12.2 s = 4.5 n = 189
Gauge	NO GAUGE
Lat Long	
Period	
Data	R = ~ 0.56 m yr^{-1} S = 2.28 g m^{-2} yr^{-1}

Name	YAMACHICHE AU PONT-ROUTE DESAULNIERS A YAMACHICHE
NAQUADAT Code	00PQ020C0007000
Lat Long	46-17-44N 72-48-15W
Period	73-12-02 to 78-09-10
SO_4^{--} mg L^{-1}	$\bar{x}$ = 8.0 s = 3.0 n = 215
Gauge	NO GAUGE
Lat Long	
Period	
Data	R ~ 0.55 m yr^{-1} S ~ 1.5 g m^{-2} yr^{-1}

Name	DU LOUP A L'USINE DE FILTRATION A SAINT-LEON
NAQUADAT Code	00PQ020C0006000
Lat Long	46-17-47N 72-54-46W
Period	73-11-19 to 76-11-22
SO_4^{--} mg L^{-1}	$\bar{x}$ 6.6 s = 2.3 n = 79
Gauge	DU LOUP A 0.3 KM EN AVAL DU RUISSEAU CARUFEL 052805 774 km^2
Lat Long	46-38-02N 73-11-11W
Period	1965-1979 13 years
Data	13.1 cms R = 0.533 m yr^{-1} S = 1.17 g m^{-2} yr^{-1}

Name	DU LOUP AU PONT DU C.P.R. A LOUISEVILLE
NAQUADAT Code	00PQ020C0005000
Lat Long	46-15-41N 72-56-16W
Period	71-06-17 to 73-11-13
SO_4^{--} mg L^{-1}	$\bar{x}$ = 7.5 s = 1.9 n = 66
Gauge	DU LOUP A 0.3 KM EN AVAL DU RUISSEAU CARUFEL 052805 774 km^2
Lat Long	46-38-02N 73-11-11W
Period	1965-1979 13 years
Data	13.1 cms R = 0.533 m yr^{-1} S = 1.33 g m^{-2} yr^{-1}

Name	L'ACHIGAN AU PONT-ROUTE A 1.0 KM D L'EMBOUCHERE
NAQUADAT Code	00PQ020B0005000
Lat Long	45-50-53N 73-26-53W
Period	76-06-07 to 78-08-22
SO_4^{--} mg L^{-1}	$\bar{x}$ 12.4 s = 2.5 n = 14
Gauge	NO GAUGE
Lat Long	
Period	
Data	R = ~ 0.63 m yr^{-1} S = 2.60 g m^{-2} yr^{-1}

Data for Rivers in Quebec: Region 6

The Kenogami Reservoir has a watershed of 3390 km^2, but the discharge from the reservoir is divided between the Aux Sables and the Chicoutimi Rivers. The combined mean daily discharge for the six months of chemical record was 74.5 cms. For an annual mean daily discharge of 74.5 cms, runoff for the watershed would be 0.692 m yr^{-1}. S = 1.05 g m^{-2} yr^{-1}.

Name	AUX SABLES AU PONT-ROUTE A 1.6 KM EN AVAL DU BARRAGE PIBRAC
NAQUADAT Code	00P002RH0004000
Lat Long	48-22-14N 71-16-59W
Period	79-03-14 to 79-08-29
SO_4^{--} mg L^{-1}	$\bar{x}$ 4.5 s = 0.6 n = 9
Gauge	AUX SABLES A 1.6 KM EN AVAL DU BARRAGE PIBRAC-EST 061021
Lat Long	48-22-16N 71-17-02W
Period	1979-03 to 1979-08

Name	CHICOUTIMI AU BARRAGE PORTAGE-DES-ROCHES A LATERRIERE
NAQUADAT Code	00P002RH0007000
Lat Long	48-13-33N 71-12-45W
Period	79-03-12 to 79-08-29
SO_4^{--} mg L^{-1}	$\bar{x}$ = 4.6 s = 0.7 n = 9
Gauge	CHICOUTIMI A 1.3 KM EN AVAL DU BARRAGE PORTAGE DES ROCHES 061004
Lat Long	48-18-16N 71-11-40W
Period	1979-03 to 1979-08

Name	METABETCHOUANE AU PONT-ROUTE 169 A DESBIENS
NAQUADAT Code	00PQ02RG0001000
Lat Long	48-25-05N 71-57-56W
Period	74-05-27 to 79-12-16
SO_4^{--} mg L^{-1}	$\bar{x}$ 4.2 s = 1.3 n = 138
Gauge	METABETCHOUANE A 1.8 KM EN AMONT DE LA CENTRALE S.R.P.C.
	061502 2280 km^2
Lat Long	48-22-30N 71-59-37W
Period	1978-10 to 1979-09
Data	48.1 cms R = 0.665 m yr^{-1} S = 0.930 g m^{-2} yr^{-1}

Name	PETIT SAGUENAY AU PONT-ROUTE A PETIT SAGUENAY
NAQUADAT Code	00PQ02RH0001000
Lat Long	48-12-33N 70-04-09W
Period	74-03-20 to 78-09-10
SO_4^{--} mg L^{-1}	$\bar{x}$ 3.6 s = 0.9 n = 179
Gauge	PETIT SAGUENAY A 3.1 KM EN AMONT DU PONT-ROUTE 170
	060101 736 km^2
Lat Long	48-11-10N 70-03-02W
Period	1974-1979 4 years
Data	17.8 cms R = 0.762 m yr^{-1} S = 0.914 g m^{-2} yr^{-1}

Name	CHAMOUCHOUANE AU PONT-ROUTE DE SAINT-FELICIEN
NAQUADAT Code	00PQ02RF0001000
Lat Long	48-39-29N 72-26-47W
Period	70-01-01 to 79-12-16
SO_4^{--} mg L^{-1}	$\bar{x}$ 3.8 s = 2.7 n = 368
Gauge	CHAMOUCHOUANE A LA TETE DE LA CHUTE AUX SAUMONS 061901
	15 300 km^2
kat Long	48-41-11N 7-29-12W
Period	17 years
Data	307 cms R = 0.632 m yr^{-1} S = 0.569 g m^{-2} yr^{-1}

Name	OUIATCHOUANE AU PONT-ROUTE 169 A VALHUBERT
NAQUADAT Code	00PQ02RG0002000
Lat Long	48-26-48N 72-09-38W
Period	70-06-09 to 79-12-16
SO_4^{--} mg L^{-1}	$\bar{x}$ 3.9 s = 1.2 n = 326
Gauge	OUIATCHOUANE A 0.3 KM EN AVAL DU BARRAGE DU LAC DES
	COMMISSAIRES 061602 562 km^2
Lat Long	48-12-22N 72-14-20W
Period	1966-1979 15 years
Data	12.0 cms R = 0.673 m yr^{-1} S = 0.874 g m^{-2} yr^{-1}

Name	SAINTE MARGUERITE A 0.8 KM EN AVAL DE LA SAINTE-MARGUERITE NORDE-EST
NAQUADAT Code	00PQ02RH0024000
Lat Long	48-16-18N 69-55-59W
Period	77-01-23 to 78-10-08
SO_4^{--} mg L^{-1}	$\bar{x}$ 3.8 s = 0.9 n = 72
Gauge	NO GAUGE
Lat Long	
Period	
Data	R ~ 0.87 m yr^{-1} S ~ 1.10 g m^{-2} yr^{-1}

Name	MISTASSINI AU PONT-ROUTE 169 A DOLBEAU
NAQUADAT Code	00PQ02RD0002000
Lat Long	48-52-07N 72-13-40W
Period	70-01-11 to 79-12-16
SO_4^{--} mg L^{-1}	$\bar{x}$ 3.9 s = 1.2 n = 323
Gauge	MISTASSINI A 3.4 KM EN AMONT DE LA MISTASSIBI 062102 9870 km^2
Lat Long	48-53-16N 72-15-48W
Period	17 years
Data	196 cms R = 0.626 S = 0.813 g m^{-2} yr^{-1}

Name	OUASIEMSKA AU PONT-ROUTE DE GERARD-VILLE
NAQUADAT Code	00PQ02RE0001000
Lat Long	49-01-32N 72-34-09W
Period	70-06-09 to 74-05-28
SO_4^{--} mg L^{-1}	$\bar{x}$ 4.1 s = 1.5 n = 105
Gauge	NO GAUGE
Lat Long	
Period	
Data	R ~ 0.63 m yr^{-1} S ~ 0.86 g m^{-2} yr^{-1}

Name	PERIBONCA AU PONT-ROUTE 169 A SAINTE-MONIQUE
NAQUADAT Code	00PQ02RC0002000
Lat Long	48-44-35N 71-51-24W
Period	70-01-18 to 79-12-17
SO_4^{--} mg L^{-1}	$\bar{x}$ 3.3 s = 3.2 n = 302
Gauge	PERIBONCA-CENTRALE DE CHUTE-A-LA-SAVANNE 062203 26 900 km^2
Lat Long	48-45-15N 71-50-24W
Period	1954-1979 25 years
Data	617 cms R = 0.723 S = 0.771 g m^{-2} yr^{-1}

Name	SAGUENAY AU PONT-ROUTE A CHICOUTIMI
NAQUADAT Code	00PQ02RH0028000
Lat Long	48-26-02N 71-04-01W
Period	70-01-01 to 79-12-16
SO_4^{--} mg L^{-1}	$\bar{x}$ 4.2 s = 1.1 n = 395
Gauge	SAUGENAY - CENTRALE D'ISLE-MALIGNE 062901 73 000 km^2
Lat Long	48-34-38N 71-30-07W
Period	1913-1979 66 years
Data	1460 cms R = 0.630 m yr^{-1} S = 0.88 g m^{-2} yr^{-1}

Name	MITASSINI AU PONT-ROUTE 169
NAQUADAT Code	00PQ02RD0003000
Lat Long	48-53-57N 72-12-42W
Period	70-06-08 to 79-12-17
SO_4^{--} mg L^{-1}	$\bar{x}$ 3.6 s = 1.5 n = 313
Gauge	NO GAUGE
Lat Long	
Period	
Data	R ~ 0.63 m yr^{-1} S ~ 0.75 g m^{-2} yr^{-1}

Data for Rivers in Quebec: Region 7

Name	DES ESCOUMAINS AU BARRAGE PRES DU PONT-ROUTE 138 A ESCOUMAINS
NAQUADAT Code	00PQ02SC0003000
Lat Long	48-20-49N 69-24-29W
Period	73-11-06 to 79-10-29
SO_4^{--} mg L^{-1}	$\bar{x}$ 2.8 s = 0.6 n = 164
Gauge	DES ESCOUMAINS A 1.9 MI EN AMONT DU PONT-ROUTE 15 A ESCOUMAINS 070201 739 km^2
Lat Long	
Period	15 years (to 1971)
Data	15.3 cms R = 0.608 m yr^{-1} S = 0.57 g m^{-2} yr^{-1}

Name	BETSIAMITES AU PONT-ROUTE 138 DE RIVIERE-BERSIMIS
NAQUADAT Code	00PQ02SB0001000
Lat Long	48-56-26N 64-44-30W
Period	73-11-06 to 79-12-16
SO_4^{--} mg L^{-1}	$\bar{x}$ 3.8 s = 1.0 n = 13
Gauge	BETSIAMITES - RESERVOIR PIPMUACAN 0707 13 400 km^2
Lat Long	49-21-15N 69-47-15W
Period	1956-1978 (17 years)
Data	232 cms R = 0.545 m yr^{-1} S = 0.69 g m^{-2} yr^{-1}

Name	MANICOUAGAN AU PONT-ROUTE 138 DE HAUTERIVE
NAQUADAT Code	00PQ02TC0001000
Lat Long	49-11-35N 68-19-36W
Period	73-11-06 to 79-12-16
SO_4^{--} mg L^{-1}	$\bar{x}$ = 3.0 s = 0.3 n = 13
Gauge	MANICOUAGAN - CENTRALE NO. 2 071104 45 600 km^2
Lat Long	49-20-06N 68-20-51W
Period	1964-1978 13 years
Data	737 cms R = 0.509 S = 0.509 g m^{-2} yr^{-1}

Name	MATAMEK AU PONT-ROUTE 138 A MATAMEK
NAQUADAT Code	00PQ02UC0005000
Lat Long	50-17-12N 65-58-05W
Period	70-08-23 to 78-08-12
SO_4^{--} mg L^{-1}	$\bar{x}$ 3.71 s = 1.7 n = 133
Gauge	MATAMEK A LA SORTIE DU LAC MATAMEK 072502 458 km^2
Lat Long	50-20-30N 65-56-19W
Period	1974-1979 (4 years)
Data	13.3 cms R = 0.915 m yr^{-1} S = 1.13 g m^{-2} yr^{-1}

Name	ROMAINE AU PONT-ROUTE 138 A HAVRE-SAINT-PIERRE
NAQUADAT Code	00PQ02VC0003000
Lat Long	50-18-06N 63-47-53W
Period	47-07-18 to 79-12-09
SO_4^{--} mg L^{-1}	$\bar{x}$ = 2.43 s = 0.8 n = 94
Gauge	ROMAINE AU PONT DE LA Q.I.T. A 14.8 KM DE L'EMBOUCHURE 073801 13 000 km^2
Lat Long	50-18-28N 63-37-21W
Period	1956-1979 22 years
Data	307 cms R = 0.744 S = 0.603 g m^{-2} yr^{-1}

Name	AUX ROCHERS AU PONT-ROUTE 138 A PORT-CARTIER
NAQUADAT Code	00PQ02UA0005000
Lat Long	50-01-54N 66-52-36W
Period	70-01-13 to 79-12-16
SO_4^{--} mg L^{-1}	$\bar{x}$ 3.33 s = 0.8 n = 172
Gauge	NO GAUGE
Lat Long	
Period	
Data	R ~ = 0.85 m yr^{-1} S ~ 0.9 g m^{-2} yr^{-1}

Name	MOISIE AU PONT-ROUTE 138 A MOISIE
NAQUADAT Code	00PQ02UC0003000
Lat Long	50-16-10N 66-02-04W
Period	74-08-33 to 79-12-17
SO_4^{--} mg L^{-1}	$\bar{x}$ = 2.26 s = 145 n = 28
Gauge	MOISIE A 5.1 KM EN AMONT DU PONT DU Q.N.S.L.R.
	072301 19 000 km^2
Lat Long	50-21-01N 66-11-25W
Period	1965-1979
Data	467 cms R = 0.774 S = 0.583 g m^{-2} yr^{-1}

9170