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STREAMFLOW TOOLKIT

VERSION 2.0

User's Instructions and Sample Outputs

SURVEYS AND INFORMATION SYSTEMS BRANCH
RELEVÉS ET SYSTÈMES D'INFORMATION

ECOSYSTEM SCIENCES AND EVALUATION DIRECTORATE
DIRECTION GÉNÉRALE DES SCIENCES ET DE L'ÉVALUATION DES ÉCOSYSTÈMES

STREAMFLOW TOOLKIT

Version 2.0

USER'S INSTRUCTIONS
and
SAMPLE OUTPUTS

by

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STREAMFLOW TOOLKIT 2.0: USER'S INSTRUCTIONS

The Streamflow Toolkit runs on an IBM PC or compatible in the MS-DOS operating environment using MS-DOS software version 3.3 or higher. It requires a math coprocessor and at least 500 KB of free base memory.

Before installing the package check and ensure that your CONFIG.SYS file contains a line similar to "DEVICE=C:\DOS\ANSI.SYS". If not, edit your CONFIG.SYS file and reboot.

INSTALLATION INSTRUCTIONS:

1 . The installation procedure requires that you know the following information:

   a. make and model of your graphics card
   b. make and model of the printer to be used
   c. which printer port the printer is connected to

2. Insert the "Streamflow Toolkit 2.0 Distribution Disk" in any floppy-disk drive.

3. Make that drive the current drive. For example, if you inserted the “Distribution Disk” in drive A, type A: and press ENTER.

4. Type INSTALL and press ENTER.

INSTALL will prompt you for answers to questions about the options and file locations you prefer. After installing the programs it will then automatically run the SETUP program to configure your initial printers and monitor. Follow the instructions given by SETUP.

NOTE: When you first install the Streamflow Toolkit, you may wish to choose a low printer density (your hard copy graphic outputs will come out faster). If you later require higher quality print, SETUP can be run from the Streamflow Toolkit Main Menu to modify the print density.

TO RUN STREAMFLOW TOOLKIT AFTER INSTALLATION:

1. Type TOOL2 and press ENTER.

2. Press ENTER to clear the “SAIL BOAT” and to get on the Main Menu.

PREPARING DATA FILES FOR THE STREAMFLOW TOOLKIT 2.0:

The Streamflow Toolkit makes direct use of data exported from the HYDAT CD-ROM versions 3.0 and 4.0. The Toolkit gives users the ability to obtain various graphical presentations and statistical summaries of streamflow and water level conditions at any gauging sites across Canada. It accepts data exported from HYDAT CD-ROM in both card image and binary formats.

The data files naming rules for the Streamflow Toolkit are quite simple. It requires only that the files for various data types be named with the specific file extensions as designated in the following table. File names may be any names that are acceptable to DOS. However, do not use names such as "CON", "LPT1", "COM1" etc. which have special meaning in DOS.

Data Type	HYDAT CD-ROM Window	Export Format	File Extension	Example
Daily Discharge	Daily	Card Image	.DAY	QDAILY.DAY
Daily Water Level	Daily	Card Image	.DAY	LDAILY.DAY
Daily Discharge	Daily	Binary	.BIN	QDAILY.BIN
Daily Water Level	Daily	Binary	.BIN	LDAILY.BIN
Monthly Discharge	Monthly	Card Image	.MON	QMONTH.MON
Monthly Water Level	Monthly	Card Image	.MON	LMONTH.MON
Annual Max. & Min. Daily Q or W.L.	Extreme	Card Image	.EXT	ANNUAL.EXT
Annual Max. Instantaneous Q or W.L.	Extreme	Card Image	.INS	MAX.INS
Station Header Info.	Header	Card Image	.HED	PROJECT1.HED

Each file may contain data for more than one station. Actually, it is more convenient and effective that data for all stations with same data type and format be put under a single file. It is also recommended that station header information for all stations under the same project be put under one single station header file. The benefit is that you don't have to remember which header file contains what stations.

The Streamflow Toolkit Distribution Disk includes a set of sample data files. We suggest that you create a sub directory under your toolkit directory (e.g. "C:\TOOL2\TESTDAT") and copy all these sample data files to the "TESTDAT" sub directory. Try running the TOOLKIT with the sample data files first (sample outputs of each menu item are included for your reference). You may then create your own data files by running the HYDAT CD-ROM and exporting the desired data directly to the same sub directory (i.e. "C:\TOOL2\TESTDAT") or to any other directories by giving the proper path name.

HELP SCREEN FOR SCREEN GRAPH MANIPULATION:

When in the graphical mode (i.e. graph is on your screen), you can obtain a list of available commands by pressing < F1 > key. The graph is then replaced with the following table:

STREAMFLOW TOOLKIT 2.0 – HELP SCREEN

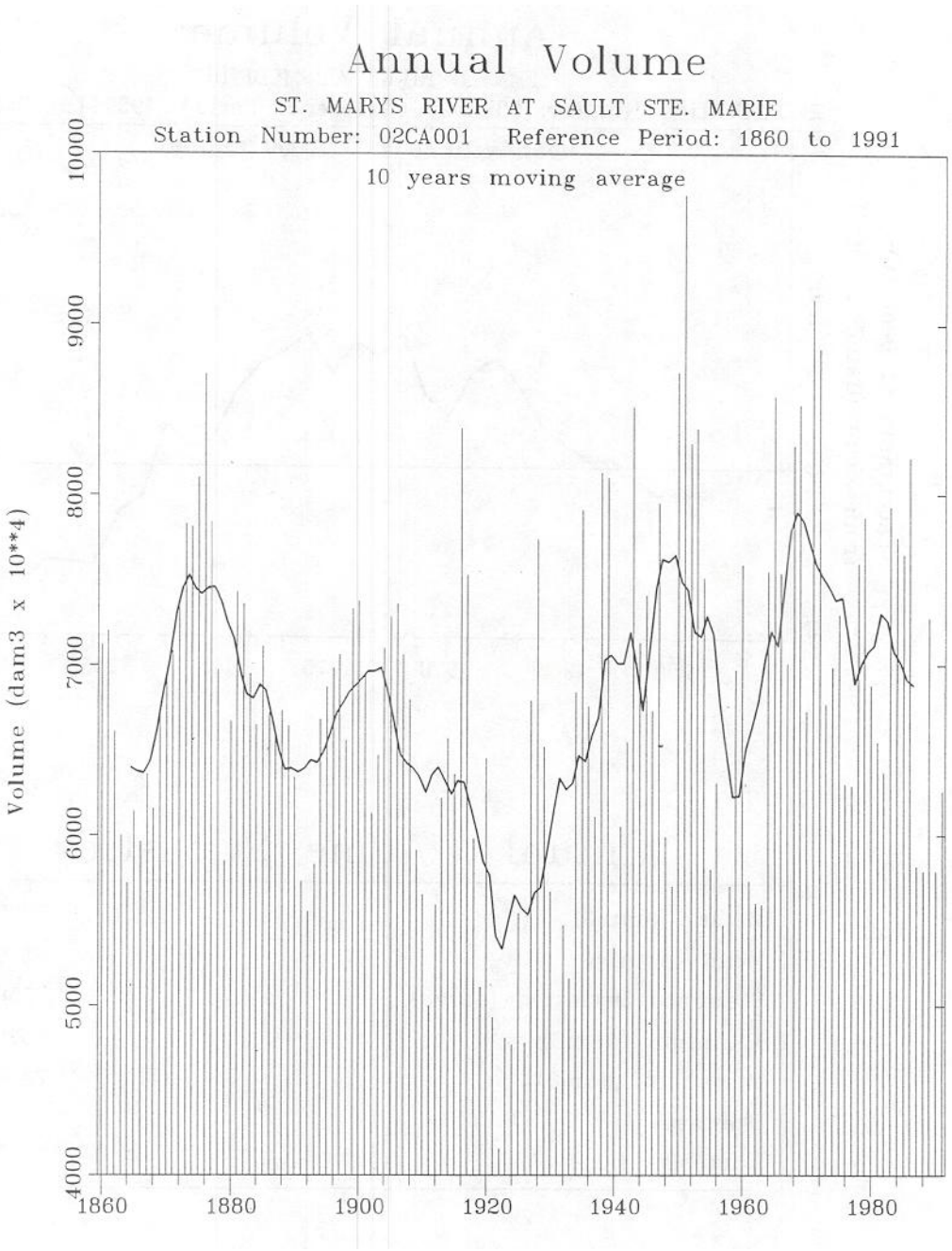
	F1	-	HELP
<Ctrl>	P	-	Print hard copy of graph
<Ctrl>	D	-	Print Screen - draft quality
<Ctrl>	Z	-	Change scale/Zoom
<Ctrl>	S	-	Skip 10 years
	+	-	Move one interval up
	-	-	Move one interval down
<Esc>		-	Return to Menu
<Ret>		-	Continue

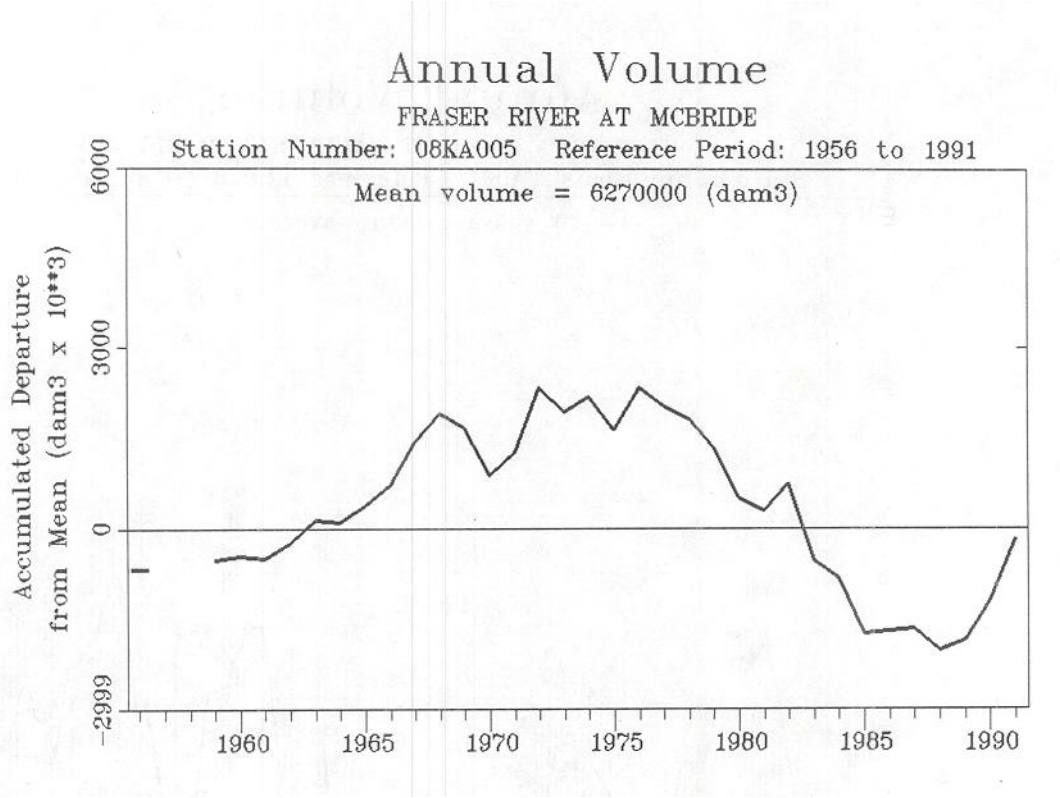
STREAMFLOW TOOLKIT 2.0 - MAIN MENU

ANNUAL	Flow/Level with Moving Average
	Flow/Level - Accumulated Departure from Mean
	Max Daily Flow/Level and Statistics
	Max Instantaneous Flow/Level and Statistics
	Extreme by Season
	Double-Mass Curves
MONTHLY	Flow/Level and Statistics
	Flow/Level vs Min, Max, Mean of Reference Period
	Flow/Level Distribution
	Percent Departure from Mean
	Accumulated Runoff
	Flow/Level Duration Curve
DAILY	Flow/Level Duration Curve
	Hygrograph of Selected Years
	Concurrent Hydrograpbs (max 4 stations)
	Flow/Level Distribution
MODIFY	Set-up File

STREAMFLOW TOOLKIT 2.0

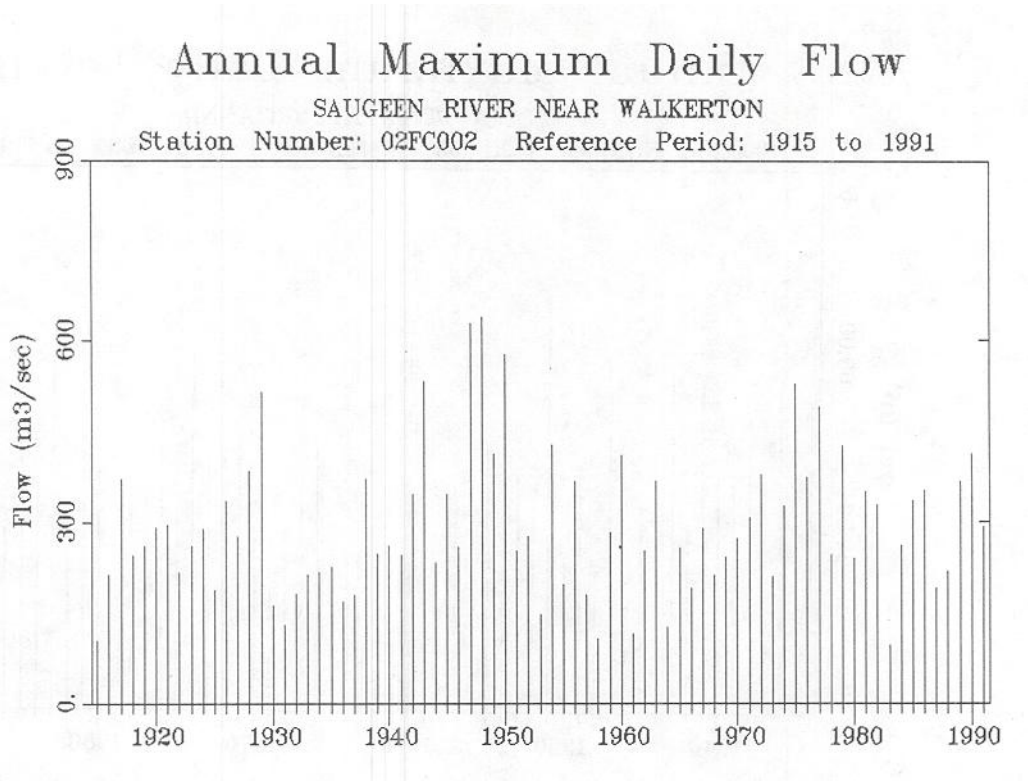
Sample Outputs
Using
Sample Data Files
(included in the Distribution Disk)


Annual Volume
ST. MARYS RIVER AT SAULT STE. MARIE
Station Number: 02CA001 Reference Period: 1860 to 1991
10 years moving average
Volume (dam3 x 10**4)
10000
9000
8000
7000
6000
5000
4000
1860
1880
1900
1920
1940
1960
1980



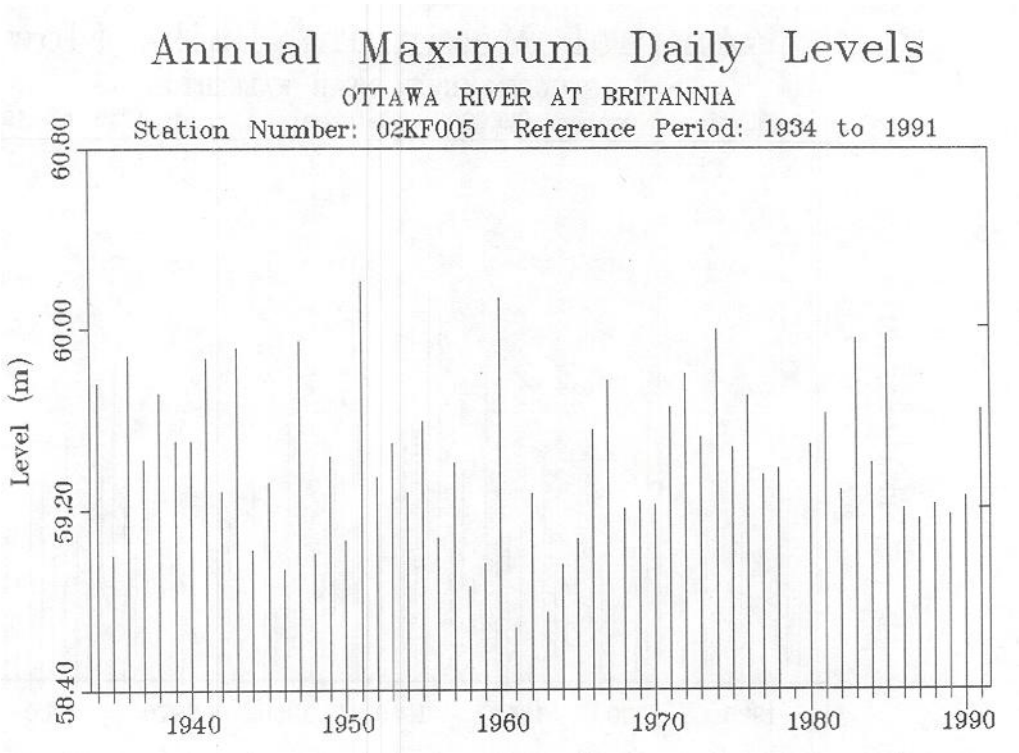
Annual Volume Statistics

Median (dam3)	6320000
Mean (dam3)	6270000
Standard Deviation (dam3)	556000
Minimum (dam3)	4970000
Maximum (dam3)	7340000
Skewness	0.
Kurtosis	3.11



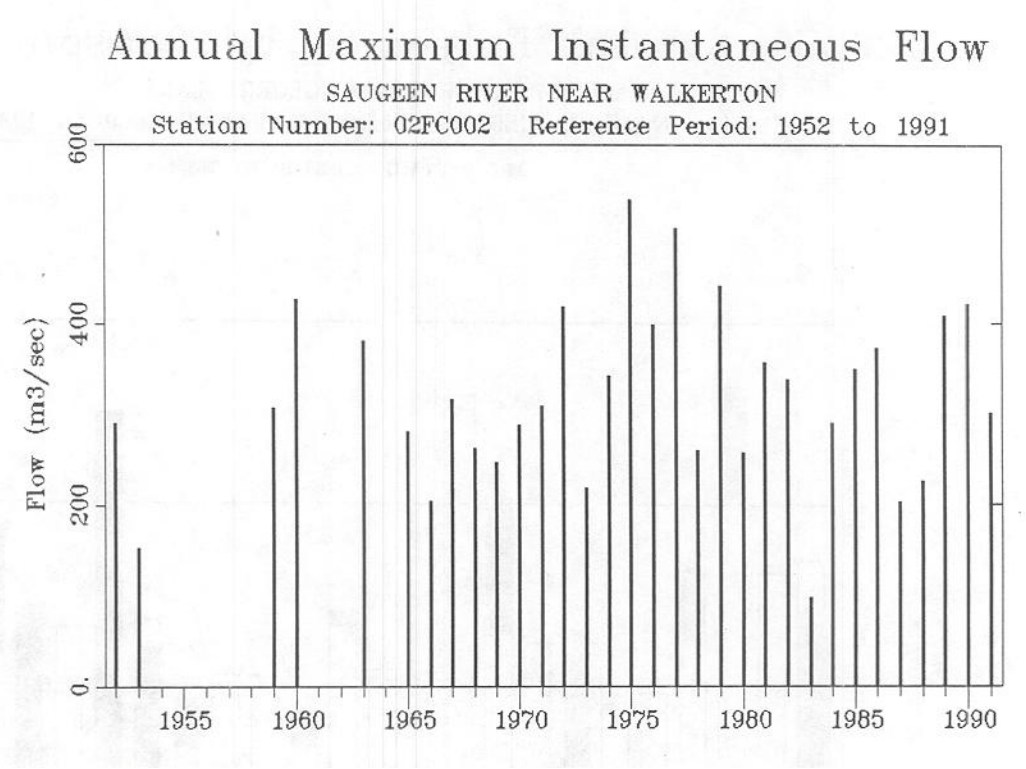
Annual Maximum Daily Flow Statistics

Median (m^3/sec)	262
Mean (m^3/sec)	293
Standard Deviation (m^3/sec)	118
Minimum (m^3/sec)	96.5
Maximum (m^3/sec)	640
Skewness	.883
Kurtosis	3.97



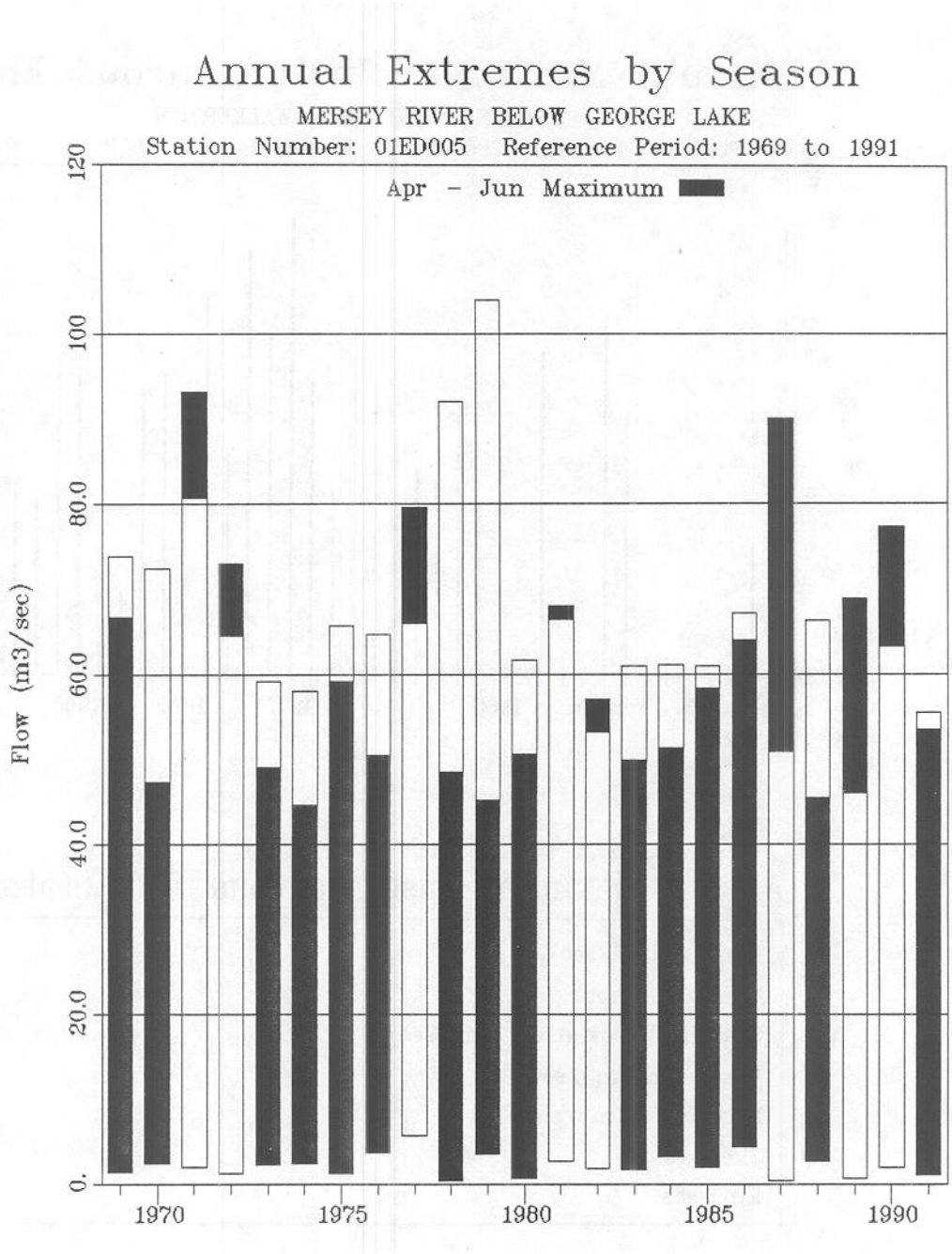
Annual Maximum Daily Levels Statistics

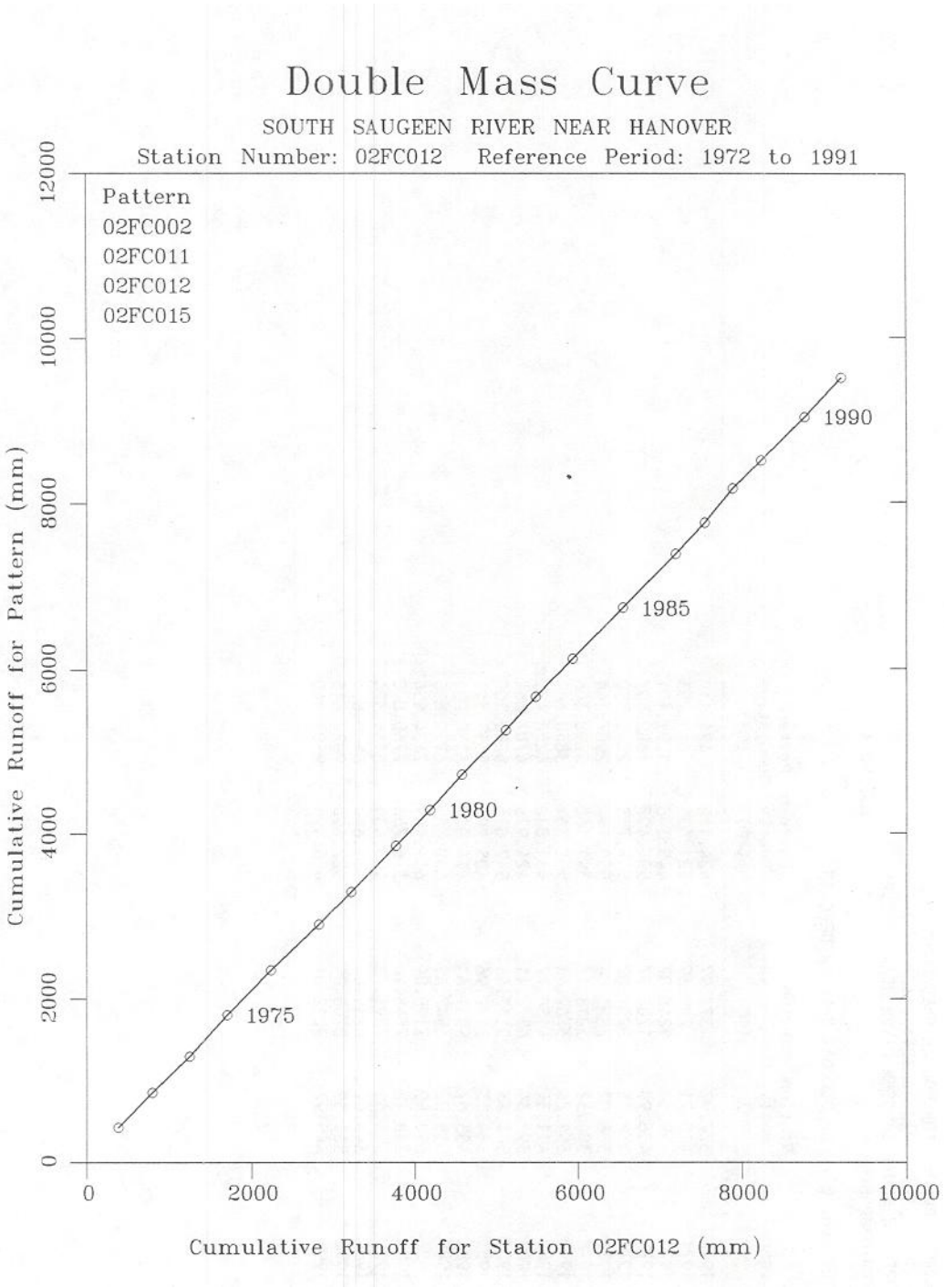
Median (m)	59.400
Mean (m)	59.418
Standard Deviation (m)	.355
Minimum (m)	58.677
Maximum (m)	60.207
Skewness	.183
Kurtosis	2.66



Annual Maximum Instantaneous Flow Statistics

Median (m^3/sec)	310
Mean (m^3/sec)	320
Standard Deviation (m^3/sec)	97.9
Minimum (m^3/sec)	97.8
Maximum (m^3/sec)	536
Skewness	.076
Kurtosis	3.41

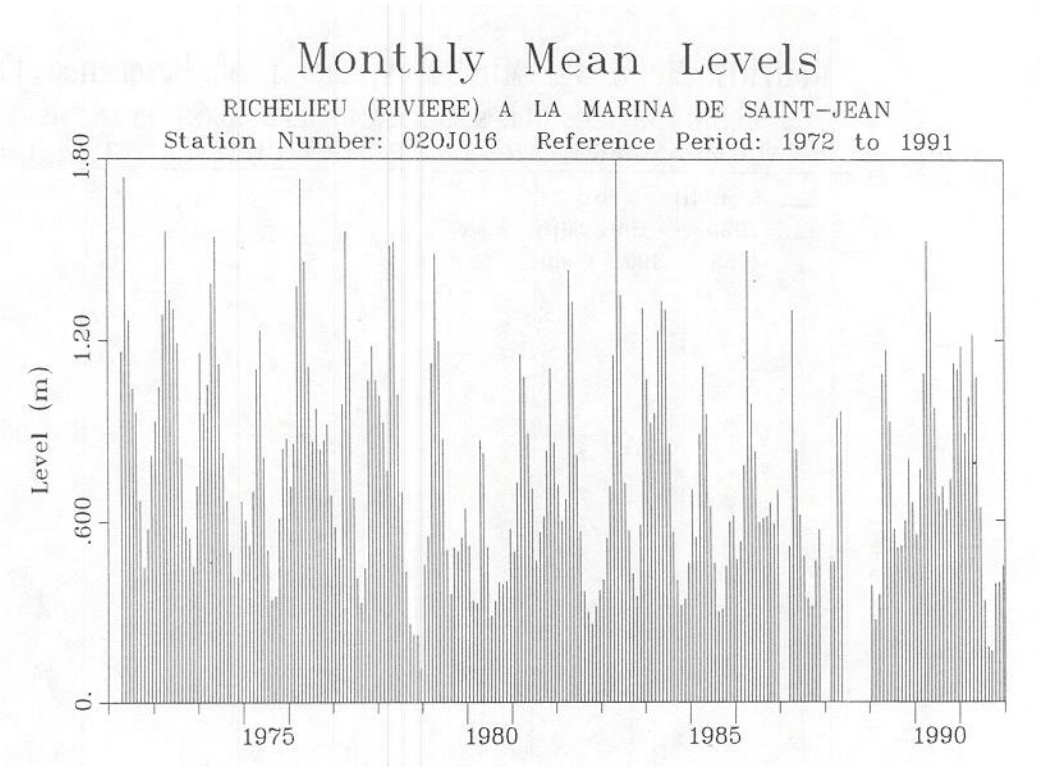

Annual Extremes by Season
MERSEY RIVER BELOW GEORGE LAKE
Station Number: 01ED005 Reference Period: 1969 to 1991
Apr - Jun Maximum
Flow (m3/sec)
120
100
80.0
60.0
40.0
20.0
0.
1970
1975
1980
1985
1990


Double Mass Curve
SOUTH SAUGEEN RIVER NEAR HANOVER
Station Number: 02FC012 Reference Period: 1972 to 1991
Pattern
02FC002
02FC011
02FC012
02FC015
1975
1980
1985
1990
Cumulative Runoff for Pattern (mm)
Cumulative Runoff for Station 02FC012 (mm)
0
2000
4000
6000
8000
10000
12000

ANNUAL RUNOFF FOR DOUBLE MASS CURVE (mm)
from 1972 to 1991 (Jan-Dec)
02FC012 SOUTH SAUGEEN RIVER NEAR HANOVER
Drainage Area = 635.00 sq. km

Pattern: 02FC002 02FC011 02FC012 02FC015

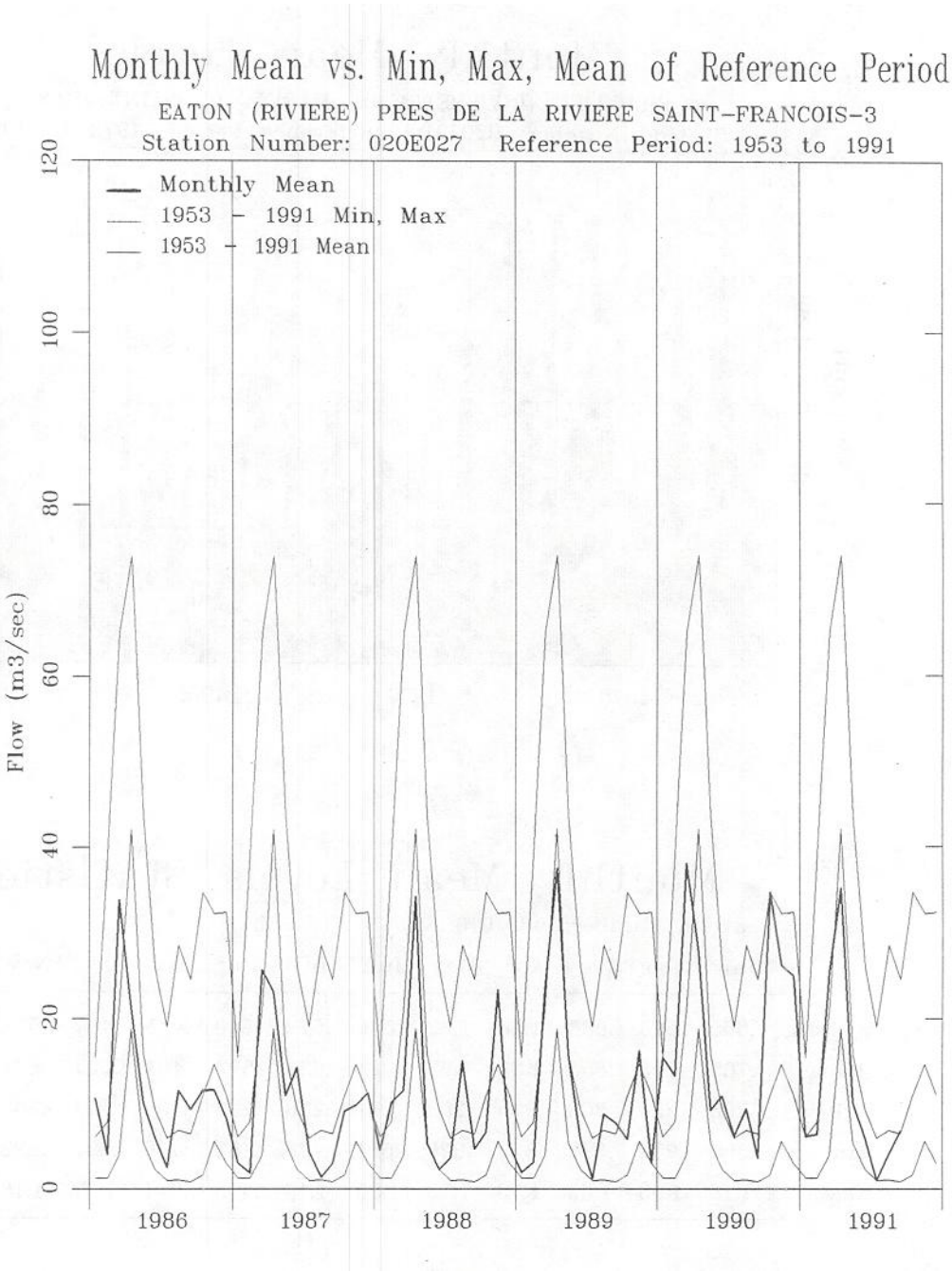
Year	Station Yearly (mm)	Station Cumulative (mm)	Pattern Yearly (mm)	Pattern Cumulative (mm)
1972	377.97	377.97	424.118	424.118
1973	410.71	788.69	421.635	845.753
1974	459.38	1248.07	445.348	1291.101
1975	456.90	1704.97	509.497	1800.597
1976	532.85	2237.82	547.753	2348.350
1977	586.02	2823.84	558.794	2907.144
1978	394.32	3218.17	391.162	3298.306
1979	551.26	3769.43	552.361	3850.667
1980	411.34	4180.77	431.822	4282.489
1981	391.34	4572.11	424.975	4707.464
1982	541.33	5113.44	542.636	5250.100
1983	364.53	5477.96	405.294	5655.394
1984	453.67	5931.63	474.608	6130.001
1985	615.82	6547.45	609.685	6739.686
1986	650.59	7198.04	644.469	7384.154
1987	350.12	7548.16	376.736	7760.890
1988	343.61	7891.78	403.434	8164.324
1989	343.67	8235.44	335.680	8500.004
1990	531.39	8766.84	527.640	9027.645
1991	445.97	9212.81	475.495	9503.140

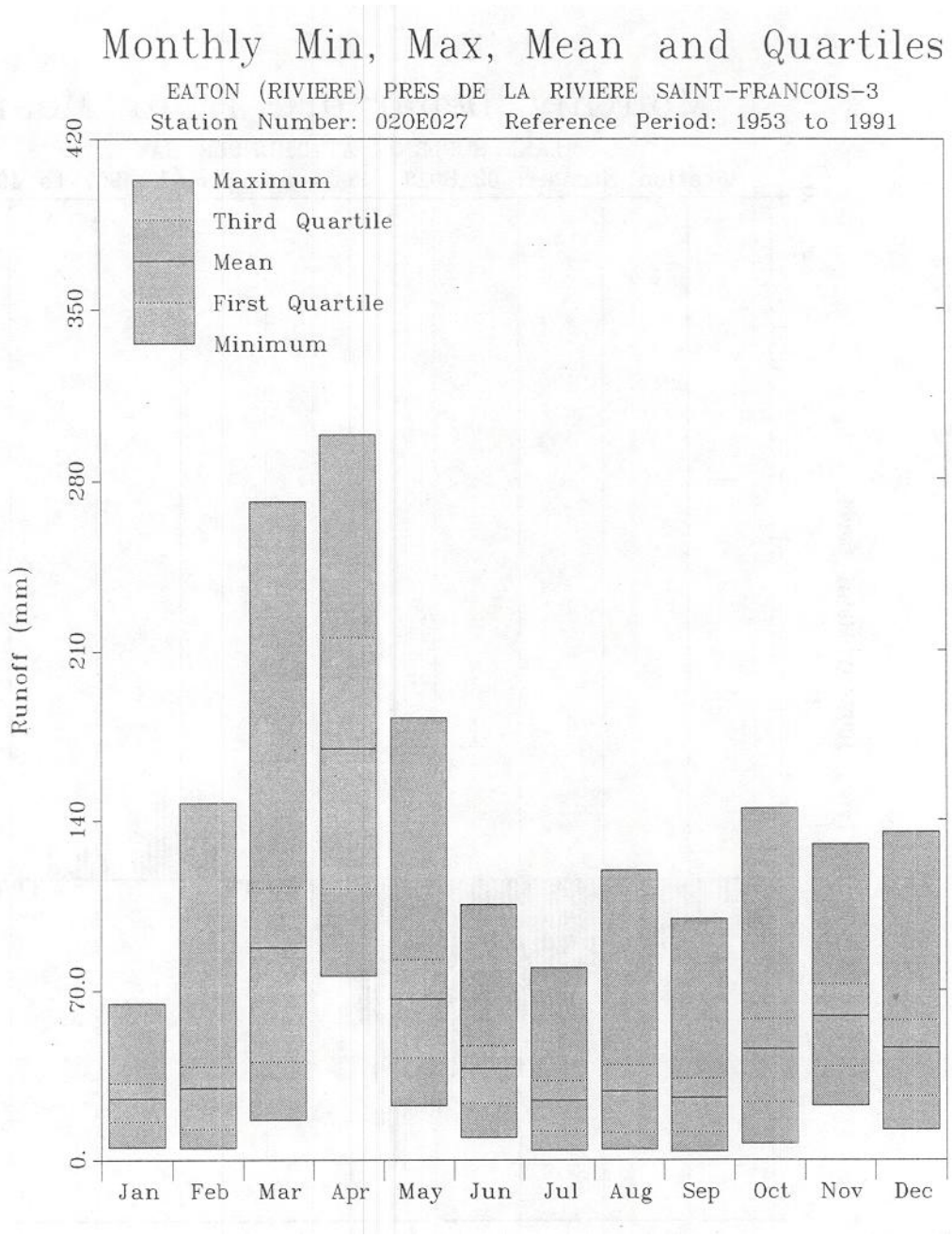


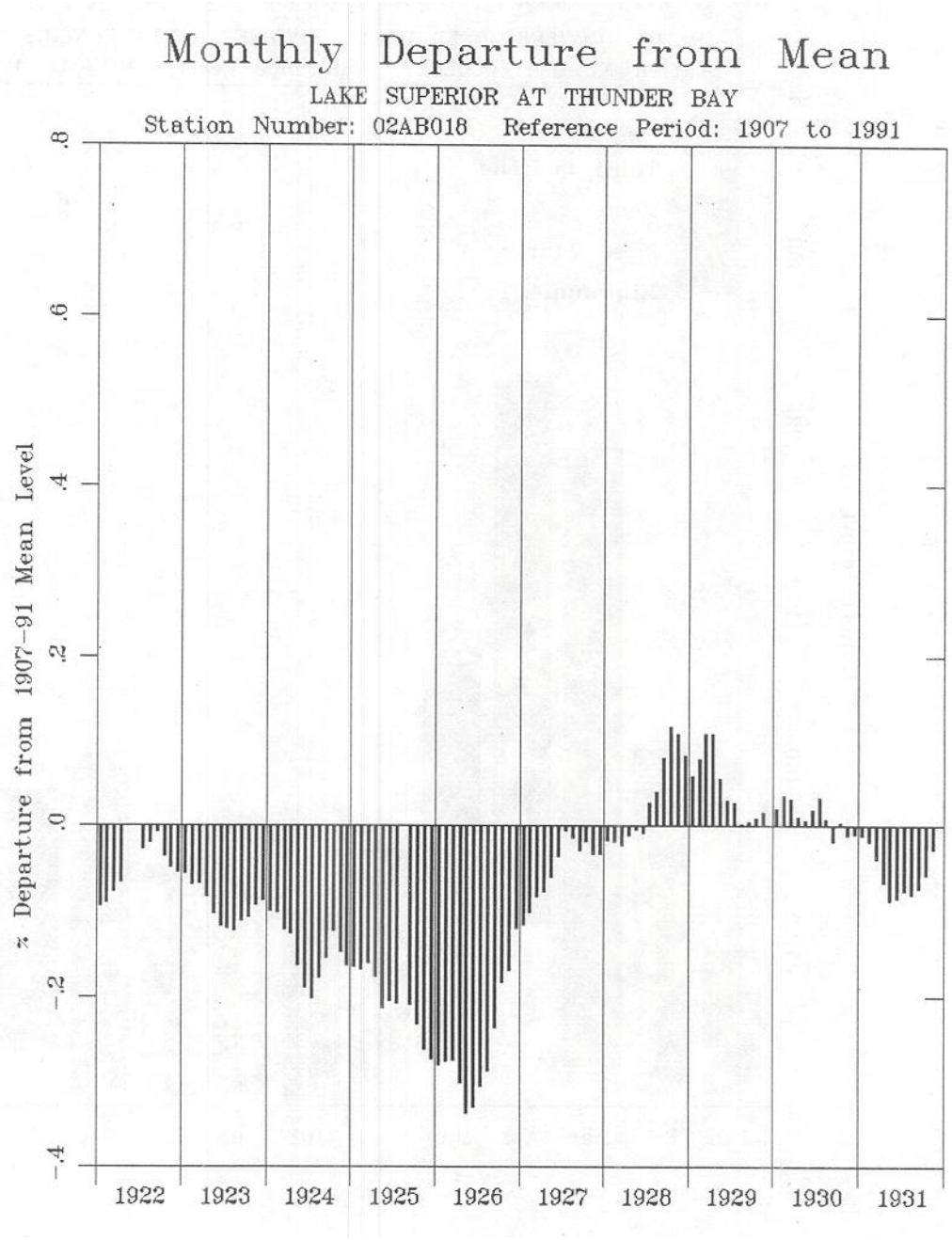
Month1y Mean Levels Statistics

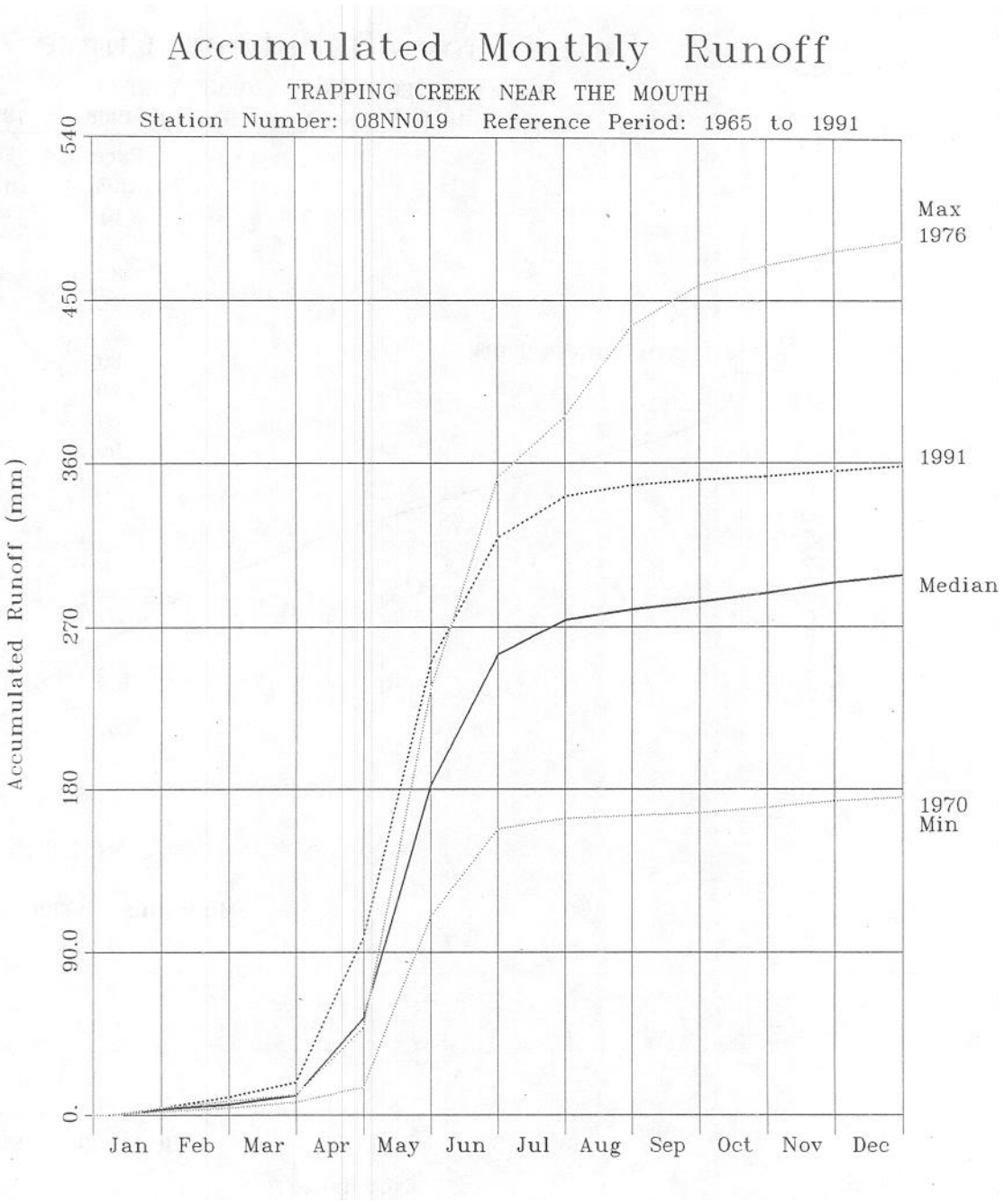
Station -Number: 02OJ016 (m)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Median	.605	.576	.888	1.26	1.22	.876	.572	.510	.445	.467	.577	.677
Mean	.705	.665	.855	1.30	1.23	.923	.636	.523	.467	.534	.631	.706
St. Dev	.268	.230	.303	.235	.282	.261	.238	.226	.168	.221	.288	.281
Min	.385	.272	.327	.870	.828	.515	.286	.182	.168	.224	.222	.113
Max	1.18	1.05	1.38	1.73	1.79	1.35	1.19	.975	.841	1.07	1.18	1.30


Monthly Mean vs. Min, Max, Mean of Reference Period
EATON (RIVIERE) PRES DE LA RIVIERE SAINT-FRANCOIS-3
Station Number: 020E027 Reference Period: 1953 to 1991
Monthly Mean
1953 - 1991 Min, Max
1953 - 1991 Mean
Flow (m3/sec)
0
20
40
60
80
100
120
1986
1987
1988
1989
1990
1991


Monthly Min, Max, Mean and Quartiles
EATON (RIVIERE) PRES DE LA RIVIERE SAINT-FRANCOIS-3
Station Number: 020E027 Reference Period: 1953 to 1991
Maximum
Third Quartile
Mean
First Quartile
Minimum
Runoff (mm)
420
350
280
210
140
70.0
0.
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec

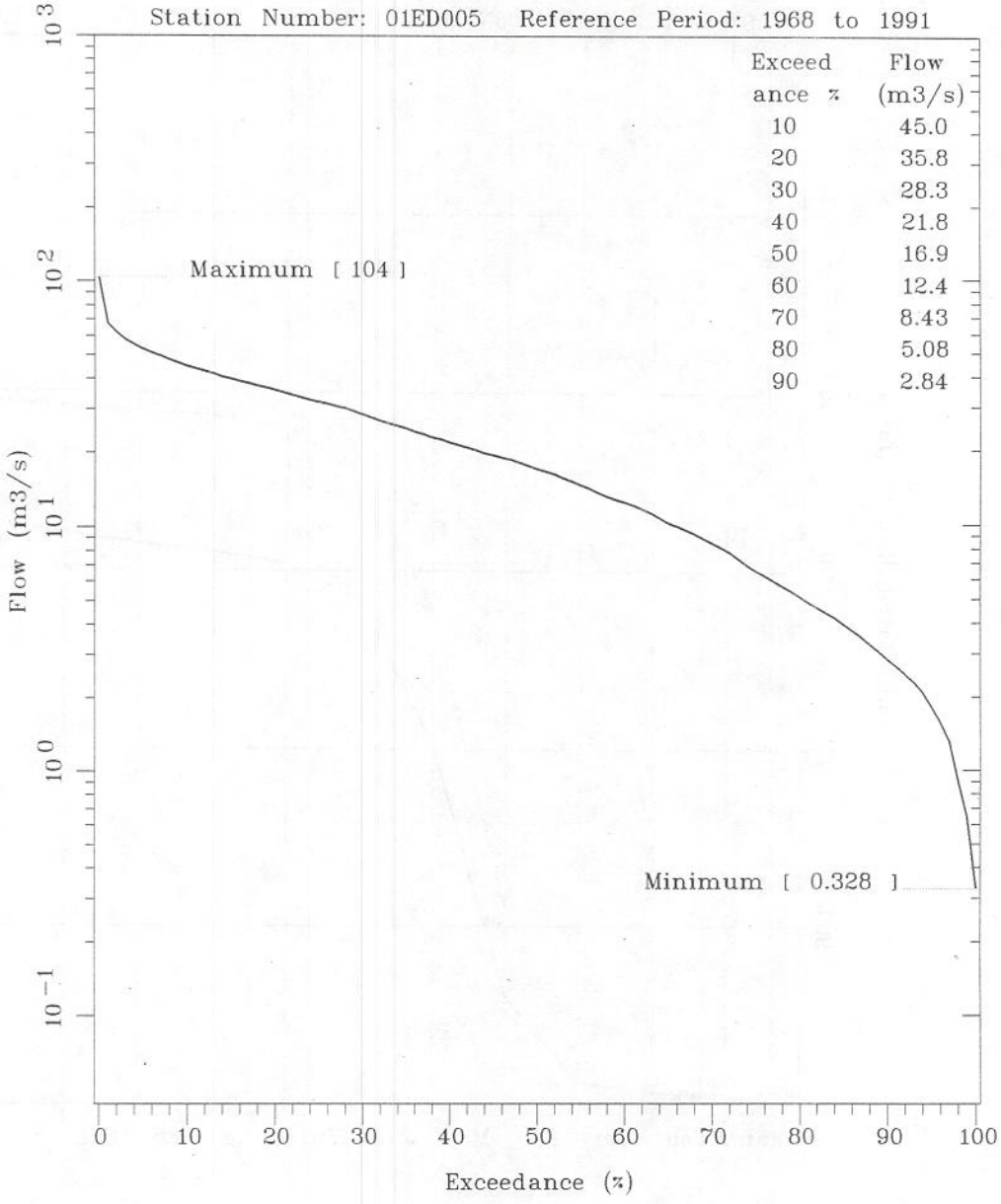

Monthly Departure from Mean
LAKE SUPERIOR AT THUNDER BAY
Station Number: 02AB018 Reference Period: 1907 to 1991
m Departure from 1907-91 Mean Level
.8
.6
.4
.2
.0
-.2
-.4
1922
1923
1924
1925
1926
1927
1928
1929
1930
1931


Accumulated Monthly Runoff
TRAPPING CREEK NEAR THE MOUTH
Station Number: 08NN019 Reference Period: 1965 to 1991
Accumulated Runoff (mm)
540
450
360
270
180
90.0
0.
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Max
1976
1991
Median
1970
Min

Daily Flow Duration Curve

MERSEY RIVER BELOW GEORGE LAKE

Station Number: 01ED005 Reference Period: 1968 to 1991



ENVIRONMENT CANADA MERSEY RIVER BELOW GEORGE LAKE STATION N0. 01ED005
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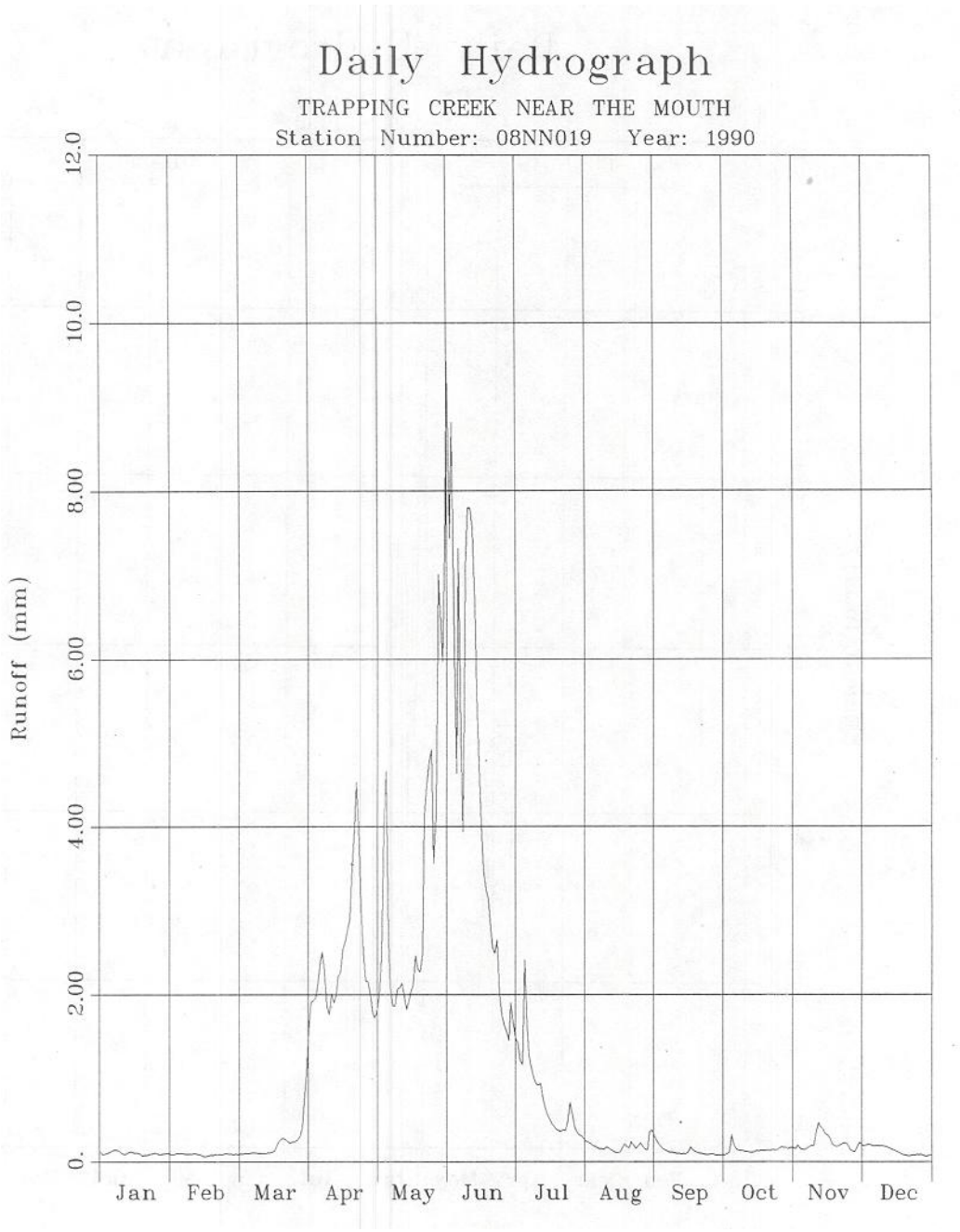
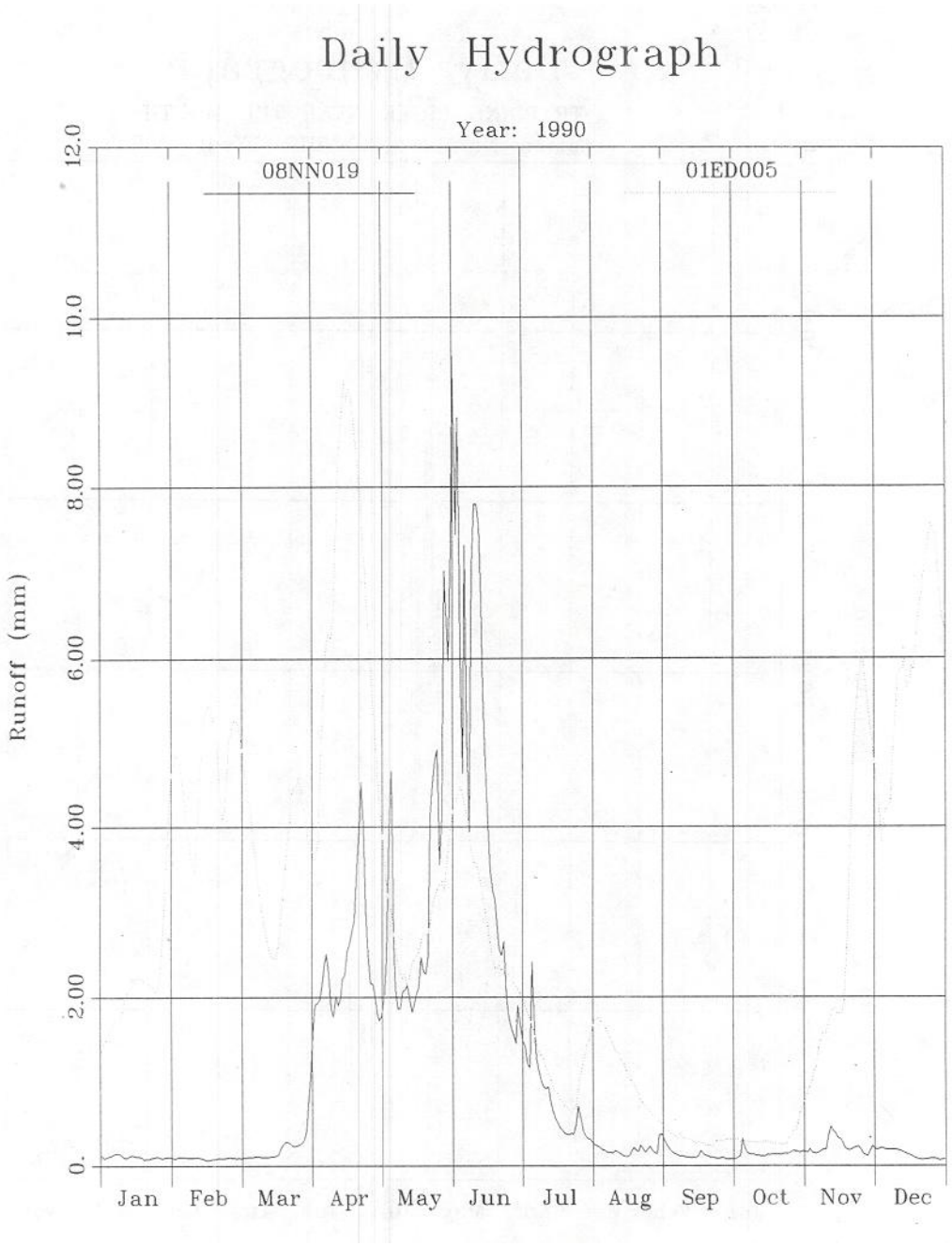
SURVEYS AND INFORMATION SYSTEMS BRANCH

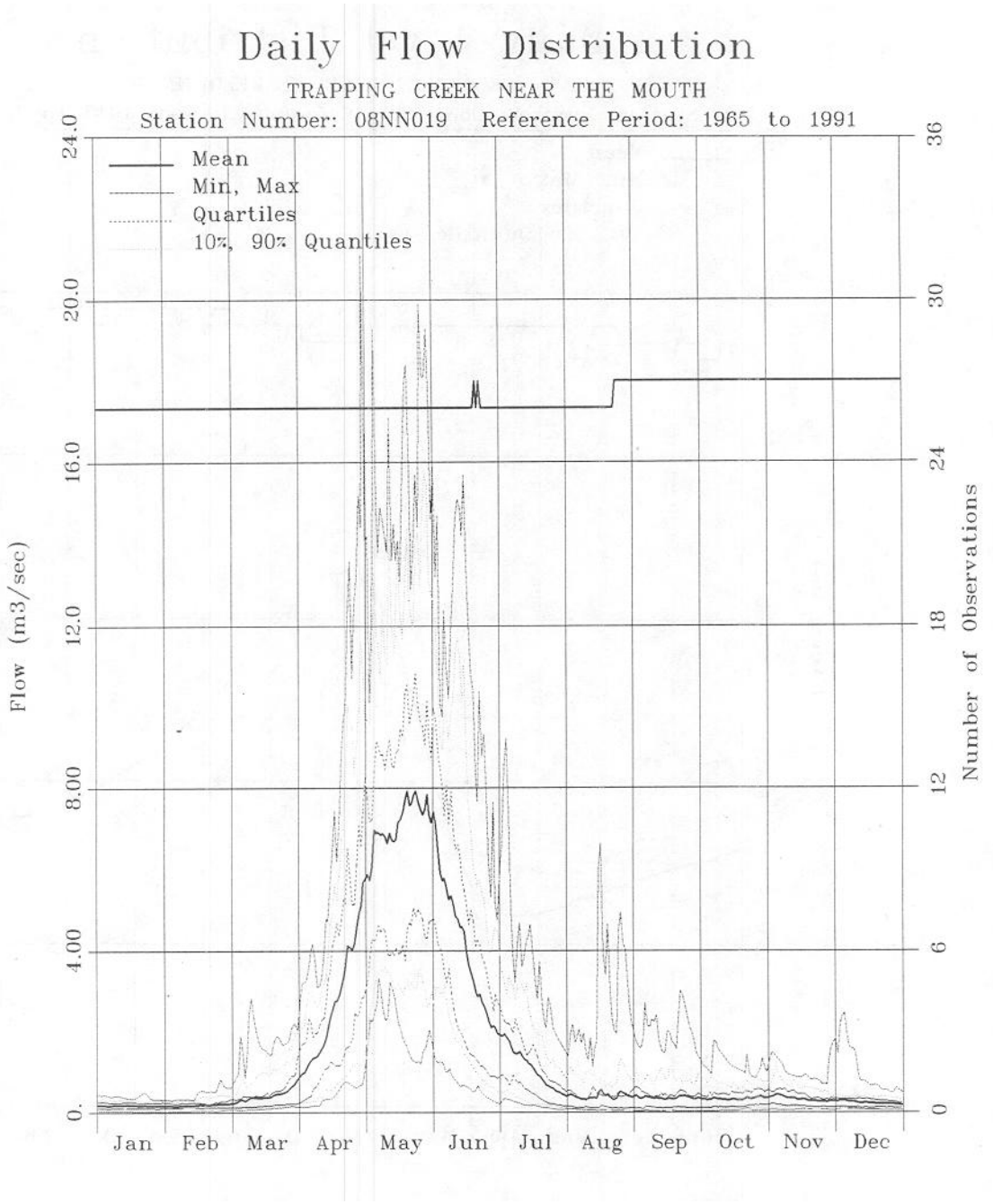
DISCHARGE (m^3/s)	TIME (%) DATA EQUALLED OR EXCEEDED												TOTAL
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	TIME
0.328	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
0.641	100.00	100.00	100.00	100.00	100.00	100.00	100.00	98.30	92.52	97.35	100.00	100.00	99.00
0.901	100.00	100.00	100.00	100.00	100.00	100.00	100.00	97.07	84.72	94.52	100.00	100.00	98.00
1.31	100.00	100.00	100.00	100.00	100.00	100.00	98.42	92.29	81.57	92.33	100.00	100.00	97.00
1.57	100.00	100.00	100.00	100.00	100.00	100.00	96.96	87.42	77.51	91.19	100.00	100.00	96.00
1.81	100.00	100.00	100.00	100.00	100.00	100.00	96.47	83.29	72.37	89.17	100.00	100.00	95.00
2.08	100.00	100.00	100.00	100.00	100.00	100.00	95.82	78.46	69.54	86.39	99.25	100.00	94.00
2.29	100.00	100.00	100.00	100.00	100.00	100.00	94.13	74.99	67.46	82.20	99.08	100.00	93.00
2.47	100.00	100.00	100.00	100.00	100.00	100.00	92.42	72.27	66.65	76.53	98.48	100.00	92.00
2.66	100.00	100.00	100.00	100.00	100.00	99.89	89.94	69.86	65.37	71.90	97.83	100.00	91.00
2.84	100.00	100.00	100.00	100.00	100.00	99.57	87.80	64.88	64.09	69.41	97.49	100.00	90.00
3.05	100.00	100.00	100.00	100.00	100.00	99.22	84.39	61.52	61.34	67.32	97.33	100.00	89.00
3.26	100.00	100.00	99.88	100.00	100.00	98.95	82.11	58.08	58.60	65.48	97.05	100.00	88.00
3.51	100.00	100.00	99.34	100.00	100.00	98.81	79.87	55.41	55.05	62.95	96.20	100.00	87.00
3.71	100.00	100.00	99.21	100.00	100.00	98.75	77.41	53.44	52.94	60.88	93.87	100.00	86.00
3.94	100.00	100.00	99.07	100.00	100.00	98.50	74.69	51.62	50.83	59.18	90.68	99.57	85.00
4.18	100.00	99.64	98.92	100.00	100.00	97.85	71.58	50.38	48.52	57.48	89.28	99.37	84.00
4.40	100.00	99.12	98.80	100.00	100.00	97.29	68.76	48.27	45.61	55.55	88.02	99.26	83.00
4.62	100.00	99.00	98.68	100.00	100.00	96.31	66.03	46.24	42.98	53.88	86.43	99.17	82.00
4.84	100.00	98.89	98.57	100.00	100.00	94.69	62.52	45.29	41.23	52.12	84.73	99.15	81.00
5.08	100.00	98.76	98.46	100.00	100.00	93.21	59.59	43.64	39.12	50.22	83.02	99.14	80.00
5.37	100.00	98.62	98.32	100.00	100.00	91.74	56.01	42.24	37.27	48.69	81.71	99.06	79.00
5.61	100.00	98.38	97.75	100.00	100.00	90.60	53.09	40.88	35.29	47.50	79.95	98.79	78.00
5.88	100.00	98.21	97.01	100.00	100.00	89.21	49.99	39.18	33.33	46.10	78.65	98.49	77.00
6.17	100.00	98.11	96.40	100.00	100.00	87.52	46.52	37.43	31.80	44.73	78.06	98.33	76.00
6.48	100.00	97.92	95.98	100.00	100.00	85.41	42.79	35.74	29.83	43.52	77.29	98.23	75.00
6.84	100.00	97.25	95.58	100.00	100.00	82.86	41.21	33.92	27.27	42.36	76.27	98.09	74.00
7.28	100.00	95.93	94.80	100.00	99.82	79.44	39.21	32.25	26.13	41.75	75.60	97.81	73.00
7.72	100.00	95.01	94.07	100.00	99.67	76.79	36.55	30.46	24.12	41.33	74.96	97.68	72.00
8.08	100.00	94.16	93.01	100.00	99.58	74.44	34.57	29.98	22.25	39.55	74.04	97.58	71.00
8.43	99.74	93.57	91.27	100.00	99.51	72.11	32.32	28.87	20.41	39.22	72.83	97.40	70.00
8.79	99.46	93.00	89.37	100.00	99.42	70.12	30.27	27.08	18.73	38.73	71.76	97.21	69.00
9.16	99.23	92.30	87.99	100.00	99.25	68.36	28.52	25.08	17.13	37.70	70.91	96.99	68.00
9.52	98.76	91.59	87.16	100.00	98.87	65.94	26.65	23.96	15.25	36.75	69.80	96.63	67.00
9.86	98.30	91.01	86.56	100.00	98.00	63.79	24.93	22.96	13.79	35.67	68.72	96.21	66.00
10.2	97.91	90.46	85.99	100.00	96.66	62.20	23.29	21.80	12.66	34.44	67.66	95.71	65.00
10.7	97.00	89.24	85.18	100.00	95.81	60.33	21.26	20.63	11.20	33.00	66.93	94.84	64.00
11.2	96.17	88.23	84.54	100.00	94.81	58.76	19.62	19.98	99.57	31.51	66.46	93.93	63.00
11.6	95.54	87.62	83.90	100.00	93.49	56.69	18.50	19.57	8.23	30.19	66.05	93.42	62.00
12.0	94.62	86.90	82.91	100.00	91.85	53.37	17.59	18.77	7.20	28.65	65.22	93.12	61.00
12.4	93.71	86.11	82.07	100.00	90.26	50.13	16.52	17.87	6.18	26.79	64.33	92.77	60.00
12.7	93.09	85.42	81.72	100.00	89.30	48.24	15.55	17.21	5.37	25.21	63.71	92.37	59.00
13.1	92.26	84.22	81.14	100.00	88.26	45.81	14.17	16.18	4.66	23.73	62.93	91.69	58.00
13.6	91.16	82.36	80.08	100.00	87.22	42.59	12.63	14.78	4.34	23.06	62.05	90.71	57.00
14.1	89.99	80.87	79.05	100.00	85.79	40.22	11.84	14.00	4.02	22.42	61.14	89.76	56.00
14.6	88.72	79.43	78.00	100.00	83.98	38.38	11.34	13.45	3.68	21.68	60.15	88.93	55.00
15.1	87.12	77.58	76.88	100.00	82.05	36.52	11.13	12.84	3.39	20.67	58.87	88.23	54.00
15.6	85.36	75.73	75.74	100.00	80.11	34.59	10.86	12.15	2.94	20.09	57.51	87.61	53.00
16.1	83.52	74.11	74.61	100.00	78.29	32.58	10.39	11.41	2.31	19.84	56.15	86.91	52.00
16.5	81.86	72.59	73.60	100.00	76.92	31.10	9.92	10.86	1.97	19.52	55.11	85.89	51.00
16.9	79.98	70.82	72.51	100.00	75.60	29.78	9.38	10.38	1.87	18.91	54.18	84.28	50.00

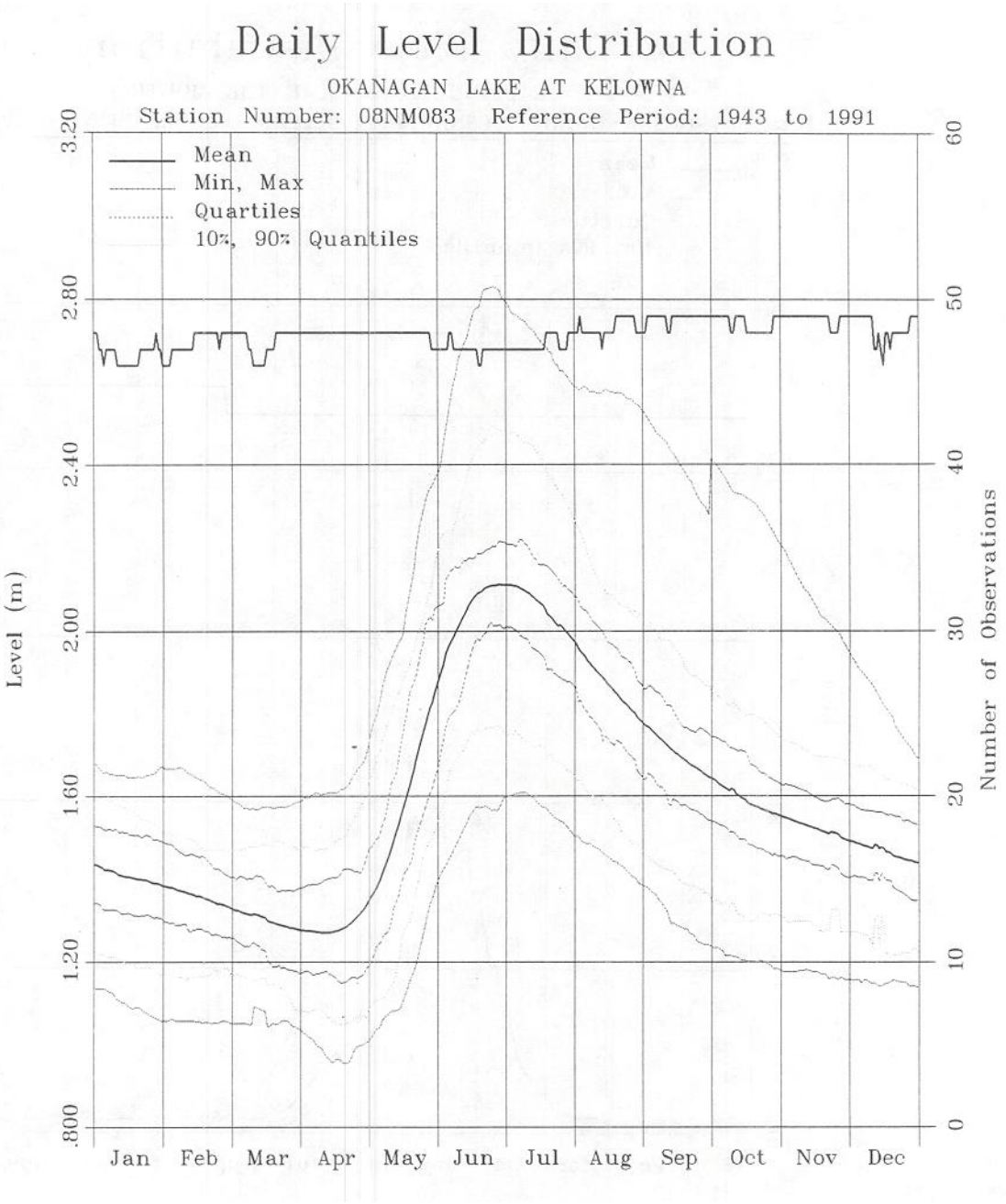
DISCHARGE (m^3/s)	TIME (%) DATA EQUALLED OR EXCEEDED												TOTAL
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	TIME
17.4	77.76	68.62	71.34	100.00	74.04	28.34	8.89	9.73	1.78	18.00	53.19	82.18	49.00
18.0	75.56	66.74	70.90	100.00	72.46	27.18	8.58	8.80	1.70	16.91	52.22	80.94	48.00
18.5	73.64	64.93	70.45	100.00	70.99	26.01	8.27	7.95	1.57	16.07	51.29	79.81	47.00
18.9	71.63	63.11	69.86	100.00	69.63	24.76	7.82	7.25	1.32	15.53	50.17	78.53	46.00
19.3	69.44	61.11	69.15	100.00	68.17	23.35	7.44	6.68	1.03	15.02	48.98	77.05	45.00
19.7	67.21	59.25	68.52	100.00	66.34	22.00	7.27	6.30	.76	14.47	47.87	75.93	44.00
20.2	64.44	57.18	67.81	100.00	03.72	20.43	7.17	5.97	.47	13.71	46.63	74.98	43.00
20.7	61.78	55.39	67.08	99.75	61.24	18.94	7.10	5.69	.24	13.04	45.43	74.24	42.00
21.2	59.60	53.85	66.30	99.46	59.12	17.50	7.01	5.41	.17	12.77	44.14	73.57	41.00
21.8	57.26	52.16	65.33	99.11	56.82	15.82	6.85	5.09	.14	12.48	42.72	72.80	40.00
22.4	54.95	50.59	64.82	98.53	53.90	14.37	6.62	4.78	.11	12.05	41.55	71.56	39.00
22.9	53.01	49.30	64.43	97.81	51.36	13.30	6.40	4.53	.10	11.60	40.71	70.34	38.00
23.5	50.84	47.77	63.63	96.88	48.60	12.16	6.21	4.29	.08	11.12	39.76	68.88	37.00
24.1	48.85	46.23	62.49	95.94	46.15	11.14	6.11	4.13	.06	10.72	38.81	67.49	36.00
24.8	46.64	44.37	61.18	95.12	43.36	10.20	5.98	3.93	.05	10.25	37.58	66.04	35.00
25.5	44.50	42.46	60.24	94.87	40.45	9.64	5.78	3.67	.03	9.74	36.18	64.83	34.00
26.1	42.82	41.12	59.32	94.49	38.05	9.12	5.61	3.44	.02	9.31	34.84	63.60	33.00
26.7	41.72	40.18	58.15	93.71	35.80	8.41	5.50	3.26	.01	9.00	33.16	62.03	32.00
27.5	40.51	39.28	56.36	92.30	32.92	7.30	5.37	3.09	.00	8.60	31.09	59.64	31.00
28.3	39.16	38.47	55.36	91.48	30.81	6.64	5.20	3.00	.00	8.11	29.71	57.32	30.00
29.2	37.45	37.53	54.33	90.65	28.91	6.16	4.96	2.95	.00	7.48	28.64	54.65	29.00
30.0	35.46	36.63	52.89	89.52	27.35	5.77	4.72	2.86	.00	6.87	26.86	52.11	28.00
30.7	33.68	35.81	51.34	88.31	26.02	5.43	4.50	2.73	.00	6.33	25.05	49.81	27.00
31.4	32.15	34.84	49.72	86.59	24.40	4.89	4.26	2.56	.00	5.80	23.37	47.63	26.00
32.0	31.07	33.88	48.30	84.61	22.84	4.24	4.04	2.38	.00	5.36	22.07	45.94	25.00
32.6	30.09	32.89	46.89	82.51	21.45	3.53	3.82	2.19	.00	4.94	20.84	44.41	24.00
33.4	28.58	31.60	45.07	79.89	20.16	2.67	3.49	1.88	.00	4.47	19.72	42.65	23.00
34.2	26.99	30.36	43.31	77.52	19.21	1.88	3.15	1.54	.00	4.16	18.97	41.11	22.00
35.0	25.62	29.24	41.75	74.66	18.25	1.26	2.85	1 24	.00	3.99	18.12	39.67	21.00
35.8	74.59	28.48	40.67	70.90	16.96	1.02	2.58	1.02	.00	3.93	16.95	38.29	20.00
36.6	23.75	27.77	39.48	65.26	15.50	.88	2.34	.85	.00	3.90	15.60	36.89	19.00
37.4	22.75	26.88	37.73	61.04	13.98	.73	2.21	.76	.00	3.88	14.24	35.43	18.00
38.2	21,57	25.81	35.46	57.51	12.46	.58	2.17	.74	.00	3.84	12.94	33.92	17.00
38.9	20.48	24.79	33.26	54.71	11.12	.44	2.15	.69	.00	3.77	11.93	32.57	16.00
39.8	19.07	23.69	31.09	51.18	9.66	.36	2.09	.49	.00	3.65	10.89	30.67	15.00
40.7	17.67	22.72	29.35	47.80	8.55	.32	1.97	.19	.00	3.49	10.09	28.77	14.00
41.7	16.28	21.62	27.49	44.20	7.76	.31	1.84	.00	.00	3.26	9.21	26.92	13.00
42.8	15.28	20.33	75.77	40.39	7.25	.30	1.71	.00	.00	2.90	7.98	25.32	12.00
43.9	14.20	18.95	23.00	36.65	6.84	.28	1.61	.00	.00	2.52	6.87	23.95	11.00
45.0	12.68	16.71	21.57	32.78	6.34	.23	1.54	.00	.00	2.17	6.10	22.48	10.00
46.2	10.66	14.27	20.22	29.04	5.83	.16	1.49	.00	.00	1.82	5.52	20.88	9.00
47.7	8.86	12.34	18.02	25.90	5.47	.14	1.33	.00	.00	1.57	4.72	19.00	8.00
49.4	7.45	10.74	15.03	23.68	5.27	.00	1.04	.00	.00	1.47	3.81	16.96	7.00
51.0	6.61	8.62	12.98	21.32	4.42	.00	.75	.00	.00	1.33	3.17	14.50	6.00
52.9	5.98	6.35	10.80	18.57	3.53	.00	.47	.00	.00	1.18	2.54	11.57	5.00
55.2	5.49	4.69	7.99	15.64	3.23	.00	.28	.00	.00	1.08	1.84	8.48	4.00
57.9	4.93	3.43	5.67	12.46	2.57	.00	.00	.80	.00	.78	1.15	5.82	3.00
61.6	4.07	1.29	3.51	9.60	1.89	.00	.00	.00	.00	.55	.00	3.18	2.00
67.0	2.63	.00	1.94	6.43	.67	.00	.00	.00	.00	.80	.00	.49	1.00
105	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

MINIMUM DISCHARGE = .328 MAXIMIM DISCHARGE = 104.000
TOTAL NUMBER OF DISCHARGE VALUES = 8605


Daily Hydrograph
TRAPPING CREEK NEAR THE MOUTH
Station Number: 08NN019 Year: 1990
Runoff (mm)
12.0
10.0
8.00
6.00
4.00
2.00
0.
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec


Daily Hydrograph
Year: 1990
08NN019
01ED005
Runoff (mm)
12.0
10.0
8.00
6.00
4.00
2.00
0.
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec


Daily Flow Distribution
TRAPPING CREEK NEAR THE MOUTH
Station Number: 08NN019 Reference Period: 1965 to 1991
Mean
Min, Max
Quartiles
10%, 90% Quantiles
Flow (m3/sec)
Number of Observations
24.0
20.0
16.0
12.0
8.00
4.00
0.
36
30
24
18
12
6
0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec


Daily Level Distribution
OKANAGAN LAKE AT KELOWNA
Station Number: 08NM083 Reference Period: 1943 to 1991
Mean
Min, Max
Quartiles
10%, 90% Quantiles
Level (m)
3.20
2.80
2.40
2.00
1.60
1.20
.800
Number of Observations
60
50
40
30
20
10
0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec