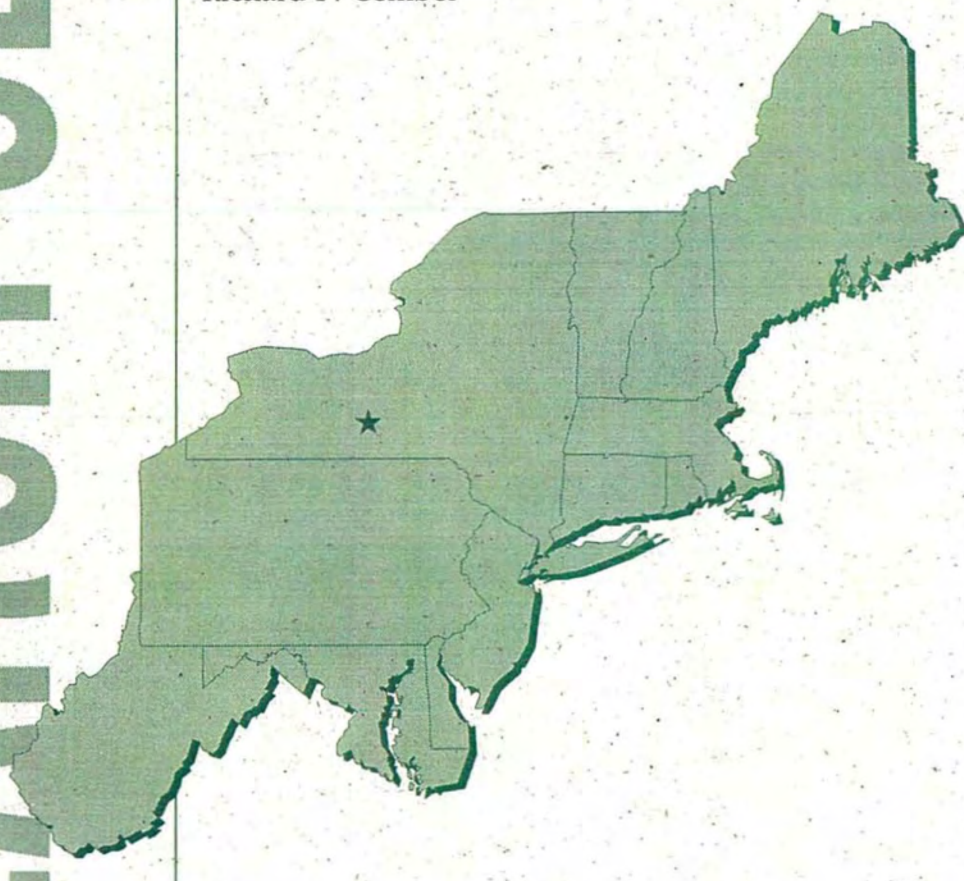
RESEARCH SERIES

NORTHEAST REGIONAL CLIMATE CENTER

Atlas of Precipitation Extremes for the Northeastern United States and Southeastern Canada

Daniel S. Wilks
Richard P. Cember



Cornell University
Ithaca, New York
Publication No. RR 93-5
September 1993

The mission of the Northeast Regional Climate Center (NRCC) is to facilitate and enhance the collection, dissemination and use of climate data as well as to monitor and assess climatic conditions and impacts in the twelve-state, northeastern region of the United States. Implementing this mission involves three programmatic objectives: 1) the development and management of regional climate data bases, 2) the dissemination of information and educational services regarding climate and its impacts, and 3) the performance and support of applied climate research.

Established in 1983, the Northeast Regional Climate Center (NRCC) is one of six regional climate centers now operating throughout the nation. These regional centers serve as sources of climate data and information to public and private institutions and individuals as well as expertise on local and regional climate problems. The Center's staff cooperate with State Climatologists and research scientists in disseminating climate data and information, analyzing environmental and economic impacts of climate variability, and developing new applications of weather and climate data for agriculture, business, industry, and government operations.

The NRCC Research Report series is intended to make available to interested users the full results of climate research that has been supported by the NRCC. This report series supplements the normal reporting of research results in professional journals and provides an outlet for more complete and comprehensive accounts of work performed than is generally possible in journals.

For further information please write or call:

Northeast Regional Climate Center
1123 Bradfield Hall
Cornell University
Ithaca, New York 14853-1901
(607) 255-1751

The Northeast Regional Climate Center is supported by a Grant from the National Oceanic and Atmospheric Administration.

Atlas of Precipitation Extremes for the Northeastern United States and Southeastern Canada

Daniel S. Wilks
Richard P. Cember

Northeast Regional Climate Center
Research Series
Publication No. RR 93-5
September 1993

CONTENTS

INTRODUCTION

Extreme precipitation events have the potential to produce localized or widespread flooding, with concomitant damage to property and potential loss of life. The climatology of these very large precipitation events is therefore an important component of engineering design for structures and facilities that must withstand or protect against such events.

The most widely used atlas of precipitation extremes in the U.S., *Rainfall Frequency Atlas of the United States* (Hershfield 1961), also known as Technical Paper 40, is now more than thirty years old. This standard work was based on fitting the Gumbel probability distribution to extreme rainfall data from relatively few stations, with average record length of only 22.6 years. Operationally, it has been found that Technical Paper 40 often underestimates the largest extreme precipitation events (Angel and Huff 1991). It is not clear to what extent this systematic underestimation results from inadequacy of the Gumbel distribution for extrapolation to the important rare events (Jenkinson 1955), or from the insufficient length of record available in 1961. However, it is widely agreed that updating and revision of that document is warranted.

This atlas presents updated statistics of extreme precipitation for the 12-state region designated as the northeastern states for purposes of the Regional Climate Centers program of the National Weather Service, National Oceanic and Atmospheric Administration. These states are Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, and West Virginia. Data from the states of Ohio, Kentucky, Michigan and Virginia, as well as from the Canadian provinces of Ontario, Quebec, and New Brunswick, have also been included in this project to complete the representation of the mapped fields within the map rectangle encompassing the northeastern U.S.

USING THE ATLAS

The maps in this atlas express extreme precipitation amounts using isohyets corresponding to "average return periods" for 1-day, 2-day, 5-day, and 10-day precipitation totals. That is, it is estimated that precipitation events as large or larger than the magnitudes shown on the maps will be separated, on average, by the number of years given by the return period. It is important to realize that the actual times between two precipitation events of a particular magnitude are not expected to correspond exactly to the return period. Rather, over the course of centuries, the average of the separation times between pairs of these events should be close to the specified return period. Thus the "hundred-year storm," or precipitation amount corresponding to the one hundred year return period, might not occur in a given century, but could occur more than once in some other century. In a hypothetical average over many centuries, however, one would expect about as many occurrences of the hundred-year event at a given location as the number of centuries being averaged.

The data records for most of the stations on which this atlas is based are shorter than one hundred years. This fact implies that the precipitation estimates for the one hundred year return period have been extrapolated beyond the observed data. These extrapolations have been achieved by fitting a theoretical probability function to the observed extreme precipitation data at each station. Precipitation amounts corresponding to shorter (i.e., not necessarily extrapolated) return periods have also been computed using the fitted probability functions, in order to smooth out sampling irregularities in the observed data. The extreme amounts corresponding to particular return periods are computed using equations, given below in the "Technical Details" section, relating probabilities of rare events to the average return periods.

In all cases, the observed data have been represented using the Beta-P distribution (Mielke and Johnson 1974), which was found in exploratory work to give the best results among many candidate distributions for extreme precipitation data in the northeastern U.S. (Wilks 1993). For all stations used to construct the atlas, the underlying data consist of once-daily precipitation measurements. Of the many daily precipitation observations actually available for each station, Beta-P distributions were fit only to the "partial-duration" data, with sample sizes approximately equal to the number of years in each stations's data record. That is, the n largest precipitation amounts observed at each station were used, where n equals approximately the number of years of precipitation data available for that station.

Separate maps are presented for 1-day, 2-day, 5-day, and 10-day precipitation accumulations. For the 1-day maps, the once-daily observations appearing in the climatological records for each station were used directly. For the remaining maps, the daily observations were totaled over pairs, sequences of five, and sequences of ten days, respectively. When constructing the partial-duration data for the 2-day, 5-day and 10-day accumulations, care was taken to exclude any overlapping sequences from the analysis. That is, the precipitation observation for any single day can be included in at most one of the sequences making up the partial-duration data for a given accumulation period. When constructing the data for the 2-day accumulation, for example, a day on which a very large precipitation amount was received would make up a pair with either the preceding day or the following day, whichever had the larger precipitation observation. The analysis would not produce two precipitation amounts in the partial duration data that both included a day in common.

Precipitation is routinely observed at a fixed time each day at a given location, which results in a somewhat arbitrary division of time into 24-hour slices. When an important storm is in progress at the scheduled daily observation time, that precipitation will be reported to have occurred over two (or possibly more) days. Many users will find it more meaningful to think in terms of 24-, 48-, 120- and 240-hour precipitation events, rather than the 1-, 2-, 5-, and 10-day accumulations directly available from the climatological record and reported here. One might like to know, for example, the 100-year precipitation for the wettest consecutive 24 hours, regardless of when those hours happened to occur in relation to the standard observation time.

While it is not possible to determine exactly the relationship between, say, the wettest 24 hours and the wettest 1-day precipitation observation for a given storm on the basis of the available daily data, the average relationship can be estimated using the empirical factors given in Table 1, taken from Hershfield (1961). It is important to realize that these empirical factors have *not* been incorporated into the maps in this atlas, in order that the maps reflect only results for the data as observed. The conversion factors in Table 1 are provided for those users who may require estimates of the larger precipitation accumulations that would have been reported if the

Table 1. Empirical adjustment factors that can be used to transform precipitation amounts pertaining to calendar day observations, to estimates of maximum precipitation regardless of observation time. From Hershfield (1961).

To convert from precipitation over this many days	To maximum precipitation over this many hours	Multiply by
1	24	1.13
2	48	1.05
5	120	1.01
10	240	1.01

Table 2. Empirical adjustment factors that can be used to transform precipitation amounts pertaining to 24-hour accumulations to estimates of precipitation for shorter time periods. From Huff and Angel (1992).

To estimate maximum precipitation over	Multiply the precipitation amount from the 1-day maps by
18 hours	1.06
12 hours	0.98
6 hours	0.85
3 hours	0.72
2 hours	0.66
1 hour	0.53
30 minutes	0.42
15 minutes	0.31
10 minutes	0.24
5 minutes	0.14

observations were not constrained to occur at fixed times. Notice that these empirical conversion factors decrease quite sharply for the longer accumulation periods, indicating that a substantial fraction of the precipitation in the wettest 24 hours is expected on average to be distributed over a second daily observation, but that the 5- and 10-day periods are long enough that there is usually very little difference between calendar-day observations and arbitrarily located observation windows of the same lengths.

Similarly, many users will require estimates of extreme precipitation amounts occurring over periods shorter than 24 hours. While these can not be obtained directly from daily observations, they can be estimated using the empirical adjustment factors given in Table 2. These factors have been taken from Huff and Angel (1992), and correspond closely to those given in Hershfield (1961).

Example: Suppose the 100-year, 1-day precipitation for a location of interest, from Map 6, is 5.00 inches. The corresponding 100-year 24-hour precipitation (i.e., the estimated 24-hour, hundred-year precipitation regardless of the observation time) would be obtained by multiplying by the factor 1.13 from Table 1, yielding 5.00 x 1.13 = 5.65 inches. The estimated 100-year event for a 1-hour precipitation accumulation at this same location would be obtained, using Table 2, as 5.00 x 0.53 = 2.65 inches.

Finally, it should be realized that the maps in this atlas are likely to exhibit a bias in regions containing large topographic variations. This is because the places where the precipitation measurements have been made tend to be locations where people live and work, which are generally valley locations in preference to those at higher elevations. Cember and Wilks (1993) found that the existing station locations effectively underestimate average elevations in mountainous areas of the northeastern U.S. by about 500 feet.

Therefore, the mapped quantities in this atlas should accurately reflect climatological conditions at locations typical of the observing stations, but should be expected to underestimate extreme precipitation amounts at elevations substantially above the local settlements.

THE UNDERLYING DATA

This atlas has been prepared using daily precipitation data for the 1473 stations listed in Table 3. These data were obtained from the archives of the Northeast Regional Climate Center (Ithaca, New York), the National Climatic Data Center (Asheville, North Carolina), and the Canadian Climate Centre (Downsview, Ontario). The locations of most of the stations listed in Table 3 are shown in Figure 1, on the same base map used to represent the precipitation extremes in this atlas. Those stations not shown in Figure 1 were included in the analysis to improve the representation at the edges of the maps. They are located within about 1° of longitude of the map rectangle to the east and west, within about 2° of latitude to the north, and extend to the southern borders of Virginia and Kentucky to the south.

Data from climatological stations within the domain of this atlas were included only if they contained at least 30 years of record. That is, a station was included only if at least 10,958 daily observations passing quality-control screening existed in its record. The average record length of included stations was 51.3 years, with more than 100 years being available at a few stations. The maps have been constructed in a way that gives more weight in the spatial analysis to stations with longer data records.

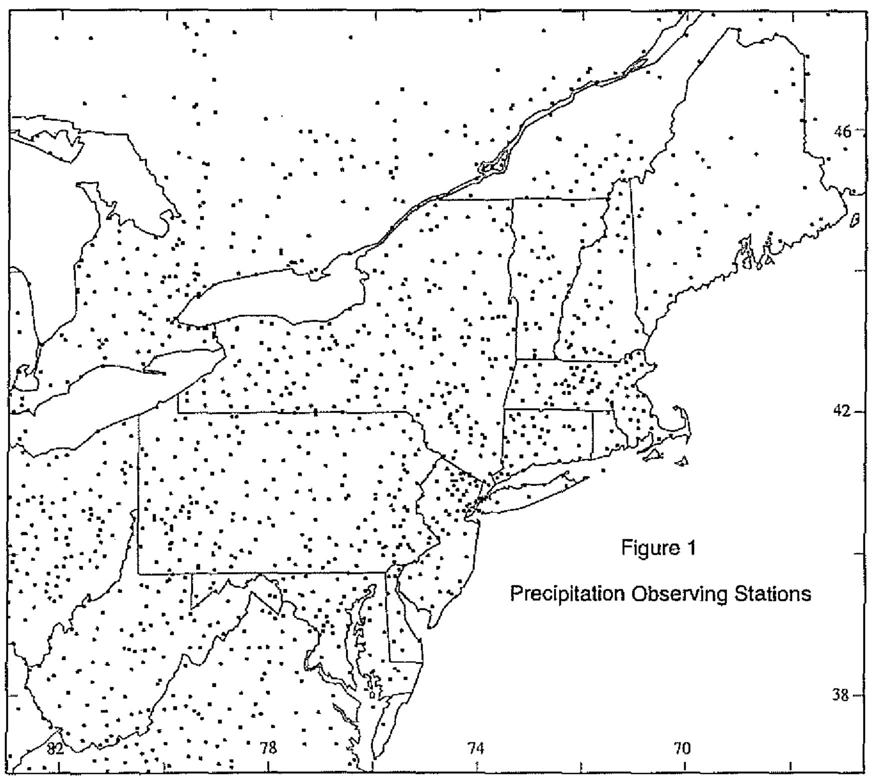


Figure 1
Precipitation Observing Stations

TECHNICAL DETAILS

The Beta-P Distribution and Computation of Return Periods. Smoothing and extrapolation of the observed extreme precipitation data for all stations was done by fitting the Beta-P distribution (Mielke and Johnson, 1974). The probability density function for this distribution is

$$f(x) = \frac{\alpha\theta}{\beta}\left(\frac{x}{\beta}\right)^{\theta-1}\left[1+\left(\frac{x}{\beta}\right)^{\theta}\right]^{-(\alpha+1)} , \qquad (1)$$

where x is the random variable (here, partial-duration precipitation amounts), which must be nonnegative. The distribution has three parameters: α and θ are dimensionless shape parameters, and β is a scale parameter having the same physical units as the random variable. The three parameters are constrained to be positive. The distributions were fit to data for each station by maximum likelihood, using the Levenberg-Marquardt method (Press et al. 1986), as described in Wilks (1993). One convenient feature of the Beta-P distribution is that it is analytically integrable, so that its cumulative distribution function can be written in closed form. That is, Beta-P probabilities can be obtained using

$$F(x) = \Pr\{X \le x\} = \int_0^x f(x)\,dx = 1 - \left[1+\left(\frac{x}{\beta}\right)^{\theta}\right]^{-\alpha} . \qquad (2)$$

Average return periods, R, relate to cumulative probabilities, F, of the distributions of partial-duration data according to

$$R = \frac{1}{\omega\,[1 - F(x)]} , \qquad (3)$$

where ω is the average frequency with which the partial-duration data samples the full record of daily observations, in years^{-1}. For the present analysis, the average sampling frequency was chosen to be close to 1 yr^{-1}, but because individual data records may start and stop on different dates and may contain different numbers of missing data, ω varies slightly from station to station. Let N represent the number of daily observations passing the quality control screening that are available for a particular station. The partial-duration data were then constructed to consist of the largest n precipitation accumulations, where n is the greatest integer not exceeding N/365.25. This convention results in the average sampling frequency being

$$\omega = \frac{365.25\,n}{N}\ yr^{-1} . \qquad (4)$$

Precipitation amounts, x, corresponding to specified return periods are obtained by inverting Equation 2 (i.e., solving it for x), and substituting the expression $F(x) = 1 - 1/\omega R$ obtained by rearrangement of Equation 3. These operations yield the expression for precipitation amounts as a function of return period, and of the parameters of the fitted Beta-P distribution,

$$x = \beta\,[\,(\omega R)^{1/\alpha} - 1\,]^{1/\theta} . \qquad (5)$$

Quality Control Procedure. Quality control of extreme precipitation amounts is difficult, owing to the high spatial and temporal variability of this quantity. Daily amounts larger than 5 inches were screened here for coherence with nearby locations. To be considered valid, precipitation amounts of 10 inches or more had to be corroborated by occurrence of at least 5 inches of precipitation at each of at least two stations within 200 miles on the same day, the previous day, or the following day. Precipitation amounts between 5 inches and 10 inches were considered valid if corroborated by at least two stations within 200 miles reporting at least 3 inches of precipitation on the same day, the previous day, or the following day.

In the data-sparse regions of the northwestern and northeastern corners of the domain, these criteria were relaxed to allow corroboration if only one station within the 200 mile radius reported a large precipitation amount as specified above. Early in the climatological record, the station density is too sparse to allow spatial comparison of precipitation amounts in this way. The quality control procedure was implemented beginning in 1927 for stations in the U.S., in 1871 for stations in Ontario, in 1883 for stations in Quebec, and in 1891 for stations in New Brunswick. All reasonable data values for records preceding these dates have been accepted into the analysis.

Interpolation, Gridding, Smoothing and Contouring. This atlas has been prepared by first gridding individual station values, and then producing the contour maps from the gridded fields by automated means.

Precipitation amounts corresponding to the specified return periods were cast into a 54 x 82 (latitude x longitude) grid, with points spaced at 0.2° intervals. This grid is confined to the map rectangle, but stations outside the rectangle were also used to improve the representation at the map edge, as noted above. The gridding algorithm finds the smallest circle around each gridpoint that encloses at least two stations, where the circle radius is an integer multiple of 0.2 great circle degrees. If the circle has a radius of 1.4° or less, the grid point is assigned a weighted average of the station values enclosed. Otherwise, the grid point is assigned a missing value code.

Each grid point value is computed as

$$z_g(\lambda_g, \phi_g) = \frac{\sum_{i=1}^{I} w_i(\lambda_g, \phi_g, \lambda_i, \phi_i)\; z_i(\lambda_i, \phi_i)}{\sum_{i=1}^{I} w_i(\lambda_g, \phi_g, \lambda_i, \phi_i)}\,, \qquad (6)$$

where w_i is a modified McLain (1974) weighting function

$$w_i(\lambda_g, \phi_g, \lambda_i, \phi_i) = \frac{\sqrt{N_i}\;\exp\left[-\frac{\cos^2\phi_0\;(\lambda_g-\lambda_i)^2 + (\phi_g-\phi_i)^2}{d_{scale}^2}\right]}{f + \frac{\cos^2\phi_0\,(\lambda_g-\lambda_i)^2 + (\phi_g-\phi_i)^2}{d_{scale}^2}}\,. \qquad (7)$$

Here z represents precipitation amount, λ is longitude, ϕ is latitude, the subscript g refers to the grid point, the subscript i distinguishes among the I individual stations within each circle, and N_i is the sample size of the precipitation data at station i. The parameter $d_{scale} = 1.2°$ is a scaling distance, $\phi_0 = 42.45°$ is a reference latitude, and $f = 10^{-6}$ is a small constant used to prevent division by zero.

The gridded fields were smoothed using the moving average in a 3 x 3 cell window, i.e., by an unweighted averaging of each grid point with its eight adjacent neighbors. These smoothed gridded values were contoured and plotted using the NCAR Graphics software package, version 3.00 (Clare and Kennison 1989).

ACKNOWLEDGMENTS

We thank Keith Eggleston, Megan McKay, and Bill Noon of the Northeast Regional Climate Center for project support. We also thank Floyd A. Huff, Dan Leathers, Dave Robinson, and Tom Schmidlin for valuable comments on an earlier version of this atlas. This work was supported by the National Oceanic and Atmospheric Administration under grant NA16CP-0220-02.

REFERENCES

Angel, J.R., and F.A. Huff, 1991. Development of new rainfall frequency relations for nine midwestern states. *Preprints, 7th Conference on Applied Climatology,* Salt Lake City. American Meteorological Society, Boston, MA, 131-135.

Cember, R.P., and D.S. Wilks, 1993. *Climatological Atlas of Snowfall and Snow Depth for the Northeastern United States and Southeastern Canada.* Northeast Regional Climate Center Research Publication RR 93-1. 216 pp.

Clare, F., and D. Kennison, 1989. *NCAR Graphics Guide to New Utilities Version 3.00.* National Center for Atmospheric Research, Boulder CO.

Hershfield, D.M., 1961. *Rainfall Frequency Atlas of the United States.* U.S. Department of Commerce, Weather Bureau Technical Paper 40, 115 pp.

Huff, F.A., and J.R. Angel, 1992. *Rainfall Frequency Atlas of the Midwest.* Illinois State Water Survey, Champaign IL, Bulletin 71, 141 pp.

Jenkinson, A.F., 1955. The frequency distribution of the annual maximum (or minimum) values of meteorological elements. *Quarterly Journal of the Royal Meteorological Society,* 81, 158-169.

McLain, D.H., 1974. Drawing contours from arbitrary data points. *Computer Journal,* 17, 318-324.

Mielke, P.W., Jr., and E.S. Johnson, 1974. Some generalized beta distributions of the second kind having desirable application features in hydrology and meteorology. *Water Resources Research,* 10, 223-226.

Press, W.H., B.P. Flannery, S.A. Teukolsky, and W.T. Vettering, 1986. *Numerical Recipes: The Art of Scientific Computing.* Cambridge University Press, 818 pp.

Wilks, D.S., 1993. Comparison of 3-parameter probability distributions for representing annual extreme and partial-duration precipitation series. *Water Resources Research,* 29, 3543-3549.

Table 3. List of stations used, their locations, and digitally available periods of record.

Station number	Station name	Latitude (degrees)	Longitude (degrees)	Record begins	Record ends
CONNECTICUT					
060299	BARKHAMSTED	41.92	72.95	1948	1993
060806	BRIDGEPORT WSO AP	41.17	73.13	1948	1993
060918	BROOKLYN	41.78	71.95	1950	1983
060961	BULLS BRIDGE DAM	41.65	73.48	1948	1993
060973	BURLINGTON	41.80	72.93	1937	1993
061488	COCKAPONSET RANGER STN	41.47	72.52	1948	1993
061689	COVENTRY	41.80	72.35	1957	1992
061715	CREAM HILL	41.90	73.32	1926	1972
061762	DANBURY	41.38	73.47	1948	1993
062658	FALLS VILLAGE	41.95	73.37	1948	1993
063207	GROTON	41.35	72.05	1948	1993
063451	HARTFORD BRAINARD FLD	41.73	72.65	1920	1993
063456	HARTFORD WSO AP	41.93	72.68	1954	1993
064488	MANSFIELD HOLLOW LAKE	41.75	72.18	1952	1993
064767	MIDDLETOWN 4 W	41.55	72.72	1948	1993
065077	MOUNT CARMEL	41.40	72.90	1936	1993
065445	NORFOLK 2 SW	41.97	73.22	1942	1993
065893	NORWALK GAS PLANT	41.12	73.42	1956	1989
065910	NORWICH PUB UTIL PLANT	41.53	72.07	1956	1993
066655	PUTNAM LAKE	41.08	73.63	1948	1993
066966	ROCKY RIVER DAM	41.58	73.43	1948	1993
067002	ROUND POND	41.30	73.53	1948	1993
067157	SAUGATUCK RESERVOIR	41.25	73.35	1948	1993
067373	SHEPAUG DAM	41.72	73.30	1948	1993
067432	SHUTTLE MEADOW RESVR	41.65	72.82	1948	1993
067970	STAMFORD 5 N	41.13	73.55	1955	1993
068065	STEVENSON DAM	41.38	73.17	1948	1993
068138	STORRS	41.80	72.25	1888	1993
068436	TORRINGTON	41.80	73.12	1948	1993
068911	WATERBURY CITY HALL	41.57	73.03	1926	1958
069067	WESTBROOK	41.30	72.43	1940	1978
069162	WEST HARTFORD	41.75	72.78	1948	1993
069568	WIGWAM RESERVOIR	41.68	73.15	1948	1993
DELAWARE					
071330	BRIDGEVILLE 1 NW	38.75	75.62	1948	1985
072730	DOVER	39.15	75.52	1948	1993
073570	GEORGETOWN 5 SW	38.63	75.45	1948	1993
075320	LEWES	38.77	75.13	1948	1993
075852	MIDDLETOWN 1 WSW	39.43	75.75	1952	1988
075915	MILFORD 2 WSW	38.90	75.47	1948	1991
076410	NEWARK UNIV FARM	39.67	75.73	1948	1993
079595	WILMINGTON WSO AP	39.67	75.60	1948	1993
079605	WILMINGTON PORTER RESVR	39.77	75.53	1948	1993
KENTUCKY					
150254	ASHLAND	38.45	82.62	1932	1991
150381	BARBOURVILLE	36.87	83.88	1948	1991
150450	BAXTER	36.85	83.33	1948	1991
151120	BURDINE 2 NE	37.22	82.58	1952	1991
151576	CLAY CITY WATER WORKS	37.87	83.93	1955	1991
152791	FARMERS 2 S	38.12	83.55	1932	1991
152903	FLEMINGSBURG	38.42	83.73	1948	1991
153046	FREEBURN 2 SW	37.55	82.17	1951	1987
153052	FRENCHBURG 2 W	37.95	83.67	1948	1991
153714	HAZARD WATER WORKS	37.25	83.18	1950	1991
153741	HEIDELBERG LOCK 14	37.55	83.77	1932	1991
154196	JACKSON	37.55	83.38	1948	1984
154255	JEREMIAH 1 S	37.15	82.93	1948	1991
154946	LOUISA 2 SW	38.12	82.63	1951	1991
155111	MANCHESTER 4 W	37.15	83.82	1951	1991
155243	MAYSVILLE SEWAGE PLANT	38.68	83.78	1948	1991
155389	MIDDLESBORO	36.60	83.73	1928	1991
155640	MOUNT STERLING	38.07	83.93	1948	1991
156028	ONEIDA	37.27	83.65	1957	1991
156136	PAINTSVILLE 1 E	37.82	82.78	1933	1991
MAINE					
170275	AUGUSTA FAA AP	44.32	69.80	1948	1993
170355	BANGOR FAA AP	44.80	68.82	1953	1993
170371	BAR HARBOR 3 NW	44.42	68.25	1948	1982
170480	BELFAST	44.40	69.00	1948	1993
170600	BINGHAM WYMAN DAM	45.07	69.90	1957	1993
170814	BRASSUA DAM	45.67	69.82	1948	1993
170833	BRIDGEWATER	46.42	67.85	1957	1993
170844	BRIDGTON 3 NNW	44.08	70.73	1955	1993
170934	BRUNSWICK	43.90	69.93	1952	1993
171175	CARIBOU WSO AP	46.87	68.02	1939	1993
171628	CORINNA	44.92	69.27	1948	1993
172426	EASTPORT	44.92	67.00	1926	1993
172620	ELLSWORTH	44.53	68.43	1948	1993
172765	FARMINGTON	44.68	70.15	1926	1993
172868	FORT FAIRFIELD 5 NE	46.80	67.77	1936	1980
172878	FORT KENT	47.25	68.58	1945	1993
173046	GARDINER	44.22	69.78	1948	1993
173261	GRAND LAKE STREAM	45.18	67.78	1948	1993
173353	GREENVILLE	45.47	69.60	1920	1975
173892	HOULTON FAA AP	46.12	67.78	1948	1993
173897	HOULTON	46.13	67.83	1936	1985
174086	JACKMAN	45.63	70.27	1948	1993
174183	JONESBORO	44.65	67.65	1948	1993
MAINE (continued)					
174566	LEWISTON	44.10	70.22	1926	1993
174781	LONG FALLS DAM	45.22	70.20	1953	1993
174878	MACHIAS	44.72	67.47	1948	1993
174927	MADISON	44.80	69.88	1948	1993
175261	MIDDLE DAM	44.78	70.92	1948	1993
175304	MILLINOCKET	45.65	68.70	1948	1993
175460	MOOSEHEAD	45.58	69.72	1948	1993
176430	ORONO	44.90	68.67	1948	1993
176905	PORTLAND WSMO AP	43.65	70.32	1920	1993
176937	PRESQUE ISLE	46.65	68.00	1926	1993
177174	RIPOGENUS DAM	45.88	69.18	1948	1993
177250	ROCKLAND	44.10	69.12	1937	1976
177325	RUMFORD 1 SSE	44.53	70.53	1948	1993
177330	RUMFORD	44.55	70.55	1926	1959
177479	SANFORD 2 NNW	43.47	70.78	1953	1993
178398	SQUA PAN DAM	46.55	68.33	1948	1993
178942	UPPER DAM	44.87	70.87	1948	1993
179151	WATERVILLE PUMP STN	44.55	69.65	1958	1993
179314	WEST BUXTON 2 NNW	43.70	70.62	1953	1993
MARYLAND					
180015	ABERDEEN PHILLIPS FLD	39.47	76.17	1948	1993
180193	ANNAPOLIS POLICE BRKS	38.98	76.50	1951	1993
180465	BALTIMORE WSO AP	39.18	76.67	1948	1993
180470	BALTIMORE WSO CI	39.28	76.62	1893	1993
180700	BELTSVILLE	39.03	76.88	1948	1993
180732	BENSON POLICE BARRACKS	39.50	76.38	1948	1993
181032	BOYDS 2 NW	39.22	77.33	1953	1991
181125	BRIGHTON DAM	39.20	77.02	1948	1991
181385	CAMBRIDGE WTR TRMT PLT	38.57	76.07	1948	1992
181627	CENTREVILLE	39.05	76.07	1953	1985
181750	CHESTERTOWN	39.22	76.07	1948	1993
181995	COLLEGE PARK	38.98	76.95	1948	1993
182060	CONOWINGO DAM	39.65	76.17	1941	1992
182325	DALECARLIA RESERVOIR DC	38.93	77.12	1948	1993
182523	DENTON 2 E	38.88	75.80	1952	1989
182770	EDGEMONT	39.67	77.55	1948	1993
182906	EMMITSBURG 2 SE	39.68	77.30	1956	1993
183348	FREDERICK POLICE BRKS	39.42	77.43	1948	1993
183355	FREDERICK 3 E	39.40	77.37	1948	1990
183675	GLENN DALE BELL STN	38.97	76.80	1948	1993
183975	HAGERSTOWN	39.65	77.73	1948	1993
184030	HANCOCK FRUIT LAB	39.70	78.18	1948	1993
184780	KEEDYSVILLE	39.48	77.70	1923	1960
185080	LA PLATA 1 W	38.53	77.00	1948	1993
185111	LAUREL 3 W	39.10	76.90	1949	1993
185894	MERRILL	39.60	79.08	1951	1993
185985	MILLINGTON 2 WNW	39.27	75.87	1948	1993
186350	NATIONAL ARBORETUM DC	38.90	76.97	1948	1993
186620	OAKLAND 1 SE	39.40	79.40	1948	1993
186770	OWINGS FERRY LANDING	38.68	76.67	1948	1993
186844	PARKTON 2 SW	39.63	76.70	1953	1986
187330	PRINCESS ANNE	38.22	75.68	1948	1993
187705	ROCKVILLE 1 NE	39.10	77.10	1948	1993
187806	ROYAL OAK 2 SSW	38.72	76.18	1948	1993
188000	SALISBURY	38.37	75.58	1948	1993
188005	SALISBURY FAA AP	38.33	75.52	1948	1993
188065	SAVAGE RIVER DAM	39.52	79.13	1948	1993
188380	SNOW HILL 4 N	38.23	75.38	1948	1993
188877	TOWSON	39.38	76.57	1948	1991
189030	UNIONVILLE	39.45	77.18	1948	1993
189070	UPPER MARLBORO 3 NNW	38.87	76.78	1956	1993
189140	VIENNA	38.48	75.83	1949	1993
189750	WOODSTOCK	39.33	76.87	1895	1993
MASSACHUSETTS					
190049	ADAMS	42.65	73.10	1930	1978
190120	AMHERST	42.38	72.53	1926	1993
190190	ASHBURNHAM	42.65	71.88	1948	1993
190408	BARRE FALLS DAM	42.43	72.03	1959	1993
190535	BEDFORD	42.48	71.28	1957	1993
190551	BEECHWOOD	42.23	70.82	1948	1993
190562	BELCHERTOWN	42.28	72.35	1948	1993
190666	BIRCH HILL DAM	42.63	72.12	1948	1993
190736	BLUE HILL WSO	42.22	71.12	1926	1993
190770	BOSTON WSO AP	42.37	71.03	1920	1993
190801	BOYLSTON	42.35	71.72	1948	1985
190860	BROCKTON	42.05	71.00	1948	1993
190998	BUFFUMVILLE LAKE	42.12	71.90	1959	1993
191436	CHESTERFIELD	42.38	72.85	1948	1993
191447	CHESTNUT HILL	42.33	71.15	1948	1986
191561	CLINTON	42.40	71.68	1948	1985
192107	EAST BRIMFIELD LAKE	42.12	72.13	1962	1993
192451	EAST WAREHAM	41.77	70.67	1926	1993
192501	EDGARTOWN	41.38	70.52	1948	1993
192806	FITCHBURG 4 SE	42.55	71.75	1948	1978
192975	FRAMINGHAM	42.28	71.42	1948	1989
192997	FRANKLIN	42.08	71.42	1948	1993
193052	GARDNER	42.58	71.98	1948	1993
193401	HARDWICK	42.35	72.18	1948	1993
193471	HATCHVILLE	41.62	70.53	1948	1993

Station number	Station name	Latitude (degrees)	Longitude (degrees)	Record begins	Record ends
MASSACHUSETTS (continued)					
193505	HAVERHILL	42.77	71.07	1948	1993
193549	HEATH	42.67	72.82	1948	1993
193624	HINGHAM	42.23	70.92	1960	1993
193702	HOLYOKE	42.20	72.60	1948	1994
193772	HUBBARDSTON	42.48	72.00	1948	1980
193821	HYANNIS	41.67	70.30	1926	1993
193876	IPSWICH	42.67	70.87	1948	1993
193985	KNIGHTVILLE DAM	42.28	72.87	1948	1993
194105	LAWRENCE	42.70	71.17	1926	1993
194313	LOWELL	42.65	71.37	1948	1993
194449	MANSFIELD	42.05	71.20	1948	1993
194711	MIDDLEBORO	41.88	70.92	1948	1993
194744	MIDDLETON	42.60	71.02	1948	1993
194760	MILFORD	42.17	71.52	1948	1993
195246	NEW BEDFORD	41.63	70.93	1948	1993
195285	NEWBURYPORT	42.83	70.92	1948	1993
195306	NEW SALEM	42.45	72.33	1948	1993
196251	PELHAM	42.40	72.40	1948	1990
196262	PEMBROKE	42.02	70.82	1948	1991
196322	PETERSHAM 3 N	42.53	72.18	1948	1993
196414	PITTSFIELD	42.43	73.28	1925	1970
196425	PLAINFIELD	42.52	72.92	1948	1993
196486	PLYMOUTH	41.95	70.67	1948	1993
196699	QUABBIN INTAKE	42.37	72.28	1948	1991
196783	READING	42.52	71.13	1960	1993
196938	ROCHESTER	41.78	70.92	1951	1993
196977	ROCKPORT 1 ESE	42.65	70.60	1948	1983
197627	SOUTHBRIDGE 3 SW	42.05	72.08	1948	1993
198046	SPRINGFIELD	42.10	72.58	1926	1984
198154	STERLING	42.45	71.82	1948	1985
198181	STOCKBRIDGE	42.30	73.33	1948	1985
198367	TAUNTON	41.90	71.07	1948	1993
198573	TULLY LAKE	42.63	72.22	1949	1993
198793	WARE	42.27	72.25	1948	1993
199191	WESTFIELD	42.12	72.70	1948	1993
199316	WEST MEDWAY	42.13	71.43	1957	1993
199360	WESTON	42.38	71.32	1929	1968
199371	WEST OTIS	42.17	73.15	1948	1993
199923	WORCESTER WSO AP	42.27	71.87	1948	1993
199928	WORCESTER	42.30	71.82	1926	1962
MICHIGAN					
200230	ANN ARBOR UNIV OF MICH	42.30	83.72	1901	1991
200417	BAD AXE	43.82	83.00	1925	1991
201299	CARO REGIONAL CENTER	43.45	83.40	1928	1991
202015	DEARBORN	42.32	83.23	1952	1991
202423	EAST TAWAS	44.28	83.50	1931	1991
202846	FLINT WSO AP	42.97	83.75	1948	1991
203477	GROSSE POINTE FARMS	42.38	82.90	1950	1991
203529	HALE LOUD DAM	44.47	83.72	1948	1991
203585	HARBOR BEACH 1 SSE	43.83	82.63	1931	1991
203947	HOWELL WWTP	42.60	83.93	1948	1991
204655	LAPEER	43.05	83.35	1931	1991
205452	MILFORD GM PROVING GROU	42.58	83.70	1931	1991
205488	MILLINGTON 3 SW	43.23	83.57	1948	1991
205558	MONROE WATERWORKS	41.92	83.40	1931	1991
205650	MOUNT CLEMENS ANG BASE	42.60	82.83	1948	1991
206658	PONTIAC STATE HOSPITAL	42.65	83.30	1948	1991
206680	PORT HURON SEWAGE PLANT	42.98	82.42	1931	1991
207350	SANDUSKY	43.42	82.83	1948	1991
207419	SEBEWAING	43.73	83.45	1948	1991
207820	STANDISH 5 SW	43.95	84.03	1948	1991
209014	WILLIS 5 SSW	42.08	83.58	1948	1983
209188	YALE	43.15	82.80	1948	1991
NEW HAMPSHIRE					
270690	BERLIN	44.45	71.18	1926	1993
270703	BETHLEHEM	44.28	71.68	1948	1993
270741	BLACKWATER DAM	43.32	71.72	1948	1992
270910	BRADFORD	43.25	71.97	1948	1993
271683	CONCORD WSO AP	43.20	71.50	1921	1993
272023	DIXVILLE NOTCH	44.87	71.33	1948	1993
272174	DURHAM	43.15	70.95	1926	1993
272842	ERROL	44.78	71.13	1948	1993
272999	FIRST CONN LAKE	45.08	71.28	1948	1993
273024	FITZWILLIAM 2 W	42.78	72.18	1948	1992
273182	FRANKLIN FALLS DAM	43.47	71.65	1948	1993
273530	GRAFTON	43.57	71.95	1955	1993
273850	HANOVER	43.70	72.28	1926	1993
274399	KEENE	42.92	72.27	1926	1993
274475	LAKEPORT	43.55	71.47	1948	1982
274480	LAKEPORT 2	43.55	71.47	1948	1993
274556	LANCASTER	44.48	71.58	1948	1993
274656	LEBANON FAA AIRPORT	43.63	72.32	1948	1993
275013	MACDOWELL DAM	42.90	71.98	1950	1993
275150	MARLOW	43.12	72.20	1951	1993
275211	MASSABESIC LAKE	42.98	71.40	1948	1993
275400	MILAN 7 NNW	44.67	71.22	1948	1981
275412	MILFORD	42.82	71.65	1948	1993
275500	MONROE 5 NNE	44.32	72.00	1948	1993
275629	MOUNT SUNAPEE	43.33	72.08	1957	1993

Station number	Station name	Latitude (degrees)	Longitude (degrees)	Record begins	Record ends
NEW HAMPSHIRE (continued)					
275712	NASHUA 2 NNW	42.78	71.48	1948	1993
275868	NEWPORT	43.37	72.18	1948	1993
276234	NORTH STRATFORD	44.75	71.63	1948	1993
276550	OTTER BROOK LAKE	42.95	72.23	1958	1993
276697	PETERBORO 2 S	42.85	71.95	1948	1992
276818	PINKHAM NOTCH	44.27	71.25	1948	1993
276945	PLYMOUTH 1 E	43.77	71.67	1951	1993
277967	SOUTH DANBURY	43.50	71.90	1948	1981
278081	SOUTH LYNDEBORO	42.88	71.78	1948	1993
278539	SURRY MOUNTAIN LAKE	43.00	72.32	1948	1993
279474	WEST RUMNEY	43.80	71.85	1948	1986
279940	WOODSTOCK	43.98	71.68	1948	1980
279966	YORK POND	44.50	71.33	1948	1993
NEW JERSEY					
280311	ATLANTIC CITY WSO AP	39.45	74.57	1958	1993
280325	ATLANTIC CITY	39.38	74.43	1948	1993
280346	AUDUBON	39.88	75.08	1950	1990
280690	BELLEPLAIN STA FOREST	39.25	74.87	1926	1993
280729	BELVIDERE	40.83	75.08	1926	1981
280907	BOONTON 1 SE	40.90	74.40	1926	1993
280927	BOUND BROOK 2 W	40.55	74.57	1956	1993
281327	CANISTEAR RESERVOIR	41.12	74.50	1948	1993
281335	CANOE BROOK	40.75	74.35	1931	1993
281351	CAPE MAY 2 NW	38.95	74.93	1948	1993
281582	CHARLOTTEBURG RESERVOIR	41.03	74.43	1926	1993
282644	ELIZABETH	40.67	74.23	1931	1970
282768	ESSEX FELLS SERV BLDG	40.83	74.28	1949	1993
283029	FLEMINGTON	40.50	74.87	1926	1993
283181	FREEHOLD	40.27	74.25	1931	1987
283291	GLASSBORO	39.70	75.12	1948	1993
283516	GREENWOOD LAKE	41.13	74.33	1948	1993
283662	HAMMONTON 2 NNE	39.65	74.80	1948	1990
283951	HIGHTSTOWN 2 W	40.27	74.57	1931	1993
284229	INDIAN MILLS 2 W	39.80	74.78	1926	1993
284339	JERSEY CITY	40.73	74.05	1948	1993
284635	LAMBERTVILLE	40.37	74.95	1931	1993
284735	LAYTON 3 NW	41.25	74.85	1926	1962
284887	LITTLE FALLS	40.88	74.23	1948	1993
284987	LONG BRANCH OAKHURST	40.27	74.00	1928	1993
285003	LONG VALLEY	40.78	74.78	1931	1993
285104	MAHWAH	41.10	74.17	1956	1988
285346	MAYS LANDING 1 W	39.45	74.75	1948	1993
285503	MIDLAND PARK	40.98	74.15	1948	1993
285581	MILLVILLE FAA AIRPORT	39.37	75.07	1948	1993
285728	MOORESTOWN	39.97	74.97	1926	1993
285769	MORRIS PLAINS 1 W	40.83	74.50	1948	1990
286026	NEWARK WSO AP	40.70	74.17	1948	1993
286062	NEW BRUNSWICK EXP STN	40.47	74.43	1912	1968
286146	NEW MILFORD	40.95	74.03	1948	1993
286177	NEWTON ST PAUL'S ABBEY	41.03	74.80	1948	1993
286460	OAK RIDGE RESERVOIR	41.03	74.50	1948	1993
286843	PEMBERTON 3 S	39.93	74.70	1948	1993
286974	PHILLIPSBURG	40.68	75.18	1931	1977
287079	PLAINFIELD	40.60	74.40	1931	1993
287131	PLEASANTVILLE 1 N	39.42	74.52	1926	1958
287328	PRINCETON WATER WORKS	40.33	74.67	1949	1986
287393	RAHWAY	40.60	74.27	1948	1993
287587	RINGWOOD	41.13	74.27	1948	1993
288194	SOMERVILLE 3 NW	40.60	74.63	1931	1993
288402	SPLIT ROCK POND	40.97	74.47	1948	1993
288644	SUSSEX 1 SE	41.20	74.60	1948	1993
288816	TOMS RIVER	39.95	74.22	1948	1993
288883	TRENTON	40.22	74.77	1931	1993
288899	TUCKERTON	39.60	74.35	1948	1993
289187	WANAQUE RAYMOND DAM	41.05	74.30	1948	1993
289363	WERTSVILLE	40.45	74.80	1956	1991
289608	WEST WHARTON	40.90	74.60	1959	1990
289832	WOODCLIFF LAKE	41.02	74.05	1948	1993
289910	WOODSTOWN	39.65	75.32	1948	1993
NEW YORK					
300023	ADDISON	42.10	77.22	1948	1991
300042	ALBANY WSO AP	42.75	73.80	1938	1993
300047	ALBANY	42.65	73.75	1922	1970
300055	ALBION 2 NE	43.28	78.17	1948	1993
300063	ALCOVE DAM	42.47	73.93	1948	1993
300085	ALFRED	42.25	77.78	1926	1993
300093	ALLEGANY STATE PARK	42.10	78.75	1948	1993
300183	ANGELICA	42.30	78.02	1926	1993
300220	ARCADE	42.53	78.42	1948	1993
300254	ARKVILLE 2 W	42.13	74.65	1948	1993
300321	AUBURN 2 NE	42.93	76.53	1926	1993
300331	AURORA RESEARCH FARM	42.73	76.65	1956	1993
300343	AVON	42.92	77.75	1948	1993
300360	BAINBRIDGE	42.28	75.45	1948	1993
300379	BALDWINSVILLE	43.15	76.33	1948	1993
300443	BATAVIA	42.98	78.18	1948	1993
300448	BATH	42.35	77.35	1953	1993
300452	BATTENVILLE	43.10	73.43	1955	1993
300500	BEAVER FALLS	43.88	75.43	1948	1993

Table 3 (continued)

Station number	Station name	Latitude (degrees)	Longitude (degrees)	Record begins	Record ends
NEW YORK (continued)					
300608	BENNETTS BRIDGE	43.53	75.95	1948	1993
300641	BERLIN 5 S	42.62	73.37	1955	1993
300668	BIG MOOSE 3 SE	43.80	74.87	1948	1993
300687	BINGHAMTON WSO AP	42.22	75.98	1951	1993
300691	BINGHAMTON	42.10	75.92	1926	1968
300785	BOONVILLE 2 SSW	43.45	75.35	1949	1993
300870	BREWERTON LOCK 23	43.23	76.20	1948	1993
300889	BRIDGEHAMPTON	40.95	72.30	1930	1993
300929	BROADALBIN	43.05	74.20	1948	1993
300937	BROCKPORT 2 NW	43.25	77.97	1950	1993
301012	BUFFALO WSCMO AP	42.93	78.73	1922	1993
301110	CAMDEN 2 NW	43.37	75.78	1948	1993
301152	CANANDAIGUA 3 S	42.85	77.28	1948	1993
301160	CANASTOTA	43.08	75.77	1948	1983
301168	CANDOR	42.23	76.33	1948	1993
301173	CANISTEO 1 S	42.27	77.62	1949	1993
301185	CANTON 4 SE	44.57	75.12	1922	1993
301207	CARMEL 1 SW	41.42	73.70	1926	1993
301265	CAYUGA LOCK 1	42.95	76.73	1948	1993
301387	CHASM FALLS	44.75	74.22	1948	1993
301401	CHAZY	44.88	73.43	1926	1993
301413	CHEMUNG	42.00	76.63	1948	1993
301424	CHEPACHET	42.92	75.12	1957	1993
301436	CHERRY VALLEY 2 NNE	42.82	74.73	1949	1993
301492	CINCINNATUS	42.53	75.90	1948	1993
301521	CLARYVILLE	41.92	74.57	1948	1993
301580	CLYDE LOCK 26	43.07	76.83	1948	1993
301593	COBLESKILL 2	42.68	74.48	1955	1986
301623	COLDEN 1 N	42.67	78.68	1957	1993
301664	COLTON 2 N	44.58	74.95	1948	1993
301708	CONKLINGVILLE DAM	43.32	73.93	1948	1993
301752	COOPERSTOWN	42.70	74.92	1926	1993
301799	CORTLAND	42.60	76.18	1948	1993
301966	DANNEMORA	44.72	73.72	1926	1993
301974	DANSVILLE	42.57	77.70	1941	1993
302036	DELHI 2 SE	42.25	74.90	1926	1993
302060	DEPOSIT	42.07	75.43	1962	1993
302079	DE RUYTER 4 N	42.82	75.88	1948	1984
302129	DOBBS FERRY	41.02	73.87	1948	1993
302137	DOLGEVILLE	43.08	74.77	1948	1993
302169	DOWNSVILLE DAM	42.08	74.97	1959	1993
302234	EAGLE BAY 3 SE	43.75	74.77	1953	1993
302554	ELIZABETHTOWN	44.22	73.60	1948	1993
302574	ELLENBURG DEPOT	44.90	73.80	1948	1993
302582	ELLENVILLE	41.72	74.40	1948	1993
302610	ELMIRA 2 SE	42.08	76.78	1926	1993
302829	FISHS EDDY	41.97	75.18	1953	1993
303010	FRANKFORT LOCK 19	43.07	75.12	1948	1993
303025	FRANKLINVILLE 1 SSW	42.33	78.47	1949	1993
303033	FREDONIA	42.45	79.30	1926	1993
303050	FREEVILLE 1 NE	42.52	76.33	1948	1993
303076	FROST VALLEY	41.97	74.55	1948	1981
303138	GARDINER	41.68	74.15	1956	1987
303144	GARDNERVILLE	41.35	74.48	1956	1993
303177	GENEVA EXP STATION	42.88	77.00	1921	1968
303259	GLENHAM	41.52	73.93	1948	1993
303284	GLENS FALLS FARM	43.33	73.73	1948	1993
303294	GLENS FALLS FAA AP	43.35	73.62	1948	1993
303319	GLOVERSVILLE	43.05	74.33	1948	1993
303346	GOUVERNEUR 3 NW	44.35	75.52	1948	1993
303354	GOWANDA PSYCHIATRIC CTR	42.48	78.93	1948	1993
303360	GRAFTON	42.78	73.47	1950	1993
303365	GRAHAMSVILLE	41.85	74.53	1948	1993
303444	GREENE	42.32	75.77	1948	1993
303464	GREENPORT POWER HOUSE	41.10	72.37	1958	1993
303507	GRIFFISS AIR FORCE BASE	43.23	75.40	1961	1993
303722	HASKINVILLE	42.42	77.57	1948	1993
303773	HEMLOCK	42.78	77.62	1926	1993
303851	HIGHMARKET	43.58	75.52	1948	1993
303889	HINCKLEY 2 NE	43.32	75.12	1948	1993
303961	HOOKER 4 N	43.75	75.73	1948	1993
303970	HOPE	43.30	74.25	1948	1993
303983	HORNELL ALMOND DAM	42.35	77.70	1950	1993
304025	HUDSON CORRECTIONAL FAC	42.25	73.80	1957	1993
304102	INDIAN LAKE 2 SW	43.75	74.28	1948	1993
304174	ITHACA CORNELL UNIV	42.45	76.45	1893	1993
304206	JAMESTOWN	42.10	79.25	1926	1960
304473	KORTRIGHT 2	42.42	74.80	1960	1993
304525	LAKE DELAWARE	42.25	74.90	1948	1981
304555	LAKE PLACID 2 S	44.25	73.98	1948	1993
304647	LAWRENCEVILLE	44.75	74.65	1948	1993
304731	LIBERTY 1 NE	41.80	74.73	1950	1993
304772	LINDLEY	42.03	77.13	1953	1993
304791	LITTLE FALLS CITY RES	43.07	74.87	1926	1993
304796	LITTLE FALLS MILL ST	43.03	74.87	1926	1993
304808	LITTLE VALLEY	42.25	78.80	1948	1993
304836	LOCKE 2 W	42.67	76.47	1948	1993
304844	LOCKPORT 2 NE	43.18	78.65	1926	1993
304849	LOCKPORT 4 NE	43.20	78.63	1961	1993
304912	LOWVILLE	43.80	75.48	1926	1993
304944	LYONS FALLS	43.62	75.37	1948	1993
304952	MACEDON	43.07	77.30	1948	1993
305032	MANORKILL	42.38	74.32	1948	1993
305134	MASSENA FAA AP	44.93	74.85	1948	1993
305171	MAYS POINT LOCK 25	43.00	76.77	1948	1993
305276	MERRIMAN DAM	41.80	74.43	1961	1993
305310	MIDDLETOWN 2 NW	41.45	74.45	1951	1993
305334	MILLBROOK	41.85	73.62	1948	1993
305377	MINEOLA	40.73	73.63	1948	1993
305426	MOHONK LAKE	41.77	74.15	1948	1993
305512	MORRISVILLE 3 S	42.85	75.65	1926	1993
305597	MOUNT MORRIS 2 W	42.73	77.90	1948	1993
305604	MT PLEASANT FARM	42.45	76.37	1957	1993
305639	NARROWSBURG 4 SE	41.57	75.02	1956	1993
305673	NEW ALBION	42.30	78.90	1948	1993
305679	NEWARK	43.05	77.08	1948	1993
305687	NEW BERLIN	42.62	75.33	1948	1993
305714	NEWCOMB 3 E	43.97	74.10	1959	1993
305743	NEW KINGSTON	42.23	74.70	1948	1989
305751	NEW LONDON LOCK 22	43.22	75.65	1948	1993
305796	NEW YORK AVE V BROOKLYN	40.60	73.98	1948	1993
305801	N Y CNTRL PK WSFO CI	40.78	73.97	1876	1993
305804	NEW YORK LAUREL HILL	40.73	73.93	1922	1983
305811	N Y LAGUARDIA WSO AP	40.77	73.90	1948	1993
305821	N Y WESTERLEIGH STAT IS	40.60	74.17	1948	1992
305869	NORFOLK	44.80	75.00	1948	1993
305925	NORTH CREEK	43.67	73.90	1948	1993
306062	NORTHVILLE	43.23	74.17	1955	1993
306085	NORWICH	42.53	75.53	1926	1993
306164	OGDENSBURG 4 NE	44.73	75.43	1926	1993
306184	OLD FORGE	43.72	74.98	1948	1993
306196	OLEAN	42.08	78.45	1948	1993
306314	OSWEGO EAST	43.47	76.50	1926	1993
306411	PARISHVILLE 1 WNW	44.63	74.83	1948	1981
306441	PATCHOGUE 2 N	40.80	73.02	1948	1993
306464	PAVILION	42.88	78.03	1956	1992
306510	PENN YAN	42.67	77.07	1948	1984
306538	PERU 2 WSW	44.57	73.57	1948	1993
306567	PHOENICIA	42.08	74.33	1948	1993
306623	PISECO	43.45	74.53	1948	1993
306659	PLATTSBURGH AFB	44.65	73.47	1948	1993
306674	PLEASANTVILLE	41.13	73.77	1948	1993
306745	PORTAGEVILLE	42.57	78.05	1956	1993
306774	PORT JERVIS	41.38	74.68	1926	1993
306817	POUGHKEEPSIE	41.68	73.93	1928	1971
306820	POUGHKEEPSIE FAA AP	41.63	73.88	1948	1993
306831	PRATTSBURG 2 NW	42.53	77.30	1948	1986
306839	PRATTSVILLE 3 N	42.35	74.45	1948	1993
307134	RIVERHEAD RESEARCH FARM	40.97	72.72	1948	1993
307167	ROCHESTER WSO AP	43.12	77.67	1926	1993
307195	ROCKDALE	42.38	75.40	1948	1993
307274	ROSENDALE 2 E	41.85	74.05	1956	1993
307317	ROXBURY	42.28	74.57	1926	1972
307329	RUSHFORD 1 W	42.40	78.27	1954	1993
307348	SABATTIS 3 NE	44.12	74.67	1948	1979
307405	SALEM	43.17	73.32	1948	1993
307413	SALISBURY	43.17	74.87	1926	1975
307484	SARATOGA SPRINGS 4 SW	43.03	73.82	1955	1993
307497	SCARSDALE	40.98	73.80	1948	1991
307513	SCHENECTADY	42.83	73.92	1943	1985
307633	SETAUKET	40.97	73.10	1926	1993
307705	SHERBURNE 2 S	42.65	75.48	1948	1993
307713	SHERMAN	42.17	79.60	1951	1993
307721	SHOKAN BROWN STATION	41.95	74.20	1953	1993
307772	SINCLAIRVILLE	42.27	79.27	1959	1993
307780	SKANEATELES	42.95	76.43	1948	1993
307799	SLIDE MOUNTAIN	42.02	74.42	1948	1993
307818	SMITHS BASIN	43.35	73.50	1948	1993
307842	SODUS CENTER	43.20	77.02	1948	1993
308058	SOUTH WALES EMERY PARK	42.72	78.60	1931	1982
308088	SPENCER 1 SW	42.18	76.50	1948	1993
308160	STAMFORD	42.40	74.63	1948	1993
308248	STILLWATER RESERVOIR	43.88	75.03	1948	1993
308322	SUFFERN WATER WORKS	41.12	74.15	1956	1993
308383	SYRACUSE WSO AP	43.12	76.12	1922	1993
308455	THERESA	44.22	75.80	1948	1979
308578	TRENTON FALLS	43.27	75.15	1948	1993
308586	TRIBES HILL	42.95	74.28	1948	1993
308594	TROUPSBURG 4 NE	42.07	77.48	1948	1993
308600	TROY LOCK AND DAM 2	42.75	73.68	1932	1993
308631	TUPPER LAKE SUNMOUNT	44.23	74.43	1948	1993
308737	UTICA FAA AP	43.15	75.38	1950	1993
308739	UTICA 3 W	43.10	75.28	1948	1991
308902	WALDEN 2 NE	41.57	74.17	1926	1959
308936	WALTON	42.17	75.13	1956	1993
308944	WANAKENA RANGER SCHOOL	44.15	74.90	1926	1993
308959	WARRENSBURG 4 NW	43.55	73.80	1948	1993
308962	WARSAW 5 SW	42.68	78.20	1952	1993
308987	WATERLOO	42.90	76.87	1948	1993
309000	WATERTOWN	43.97	75.87	1926	1993
309005	WATERTOWN FAA AP	44.00	76.02	1949	1993
309072	WELLSVILLE	42.12	77.95	1956	1993

Station number	Station name	Latitude (degrees)	Longitude (degrees)	Record begins	Record ends
NEW YORK (continued)					
309189	WESTFIELD 3 SW	42.28	79.60	1948	1993
309250	WEST MILTON	43.03	73.93	1955	1986
309292	WEST POINT	41.38	73.97	1948	1993
309389	WHITEHALL	43.55	73.40	1932	1993
309425	WHITESVILLE	42.03	77.77	1954	1993
309437	WHITNEY POINT	42.35	75.97	1944	1993
309507	WILSON 2 NE	43.32	78.80	1948	1993
309516	WINDHAM 2 E	42.30	74.22	1948	1993
309544	WOLCOTT 3 NW	43.25	76.87	1948	1993
OHIO					
330058	AKRON-CANTON WSO AP	40.92	81.43	1948	1993
330083	ALEXANDRIA 4 WSW	40.08	82.68	1948	1988
330141	AMESVILLE	39.40	81.97	1953	1988
330256	ASHLAND 2 SW	40.83	82.35	1936	1993
330264	ASHTABULA	41.85	80.80	1951	1993
330274	ATHENS 5 NW	39.38	82.18	1948	1980
330279	ATHENS	39.33	82.10	1948	1991
330298	ATWOOD LAKE	40.52	81.28	1949	1987
330430	BARNESVILLE-FRIENDS SCH	39.98	81.15	1940	1993
330493	BEACH CITY LAKE	40.63	81.57	1948	1987
330563	BELLEFONTAINE SEWAGE	40.35	83.77	1936	1993
330823	BOLIVAR DAM	40.65	81.43	1949	1987
330854	BOURNEVILLE 1 SSW	39.27	83.17	1955	1986
330862	BOWLING GREEN SEWAGE PL	41.38	83.62	1936	1993
331057	BUCKEYE LAKE 2 WNW	39.93	82.52	1956	1993
331072	BUCYRUS	40.82	82.97	1936	1993
331152	CADIZ	40.27	81.00	1903	1993
331178	CALDWELL 6 NW	39.82	81.60	1936	1990
331197	CAMBRIDGE WATER PLANT	40.02	81.58	1948	1993
331245	CANFIELD 1 S	41.02	80.77	1917	1993
331315	CARROLLTON 3 NNE	40.62	81.07	1948	1987
331399	CENTERBURG	40.30	82.70	1948	1981
331404	CENTERBURG 2 SE	40.30	82.65	1950	1993
331458	CHARDON	41.58	81.18	1945	1993
331466	CHARLES MILL LAKE	40.73	82.37	1939	1987
331523	CHILLICOTHE	39.33	82.97	1936	1972
331541	CHIPPEWA LAKE	41.07	81.90	1936	1993
331592	CIRCLEVILLE	39.62	82.95	1942	1993
331642	CLENDENING LAKE	40.27	81.28	1948	1987
331657	CLEVELAND WSO AP	41.42	81.87	1948	1993
331778	COLUMBUS OHIO STN UNIV	40.00	83.02	1900	1957
331781	COLUMBUS SULLIVANT AVE	39.95	83.12	1952	1983
331783	COLUMBUS VLY CROSSING	39.90	82.90	1948	1993
331786	COLUMBUS WSO AP	40.00	82.88	1948	1993
331858	COOPERDALE	40.22	82.07	1948	1993
331890	COSHOCTON SEWAGE PLANT	40.25	81.87	1936	1993
331905	COSHOCTON AGR RSCH STN	40.37	81.80	1956	1993
332119	DELAWARE	40.28	83.07	1936	1993
332124	DELAWARE LAKE	40.37	83.07	1949	1987
332251	DORSET	41.68	80.67	1956	1993
332272	DOVER DAM	40.57	81.42	1949	1987
332599	ELYRIA 3 E	41.38	82.07	1949	1993
332626	ENTERPRISE	39.57	82.48	1948	1993
332786	FINDLAY FAA AP	41.02	83.67	1948	1993
332791	FINDLAY SEWAGE PLANT	41.05	83.67	1936	1993
332956	FREDERICKTOWN 4 S	40.42	82.53	1948	1993
332974	FREMONT	41.33	83.12	1948	1993
333021	GALION WATER WORKS	40.72	82.80	1948	1993
333029	GALLIPOLIS	38.82	82.18	1936	1993
333393	GREER	40.52	82.20	1948	1993
333730	HIGGINSPORT	38.78	83.97	1948	1982
333758	HILLSBORO	39.20	83.62	1900	1993
333780	HIRAM	41.30	81.15	1900	1993
333874	HOYTVILLE 2 NE	41.22	83.77	1952	1993
333915	HUNTSVILLE 3 N	40.48	83.82	1948	1993
333971	IRONTON	38.53	82.68	1900	1982
333987	IRWIN	40.12	83.48	1941	1993
334004	JACKSON 2 NW	39.07	82.65	1936	1991
334189	KENTON	40.65	83.60	1900	1993
334363	LAKEVIEW 3 NE	40.52	83.88	1948	1983
334383	LANCASTER 2 NW	39.73	82.63	1936	1993
334409	LA RUE	40.58	83.38	1948	1991
334434	LAURELVILLE	39.47	82.73	1951	1993
334473	LEESVILLE LAKE	40.47	81.20	1949	1987
334616	LITHOPOLIS 2 S	39.78	82.82	1951	1988
334681	LONDON WATER WORKS	39.88	83.45	1936	1993
334728	LOUISVILLE	40.83	81.25	1948	1993
334865	MANSFIELD WSO AP	40.82	82.52	1948	1993
334874	MANSFIELD 5 W	40.77	82.62	1948	1993
334924	MARIETTA LOCK 1	39.42	81.45	1948	1993
334942	MARION 2 N	40.62	83.13	1936	1993
334967	MARSHALLVILLE 1 SSW	40.88	81.73	1948	1993
334979	MARYSVILLE	40.23	83.37	1936	1993
335029	MC ARTHUR	39.25	82.48	1957	1993
335041	MC CONNELLSVILLE LOCK 7	39.65	81.85	1900	1993
335199	MIDDLEBOURNE	40.05	81.33	1948	1987
335297	MILLERSBURG	40.55	81.92	1936	1993
335315	MILLPORT 2 NW	40.72	80.90	1936	1993
335356	MINERAL RIDGE WATER WKS	41.15	80.78	1940	1993
335398	MOHAWK DAM	40.35	82.08	1949	1987
OHIO (continued)					
335406	MOHICANVILLE DAM	40.73	82.15	1949	1987
335505	MOSQUITO CREEK LAKE	41.30	80.77	1948	1993
335535	MT GILEAD LAKES PARK	40.55	82.82	1952	1993
335718	NELSONVILLE 1 W	39.47	82.25	1951	1993
335747	NEWARK WATER WORKS	40.08	82.42	1936	1993
335857	NEW LEXINGTON 2 NW	39.73	82.22	1942	1993
335894	NEW PHILADELPHIA	40.50	81.45	1948	1993
335904	NEW PHILADELPHIA 1 A	40.50	81.45	1949	1990
335947	NEW STRAITSVILLE	39.58	82.25	1951	1990
336118	NORWALK WST WTR TRT PL	41.27	82.62	1900	1993
336136	NORWICH 1 E	39.98	81.78	1948	1986
336196	OBERLIN	41.27	82.22	1936	1993
336389	PAINESVILLE 4 NW	41.75	81.30	1950	1993
336405	PANDORA	40.95	83.97	1949	1993
336600	PHILO 3 SW	39.83	81.92	1948	1993
336616	PIEDMONT LAKE	40.18	81.22	1949	1987
336630	PIKETON AEC PUMP STN	39.07	83.02	1948	1993
336702	PLEASANT HILL LAKE	40.62	82.33	1949	1987
336729	PLYMOUTH 2 WSW	40.98	82.70	1935	1982
336781	PORTSMOUTH	38.75	82.88	1936	1993
336786	PORTSMOUTH US GRANT BR	38.73	83.00	1948	1993
336861	PROSPECT	40.45	83.18	1948	1993
336882	PUT IN BAY PERRY MON	41.65	82.80	1936	1993
336949	RAVENNA 2 S	41.13	81.28	1948	1993
337120	RIPLEY EXP FARM	38.78	83.80	1959	1993
337255	ROSEVILLE	39.82	82.07	1961	1993
337447	SANDUSKY	41.45	82.72	1936	1993
337476	SAYRE	39.68	82.05	1951	1989
337538	SEDALIA	39.73	83.48	1948	1993
337559	SENECAVILLE LAKE	39.92	81.43	1940	1987
337932	SPRINGFIELD WW TREAT PL	39.92	83.85	1952	1988
338025	STEUBENVILLE	40.38	80.63	1941	1993
338148	SUMMERFIELD 2 NE	39.82	81.30	1948	1987
338240	TAPPAN LAKE	40.35	81.23	1949	1987
338313	TIFFIN	41.12	83.17	1936	1993
338357	TOLEDO EXPRESS WSO AP	41.58	83.80	1955	1993
338366	TOLEDO BLADE	41.65	83.53	1948	1993
338378	TOM JENKINS LAKE	39.55	82.07	1953	1987
338534	UPPER SANDUSKY	40.83	83.28	1936	1993
338552	URBANA SEWAGE PLANT	40.10	83.78	1936	1993
338560	UTICA	40.25	82.45	1948	1993
338769	WARREN 3 S	41.20	80.82	1936	1993
338794	WASHINGTON COURT HOUSE	39.52	83.42	1936	1993
338830	WAVERLY	39.12	82.98	1936	1993
338951	WESTERVILLE	40.13	82.95	1952	1993
339211	WILLS CREEK LAKE	40.15	81.85	1949	1987
339219	WILMINGTON 3 N	39.48	83.82	1936	1993
339312	WOOSTER EXP STATION	40.78	81.92	1900	1993
339361	XENIA 6 SSE	39.62	83.90	1936	1993
339406	YOUNGSTOWN WSO AP	41.25	80.67	1948	1993
339417	ZANESVILLE FAA AP	39.95	81.90	1946	1993
PENNSYLVANIA					
360022	ACMETONIA LOCK 3	40.53	79.82	1948	1993
360106	ALLENTOWN WSO AP	40.65	75.43	1948	1993
360134	ALTOONA HORSESHOE CURVE	40.50	78.48	1926	1967
360313	AUSTINBURG 2 W	42.00	77.53	1948	1981
360355	BAKERSTOWN 3 WNW	40.65	79.98	1948	1990
360409	BARNES	41.67	79.03	1948	1991
360457	BEAR GAP	40.83	76.50	1948	1993
360475	BEAVER FALLS 1 NE	40.77	80.32	1948	1993
360482	BEAVERTOWN 1 NE	40.77	77.15	1948	1993
360488	BECHTELSVILLE 1 ENE	40.38	75.62	1958	1993
360629	BETHLEHEM	40.62	75.38	1948	1981
360634	BETHLEHEM LEHIGH UNIV	40.60	75.37	1926	1964
360763	BLOSERVILLE 1 N	40.27	77.37	1948	1993
360821	BOSWELL 1 SW	40.15	79.03	1960	1991
360861	BRADDOCK LOCK 2	40.40	79.87	1948	1993
360865	BRADFORD FAA AIRPORT	41.80	78.63	1957	1993
360867	BRADFORD CNTRL FIRE STN	41.95	78.65	1948	1993
360868	BRADFORD 4 W RES 1	41.95	78.73	1948	1993
361002	BROOKVILLE FAA AIRPORT	41.15	79.10	1926	1962
361033	BRUCETON 1 S	40.30	79.98	1948	1993
361087	BUFFALO MILLS	39.95	78.65	1948	1993
361105	BURGETTSTOWN 2 W	40.38	80.43	1948	1989
361130	BUTLER	40.87	79.90	1927	1965
361234	CARLISLE	40.20	77.22	1926	1980
361255	CARROLLTOWN 2 SSE	40.58	78.70	1948	1990
361301	CEDAR RUN	41.52	77.45	1948	1986
361342	CHADDS FORD	39.87	75.62	1948	1993
361354	CHAMBERSBURG 1 ESE	39.93	77.63	1948	1993
361377	CHARLEROI LOCK 4	40.15	79.90	1948	1993
361480	CLARENCE	41.05	77.93	1950	1993
361485	CLARION 3 SW	41.20	79.43	1948	1993
361505	CLAUSSVILLE	40.62	75.65	1948	1993
361512	CLAYSVILLE 3 W	40.12	80.47	1926	1971
361519	CLEARFIELD	41.02	78.45	1926	1993
361534	CLERMONT 4 NW	41.73	78.53	1961	1992
361589	COATESVILLE 1 SW	39.97	75.83	1948	1982
361705	CONFLUENCE 1 SW DAM	39.80	79.37	1948	1993
361710	CONFLUENCE 1 NW	39.83	79.37	1948	1981

Table 3 (continued)

Station number	Station name	Latitude (degrees)	Longitude (degrees)	Record begins	Record ends
PENNSYLVANIA (continued)					
361737	CONSHOHOCKEN	40.07	75.32	1948	1993
361749	COOKSBURG	41.33	79.22	1955	1991
361773	CORAOPOLIS NEVILLE IS	40.50	80.08	1948	1989
361790	CORRY	41.92	79.63	1926	1993
361806	COUDERSPORT 4 NW	41.83	78.07	1956	1986
361833	COVINGTON 2 WSW	41.73	77.12	1956	1993
361881	CREEKSIDE	40.68	79.20	1948	1992
362013	DANVILLE	40.97	76.62	1948	1993
362108	DERRY 4 SW	40.30	79.33	1926	1993
362116	DEVAULT 1 W	40.08	75.55	1951	1988
362183	DONEGAL 2 NW	40.13	79.40	1948	1993
362190	DONORA 1 SW	40.17	79.87	1926	1993
362221	DOYLESTOWN	40.30	75.13	1948	1993
362260	DU BOIS FAA AP	41.18	78.90	1962	1993
362343	EAGLES MERE	41.40	76.58	1948	1987
362466	EBENSBURG	40.48	78.72	1926	1963
362644	ENGLISH CENTER	41.43	77.28	1948	1984
362662	EPHRATA	40.17	76.17	1948	1984
362671	EQUINUNK 2 WNW	41.87	75.27	1957	1993
362682	ERIE WSO AP	42.08	80.18	1926	1993
362721	EVERETT	40.02	78.37	1943	1993
362814	FARRELL-SHARON	41.22	80.52	1948	1980
362942	FORD CITY 4 S DAM	40.72	79.50	1943	1993
363028	FRANKLIN	41.38	79.82	1926	1993
363056	FREELAND	41.02	75.90	1926	1989
363130	GALETON	41.73	77.63	1948	1993
363200	GEORGE SCHOOL	40.22	74.93	1926	1978
363218	GETTYSBURG	39.83	77.23	1926	1982
363311	GLEN HAZEL 2 NE DAM	41.57	78.60	1953	1993
363321	GLENMOORE	40.10	75.78	1959	1993
363343	GLENWILLARD DASH DAM	40.55	80.22	1948	1993
363394	GOULDSBORO	41.25	75.45	1948	1987
363437	GRATERFORD 1 E	40.23	75.43	1960	1993
363503	GREENSBORO LOCK 7	39.78	79.92	1948	1993
363526	GREENVILLE 2 NE	41.42	80.37	1926	1993
363662	HANOVER	39.80	76.98	1948	1993
363699	HARRISBURG FAA AP	40.22	76.85	1926	1993
363758	HAWLEY	41.48	75.17	1926	1993
364008	HOLLISTERVILLE	41.38	75.43	1948	1993
364019	HOLTWOOD	39.83	76.33	1948	1993
364043	HONESDALE 4 NW	41.62	75.32	1948	1993
364047	HONEY BROOK 1 S	40.08	75.83	1957	1993
364159	HUNTINGDON	40.50	78.02	1926	1974
364166	HUNTSDALE	40.10	77.30	1948	1986
364190	HYNDMAN	39.82	78.73	1948	1993
364214	INDIANA 3 SE	40.60	79.12	1948	1993
364325	JAMESTOWN 2 NW	41.50	80.47	1948	1993
364385	JOHNSTOWN	40.33	78.92	1926	1993
364432	KANE 1 NNE	41.68	78.80	1948	1993
364481	KEGG	39.98	78.72	1951	1991
364611	KITTANNING LOCK 7	40.82	79.53	1951	1993
364672	KRESGEVILLE 2 W	40.90	75.53	1948	1990
364758	LANCASTER 2NE PUMP STN	40.05	76.28	1926	1974
364778	LANDISVILLE 2 NW	40.12	76.43	1952	1993
364853	LAURELTON STATE VILLAGE	40.90	77.22	1948	1993
364873	LAWRENCEVILLE 2 S	41.97	77.13	1926	1974
364934	LEHIGHTON	40.83	75.72	1948	1993
364972	LE ROY	41.68	76.72	1948	1993
364992	LEWISTOWN	40.58	77.58	1948	1993
365104	LOCK HAVEN	41.13	77.42	1926	1977
365160	LONG POND 2 W	41.05	75.50	1948	1993
365336	MADERA	40.83	78.43	1949	1990
365381	MAPLETON DEPOT	40.40	77.93	1948	1993
365390	MARCUS HOOK	39.82	75.42	1948	1993
365408	MARION CENTER 2 SE	40.75	79.03	1948	1993
365470	MATAMORAS	41.37	74.70	1948	1993
365573	MC KEESPORT	40.35	79.87	1948	1993
365606	MEADVILLE 1 S	41.63	80.17	1948	1993
365651	MERCER	41.22	80.23	1950	1993
365662	MERCERSBURG	39.83	77.90	1948	1990
365686	MEYERSDALE 2 SSW	39.78	79.05	1963	1993
365790	MILLHEIM	40.88	77.48	1949	1993
365817	MILLVILLE 2 SW	41.10	76.57	1950	1992
365902	MONTGOMERY LOCK AND DAM	40.65	80.38	1961	1993
365915	MONTROSE	41.83	75.87	1926	1993
365956	MORGANTOWN	40.15	75.90	1951	1986
366055	MOUNT POCONO 2 N	41.15	75.37	1926	1960
366126	MYERSTOWN	40.37	76.30	1948	1993
366151	NATRONA LOCK 4	40.62	79.72	1948	1993
366194	NESHAMINY FALLS	40.15	74.95	1948	1993
366233	NEW CASTLE 1 N	41.02	80.37	1926	1993
366246	NEWELL	40.08	79.90	1926	1980
366289	NEW PARK	39.73	76.50	1948	1993
366297	NEWPORT	40.48	77.13	1948	1992
366310	NEW STANTON 1 SW	40.20	79.63	1952	1993
366326	NEW TRIPOLI 4 E	40.68	75.68	1948	1982
366370	NORRISTOWN	40.12	75.35	1948	1987
366622	ORWELL 2 NW	41.92	76.30	1961	1993
366681	PALM 3 SE	40.38	75.50	1948	1993
366689	PALMERTON	40.80	75.62	1926	1993
366721	PARKER	41.08	79.68	1952	1993
PENNSYLVANIA (continued)					
366762	PAUPACK 2 WNW	41.40	75.23	1948	1993
366889	PHILADELPHIA WSCMO AP	39.88	75.23	1948	1993
366904	PHILADELPHIA SHAWMONT	40.03	75.25	1926	1957
366916	PHILIPSBURG FAA AP	40.90	78.08	1948	1993
366927	PHOENIXVILLE 1 E	40.12	75.50	1948	1992
366993	PITTSBURGH WSCMO2 AP	40.50	80.22	1952	1993
366997	PITTSBURGH WSO CI	40.45	80.00	1926	1979
367029	PLEASANT MOUNT 1 W	41.73	75.45	1948	1993
367116	PORT CLINTON	40.58	76.03	1948	1979
367229	PUTNEYVILLE 2 SE DAM	40.93	79.28	1948	1993
367310	RAYMOND	41.87	77.87	1948	1992
367318	READING WB CITY	40.33	75.97	1926	1973
367409	RENOVO	41.33	77.73	1948	1993
367477	RIDGWAY	41.42	78.75	1926	1993
367727	RUSHVILLE	41.78	76.12	1949	1993
367782	SALINA 3 W	40.52	79.55	1953	1993
367846	SAXTON	40.20	78.25	1948	1993
367863	SCHENLEY LOCK 5	40.68	79.67	1948	1993
367902	SCRANTON	41.42	75.67	1926	1975
367931	SELINSGROVE 2 S	40.77	76.87	1926	1993
367978	SHAMOKIN	40.80	76.55	1948	1993
368073	SHIPPENSBURG	40.05	77.22	1948	1993
368145	SINNEMAHONING	41.32	78.10	1951	1993
368184	SLIPPERY ROCK 1 SSW	41.05	80.07	1949	1993
368244	SOMERSET	40.00	79.08	1949	1993
368249	SOMERSET MAIN ST	40.02	79.08	1926	1958
368308	SOUTH MOUNTAIN	39.85	77.50	1948	1993
368379	SPRING GROVE	39.87	76.87	1948	1993
368449	STATE COLLEGE	40.80	77.87	1926	1993
368560	STOYSTOWN	40.10	78.95	1961	1992
368570	STRAUSSTOWN	40.48	76.18	1948	1993
368596	STROUDSBURG	41.00	75.18	1926	1993
368692	SUSQUEHANNA	41.95	75.60	1948	1993
368758	TAMAQUA	40.78	75.98	1948	1993
368763	TAMAQUA 4 N DAM	40.85	75.98	1948	1993
368873	TIONESTA 2 SE LAKE	41.48	79.43	1948	1993
368888	TITUSVILLE WATER WORKS	41.63	79.70	1954	1993
368893	TOBYHANNA	41.18	75.42	1961	1993
368905	TOWANDA 1 ESE	41.75	76.42	1926	1993
368959	TROY 1 NE	41.78	76.78	1951	1993
369042	UNION CITY FILT PLANT	41.90	79.82	1950	1993
369050	UNIONTOWN 1 NE	39.92	79.72	1926	1993
369128	VANDERGRIFT	40.60	79.55	1948	1988
369298	WARREN	41.85	79.15	1926	1993
369367	WAYNESBURG 1 E	39.90	80.17	1948	1993
369408	WELLSBORO 3 S	41.70	77.27	1926	1993
369464	WEST CHESTER 1 W	39.97	75.63	1948	1991
369507	WEST HICKORY	41.58	79.40	1952	1993
369655	WHITESBURG	40.73	79.40	1948	1993
369702	WILKES-BARRE	41.23	75.88	1948	1993
369714	WILLIAMSBURG	40.45	78.20	1949	1989
369728	WILLIAMSPORT WSO AP	41.25	76.92	1948	1993
369823	WOLFSBURG	40.05	78.53	1950	1993
369933	YORK 3 SSW PUMP STN	39.92	76.75	1926	1993
369950	YORK HAVEN	40.12	76.72	1948	1993
369995	ZIONSVILLE 3 SE	40.47	75.45	1950	1993
RHODE ISLAND					
370896	BLOCK ISLAND WSO AP	41.17	71.58	1948	1993
374266	KINGSTON	41.48	71.53	1926	1993
375215	NEWPORT	41.52	71.32	1957	1993
376698	PROVIDENCE WSO AP	41.73	71.43	1948	1993
379423	WOONSOCKET	41.98	71.50	1948	1993
VERMONT					
430499	BELLOWS FALLS	43.13	72.45	1948	1993
430661	BETHEL 4 N	43.88	72.63	1958	1993
431081	BURLINGTON WSO AP	44.47	73.15	1920	1993
431213	CANAAN	45.00	71.53	1948	1993
431243	CAVENDISH	43.38	72.60	1948	1993
431360	CHELSEA	43.98	72.45	1948	1993
431433	CHITTENDEN	43.70	72.95	1948	1993
431580	CORNWALL	43.95	73.22	1926	1993
431786	DORSET 1 S	43.25	73.10	1948	1993
432769	ENOSBURG FALLS	44.92	72.82	1948	1993
433341	GILMAN	44.42	71.72	1948	1993
434052	HUNTINGTON CENTER	44.28	72.97	1955	1993
434882	MANCHESTER	43.17	73.07	1948	1992
435278	MONTPELIER FAA AP	44.20	72.57	1948	1993
435416	MOUNT MANSFIELD	44.53	72.82	1954	1993
435542	NEWPORT	44.93	72.20	1930	1993
435733	NORTHFIELD	44.17	72.65	1926	1974
436335	PERU	43.25	72.90	1948	1993
436761	READSBORO 1 SE	42.75	72.93	1948	1993
436893	ROCHESTER	43.85	72.80	1948	1993
436995	RUTLAND	43.60	72.97	1948	1993
437054	SAINT JOHNSBURY	44.42	72.02	1926	1993
437098	SALISBURY	43.93	73.10	1948	1993
437152	SEARSBURG STATION	42.87	72.92	1948	1993
437617	SOUTH LONDONDERRY	43.18	72.82	1948	1984
437646	SOUTH NEWBURY	44.05	72.08	1948	1993

Station number	Station name	Latitude (degrees)	Longitude (degrees)	Record begins	Record ends
VERMONT (continued)					
438556	UNION VILLAGE DAM	43.80	72.27	1950	1993
438600	VERNON	42.77	72.52	1948	1993
438644	WAITSFIELD 2 WSW	44.18	72.85	1955	1993
438815	WATERBURY 2 SSE	44.32	72.75	1958	1992
439099	WEST BURKE	44.65	71.98	1948	1993
439735	WHITINGHAM 1 W	42.80	72.92	1948	1993
439984	WOODSTOCK 2 WSW	43.62	72.55	1948	1987
VIRGINIA					
440135	ALLISONIA 2 S	36.90	80.75	1952	1993
440166	ALTAVISTA	37.10	79.30	1948	1993
440193	AMISSVILLE	38.68	78.02	1948	1982
440243	APPOMATTOX	37.37	78.83	1948	1993
440327	ASHLAND	37.75	77.48	1948	1993
440385	BACK BAY WILDLIFE RFG	36.67	75.92	1953	1993
440551	BEDFORD	37.35	79.52	1948	1993
440670	BERRYVILLE	39.15	77.98	1948	1987
440720	BIG MEADOWS	38.52	78.43	1948	1993
440766	BLACKSBURG 3 SE	37.18	80.42	1952	1993
440792	BLAND	37.10	81.10	1951	1993
440993	BREMO BLUFF	37.70	78.30	1948	1993
441082	BROOKNEAL	37.03	78.95	1950	1986
441121	BUCHANAN	37.53	79.68	1930	1993
441136	BUCKINGHAM	37.55	78.55	1948	1993
441159	BUENA VISTA	37.73	79.35	1948	1993
441209	BURKES GARDEN	37.08	81.33	1948	1993
441585	CHARLOTTE COURT H 3 W	37.07	78.70	1948	1993
441593	CHARLOTTESVILLE 2 W	38.03	78.52	1948	1993
441598	CHARLOTTESVILLE 1 W	38.03	78.52	1930	1971
441606	CHASE CITY	36.83	78.47	1949	1993
441614	CHATHAM	36.82	79.40	1930	1993
441746	CLARKSVILLE	36.62	78.57	1948	1993
441801	CLIFTON FORGE	37.82	79.80	1948	1983
441929	COLUMBIA 2 SSE	37.73	78.15	1930	1986
441955	CONCORD 5 S	37.28	78.97	1950	1993
441999	COPPER HILL 1 NNE	37.10	80.13	1948	1993
442009	CORBIN	38.20	77.37	1959	1993
442041	COVINGTON	37.80	80.00	1948	1993
442044	COVINGTON FILT PLANT	37.80	80.00	1960	1993
442155	CULPEPER	38.47	78.00	1930	1990
442208	DALE ENTERPRISE	38.45	78.93	1948	1993
442237	DANTE	36.98	82.28	1927	1958
442245	DANVILLE (BRIDGE ST)	36.58	79.38	1948	1993
442368	DIAMOND SPRINGS	36.90	76.20	1948	1980
442504	DRIVER 4 NE	36.88	76.48	1948	1986
442729	ELKWOOD 6 SE	38.45	77.77	1948	1983
442790	EMPORIA 1 WNW	36.68	77.55	1948	1993
442941	FARMVILLE 2 N	37.33	78.38	1914	1993
443071	FLOYD 2 NE	36.93	80.30	1948	1993
443192	FREDERICKSBURG NAT PK	38.32	77.45	1930	1993
443213	FREE UNION	38.08	76.13	1955	1993
443267	GALAX RADIO WBOB	36.67	80.92	1948	1993
443397	GLEN LYN	37.37	80.87	1930	1993
443470	GOSHEN	37.98	79.50	1948	1993
443640	GRUNDY	37.27	82.08	1948	1993
443991	HILLSVILLE 1 S	36.73	80.73	1948	1993
444044	HOLLAND 1 E	36.68	76.78	1948	1993
444101	HOPEWELL	37.30	77.30	1930	1993
444128	HOT SPRINGS	38.00	79.83	1948	1991
444148	HUDDLESTON 4 SW	37.13	79.53	1950	1993
444234	INDEPENDENCE 2	36.65	81.17	1953	1989
444414	JOHN H KERR DAM	36.60	78.28	1951	1993
444565	KERRS CREEK 6 WNW	37.85	79.58	1948	1993
444676	LAFAYETTE 1 NE	37.23	80.22	1951	1993
444720	LANGLEY AIR FORCE BASE	37.08	76.35	1930	1993
444768	LAWRENCEVILLE 5 W	36.77	77.93	1948	1993
444876	LEXINGTON	37.78	79.43	1948	1993
444909	LINCOLN	39.12	77.72	1930	1993
445050	LOUISA	38.03	78.00	1948	1993
445096	LURAY 5 E	38.67	78.38	1948	1993
445120	LYNCHBURG WSO AP	37.33	79.20	1930	1993
445213	MANASSAS 3 NW	38.78	77.50	1950	1985
445300	MARTINSVILLE FILT PL	36.70	79.88	1948	1993
445453	MEADOWS OF DAN 5 SW	36.67	80.45	1950	1993
445685	MONTEBELLO 2 NE	37.88	79.13	1948	1991
445698	MONTEREY	38.42	79.58	1948	1990
445851	MOUNT WEATHER	39.07	77.88	1948	1993
446012	NEW CASTLE	37.50	80.10	1948	1985
446046	NEWPORT 2 NNW	37.32	80.52	1948	1993
446054	NEWPORT NEWS PRESS BLDG	37.02	76.45	1948	1980
446139	NORFOLK WSO AP	36.90	76.20	1948	1993
446475	PAINTER 2 W	37.58	75.82	1955	1993
446491	PALMYRA 1 E	37.87	78.25	1957	1993
446593	PEDLAR DAM	37.67	79.28	1948	1988
446626	PENNINGTON GAP	36.75	83.05	1931	1993
446692	PHILPOTT DAM 2	36.78	80.03	1953	1993
446712	PIEDMONT RESEARCH STN	38.22	78.12	1948	1993
446723	PILOT 1 ENE	37.07	80.35	1948	1985
446906	POWHATAN	37.55	77.93	1950	1993
446955	PULASKI 2 E	37.05	80.75	1948	1993
447025	RANDOLPH 5 NNE	36.98	78.70	1930	1983
VIRGINIA (continued)					
447033	RAPIDAN	38.30	78.07	1931	1981
447201	RICHMOND WSO AP	37.50	77.33	1948	1993
447285	ROANOKE WSO AP	37.32	79.97	1948	1993
447312	ROCKFISH	37.80	78.75	1948	1990
447338	ROCKY MOUNT	37.00	79.90	1948	1993
447501	SALTVILLE	36.88	81.77	1930	1962
447971	SPEEDWELL	36.82	81.17	1948	1985
448022	STAFFORDSVILLE 3 ENE	37.27	80.72	1951	1993
448062	STAUNTON SEWAGE PLANT	38.15	79.03	1948	1993
448192	SUFFOLK LAKE KILBY	36.73	76.60	1948	1993
448323	TANGIER ISLAND	37.83	76.00	1952	1991
448396	THE PLAINS 2 NNE	38.90	77.75	1954	1993
448448	TIMBERVILLE 3 E	38.65	78.72	1948	1990
448547	TROUT DALE	36.67	81.40	1948	1993
448600	TYE RIVER 1 SE	37.63	78.93	1948	1993
448737	VIENNA DUNN LORING	38.90	77.22	1948	1993
448829	WALKERTON 2 NW	37.75	77.05	1932	1993
448837	WALLACETON LK DRUMMOND	36.60	76.43	1930	1993
448888	WARRENTON 3 SE	38.68	77.77	1951	1993
448894	WARSAW 2 NW	37.98	76.77	1951	1993
448902	WASHINGTON 3 SSW	38.67	78.18	1948	1981
448906	WASH NATL WSCMO AP	38.85	77.03	1948	1993
449025	WEST POINT 2 SW	37.52	76.83	1954	1993
449151	WILLIAMSBURG 2 N	37.30	76.70	1948	1993
449186	WINCHESTER 3 ESE	39.18	78.12	1948	1993
449215	WISE 1 SE	36.97	82.57	1955	1993
449263	WOODSTOCK 2 NE	38.90	78.47	1930	1993
449272	WOOLWINE	36.72	80.28	1951	1993
449301	WYTHEVILLE 1 S	36.93	81.08	1930	1993
WEST VIRGINIA					
460094	ALBRIGHT	39.48	79.63	1953	1993
460102	ALDERSON	37.73	80.63	1948	1993
460355	ATHENS CONCORD COLLEGE	37.43	81.00	1948	1993
460527	BAYARD	39.27	79.37	1926	1993
460580	BECKLEY V A HOSPITAL	37.78	81.18	1948	1993
460582	BECKLEY WSO AP	37.78	81.12	1963	1993
460633	BELINGTON	39.03	79.95	1948	1993
460687	BENS RUN 1 SSE	39.47	81.10	1948	1985
460921	BLUEFIELD FAA AIRPORT	37.30	81.22	1959	1993
460939	BLUESTONE LAKE	37.65	80.88	1948	1993
461075	BRANCHLAND 1 N	38.23	82.20	1948	1993
461083	BRANDONVILLE	39.67	79.62	1948	1989
461204	BRUSHY RUN	38.83	79.25	1948	1984
461215	BUCKEYE 1 SE	38.17	80.13	1952	1993
461220	BUCKHANNON 2 W	39.00	80.27	1948	1993
461282	BURNSVILLE LAKE	38.85	80.63	1949	1993
461328	CAIRO 3 S	39.17	81.17	1948	1981
461363	CAMDEN ON GAULEY	38.37	80.62	1948	1993
461393	CANAAN VALLEY	39.05	79.43	1948	1993
461526	CENTRALIA	38.62	80.58	1951	1993
461570	CHARLESTON WSFO AP	38.37	81.60	1948	1993
461575	CHARLESTON 1	38.35	81.65	1926	1974
461677	CLARKSBURG 1	39.27	80.35	1926	1993
461696	CLAY 1 SW	38.45	81.08	1948	1993
461723	CLENDENIN 1 SW	38.48	81.37	1951	1993
462054	CRESTON	38.95	81.28	1948	1993
462462	DRY CREEK	37.87	81.47	1961	1993
462718	ELKINS WSO AP	38.88	79.85	1926	1993
462920	FAIRMONT	39.47	80.13	1926	1993
463072	FLAT TOP	37.58	81.10	1931	1993
463215	FRANKLIN 2 NE	38.67	79.32	1948	1993
463353	GARY	37.37	81.55	1926	1989
463361	GASSAWAY	38.67	80.77	1951	1993
463544	GLENVILLE 1 ENE	38.93	80.82	1926	1993
463798	HACKER VALLEY	38.65	80.38	1960	1993
463846	HAMLIN	38.28	82.10	1948	1993
464128	HICO 1 SE	38.10	81.00	1956	1993
464200	HOGSETT GALLIPOLIS DAM	38.68	82.18	1948	1993
464378	HUNTINGTON 1	38.42	82.37	1926	1957
464393	HUNTINGTON WSO AP	38.37	82.55	1961	1993
464408	IAEGER	37.47	81.82	1948	1993
464763	KEARNEYVILLE WSO	39.38	77.88	1930	1993
464816	KERMIT	37.83	82.40	1948	1985
465002	LAKE LYNN	39.72	79.85	1948	1993
465224	LEWISBURG 2 SSW	37.77	80.47	1948	1993
465353	LOGAN	37.85	82.00	1948	1993
465365	LONDON LOCKS	38.20	81.37	1936	1993
465563	MADISON	38.05	81.82	1948	1993
465621	MANNINGTON 1 N	39.55	80.35	1926	1979
465626	MANNINGTON 6 NW	39.57	80.45	1948	1993
465672	MARLINTON	38.22	80.08	1926	1993
465707	MARTINSBURG FAA AP	39.40	77.98	1926	1993
465739	MATHIAS	38.87	78.87	1948	1993
465871	MC ROSS	37.98	80.75	1955	1988
465963	MIDDLEBOURNE 2 ESE	39.48	80.87	1948	1993
466163	MOOREFIELD 2 SSE	39.03	78.97	1948	1993
466202	MORGANTOWN FAA AP	39.65	79.92	1948	1993
466212	MORGANTOWN LOCK AND DAM	39.62	79.97	1948	1993
466442	NEW CUMBERLAND	40.50	80.60	1948	1988
466591	OAK HILL	37.97	81.15	1948	1993

Table 3 (continued)

Station number	Station name	Latitude (degrees)	Longitude (degrees)	Record begins	Record ends
WEST VIRGINIA (continued)					
466849	PARKERSBURG FAA AP	39.35	81.43	1948	1993
466859	PARKERSBURG 1 E	39.27	81.53	1926	1993
466867	PARSONS 1 SE	39.10	79.67	1948	1993
466954	PETERSBURG	39.00	79.12	1939	1971
466982	PHILIPPI	39.15	80.03	1948	1993
466991	PICKENS 1	38.67	80.22	1948	1986
467004	PIEDMONT	39.48	79.03	1926	1966
467029	PINEVILLE	37.58	81.53	1941	1993
467207	PRINCETON	37.37	81.08	1948	1993
467352	RAVENSWOOD LOCK PARK	38.95	81.77	1948	1980
467552	RIPLEY 4 NNE	38.88	81.68	1948	1993
467730	ROMNEY 1 SW	39.33	78.77	1948	1993
467785	ROWLESBURG 1	39.33	79.68	1948	1993
468384	SPENCER 1 SE	38.80	81.35	1926	1993
468433	SPRUCE KNOB	38.68	79.52	1951	1988
468662	SUTTON LAKE	38.65	80.68	1948	1993
468807	THOMAS	39.15	79.50	1948	1993
469011	UNION 3 SSE	37.55	80.53	1948	1993
469086	VALLEY HEAD	38.55	80.03	1948	1993
469104	VANDALIA	38.93	80.40	1948	1980
469281	WARDENSVILLE R M FARM	39.10	78.58	1926	1993
469333	WEBSTER SPRINGS 1 E	38.48	80.42	1948	1989
469368	WELLSBURG WTR TRTMT PL	40.28	80.62	1948	1989
469436	WESTON	39.03	80.47	1948	1993
469492	WHEELING WARWOOD DAM 12	40.10	80.70	1926	1976
469522	WHITE SULPHUR SPRINGS	37.80	80.30	1926	1993
469605	WILLIAMSON	37.67	82.28	1926	1993
469610	WILLIAMSON 2	37.68	82.30	1951	1993
469683	WINFIELD LOCKS	38.53	81.92	1948	1993
ONTARIO					
6060773	BISCOTASING	47.30	82.10	1914	1990
6061359	CHAPLEAU 2	47.83	83.43	1886	1966
6061847	CONISTON	46.47	80.82	1921	1976
6067211	RUEL	47.30	81.45	1915	1959
6068980	TURBINE	46.38	81.57	1914	1990
6070027	ABITIBI CANYON	49.88	81.57	1931	1963
6071712	COCHRANE	49.07	81.03	1910	1990
6072225	EARLTON A	47.70	79.85	1938	1990
6072325	ENGLEHART	47.82	79.90	1948	1990
6073138	HAILEYBURY	47.45	79.63	1893	1977
6073420	HEASLIP	47.80	79.83	1928	1967
6073810	IROQUOIS FALLS	48.75	80.67	1913	1990
6073840	ISLAND FALLS	49.58	81.38	1955	1990
6073960	KAPUSKASING CDA	49.40	82.43	1918	1990
6073975	KAPUSKASING A	49.42	82.47	1937	1990
6074209	KIRKLAND LAKE	48.15	80.02	1950	1990
6075379	MONTREAL RIVER	47.12	79.48	1910	1967
6075400	MOOSE FACTORY	51.23	80.50	1877	1938
6075425	MOOSONEE	51.27	80.65	1932	1990
6075594	NEW LISKEARD	47.50	79.67	1923	1984
6077845	SMOKY FALLS	50.07	82.17	1933	1990
6078285	TIMMINS A	48.57	81.37	1955	1990
6079415	WAWAITIN	48.35	81.40	1913	1965
6080189	ALGONQUIN PARK	45.58	78.55	1917	1960
6081928	CRYSTAL FALLS	46.45	79.87	1922	1988
6084770	MADAWASKA	45.50	77.98	1915	1990
6085682	NORTH BAY	46.32	79.47	1887	1982
6085700	NORTH BAY A	46.35	79.43	1939	1990
6087255	RUTHERGLEN	46.25	79.07	1891	1940
6092915	GORE BAY	45.92	82.47	1881	1983
6092925	GORE BAY A	45.88	82.57	1947	1990
6096755	PROVIDENCE BAY	45.67	82.23	1897	1940
6097915	SOUTH BAYMOUTH	45.58	82.02	1954	1990
6100969	BROCKVILLE	44.60	75.70	1871	1980
6101440	CHATS FALLS	45.47	76.23	1950	1990
6101494	CHENAUX	45.58	76.68	1950	1990
6101658	CLONTARF	45.38	77.15	1882	1957
6101820	COMBERMERE	45.37	77.62	1956	1990
6101874	CORNWALL	45.02	74.75	1950	1990
6101901	CORNWALL ONT HYDRO	45.03	74.80	1954	1990
6101955	DALHOUSIE L HIGH FALLS	44.97	76.62	1923	1983
6104025	KEMPTVILLE	45.00	75.63	1928	1990
6104125	KILLALOE	45.57	77.42	1938	1972
6104185	KINGSTON QUEENS U	44.25	76.50	1872	1957
6104733	MACCUE	44.88	76.17	1883	1918
6105460	MORRISBURG	44.92	75.18	1913	1990
6105887	OTTAWA	45.40	75.72	1872	1935
6105976	OTTAWA CDA	45.38	75.72	1889	1990
6106000	OTTAWA INT'L A	45.32	75.67	1938	1990
6106090	OTTAWA NRC	45.45	75.62	1951	1984
6106362	PEMBROKE EDDY MATCH	45.83	77.15	1866	1969
6106400	PETAWAWA NAT FORESTRY	45.98	77.43	1931	1990
6106779	PURDY	45.32	77.72	1955	1990
6107003	RENFREW	45.43	76.65	1882	1929
6107955	SOUTH MOUNTAIN	44.97	75.48	1960	1990
6108060	STONECLIFFE	46.15	78.10	1876	1921
6110270	ANGUS	44.32	79.87	1930	1965
6110549	BARRIE	44.40	79.68	1866	1958
6110605	BEATRICE	45.13	79.38	1876	1979
6110661	BEETON	44.10	79.78	1916	1970
ONTARIO (continued)					
6110745	BINGHAM CHUTE	46.08	79.40	1933	1970
6111045	BURKS FALLS	45.60	79.57	1888	1986
6111467	CHATSWORTH	44.40	80.90	1952	1990
6111766	COLDWATER	44.70	79.67	1883	1954
6111793	COLLINGWOOD	44.48	80.22	1869	1974
6112171	DURHAM	44.18	80.82	1882	1990
6112313	EMSDALE	45.50	79.23	1895	1952
6112340	ESSA ONT HYDRO	44.37	79.80	1958	1990
6112350	EUGENIA	44.33	80.55	1916	1969
6113000	GRAVENHURST	44.92	79.37	1870	1949
6113660	HUNTSVILLE	45.32	79.25	1879	1961
6114805	MAGNETAWAN	45.67	79.78	1924	1958
6115099	MIDHURST	44.45	79.77	1947	1990
6115127	MIDLAND	44.75	79.90	1889	1986
6115525	MUSKOKA A	44.97	79.30	1934	1990
6115810	ORILLIA	44.62	79.40	1871	1961
6116128	OWEN SOUND	44.57	80.92	1878	1962
6116254	PARRY SOUND	45.33	80.00	1874	1976
6117663	SCOTIA	45.52	79.30	1924	1978
6118187	SUTTON WEST	44.32	79.30	1871	1908
6119325	WASHAGO	44.75	79.33	1927	1970
6119495	WIARTON	44.75	81.13	1883	1936
6119500	WIARTON A	44.75	81.10	1947	1990
6120315	ARKONA	43.03	81.92	1882	1915
6120819	BLYTH	43.72	81.38	1959	1990
6121025	BRUCEFIELD	43.55	81.55	1903	1990
6122450	FOREST	43.10	82.00	1924	1964
6122845	GODERICH	43.75	81.70	1866	1950
6122848	GODERICH LIGHTHOUSE	43.75	81.72	1874	1911
6122851	GODERICH TOWNSHIP	43.72	81.70	1912	1970
6124127	KINCARDINE	44.17	81.62	1870	1903
6124700	LUCKNOW	43.95	81.50	1885	1990
6125705	NORTH BRUCE	44.38	81.42	1888	1922
6126558	POINT CLARK	44.08	81.68	1871	1913
6127513	SARNIA	42.97	82.37	1882	1961
6127887	SOUTHAMPTON	44.50	81.37	1872	1982
6128320	TOBERMORY	45.25	81.67	1888	1983
6129235	WALKERTON	44.13	81.15	1902	1971
6131081	CALEDONIA	43.08	79.95	1931	1966
6131386	CHATHAM	42.40	82.20	1933	1967
6131388	CHATHAM 2	42.40	82.20	1879	1946
6131910	COTTAM	42.12	82.75	1882	1926
6131982	DELHI CDA	42.87	80.55	1934	1990
6133047	GRIMSBY	43.20	79.57	1910	1985
6133057	GRIMSBY ROCK CHAPEL	43.18	79.58	1914	1966
6133120	HAGERSVILLE	42.97	80.07	1948	1990
6133360	HARROW CDA	42.03	82.90	1917	1990
6134390	LEAMINGTON	42.05	82.63	1916	1978
6134610	LONG POINT	42.55	80.05	1936	1985
6135583	NEW GLASGOW	42.52	81.63	1957	1990
6135638	NIAGARA FALLS	43.13	79.08	1902	1990
6135660	NIAGARA FALLS ONT HYDRO	43.08	79.08	1921	1972
6136335	PELEE ISLAND	41.75	82.68	1888	1987
6136626	PORT DALHOUSIE	43.18	79.27	1874	1990
6136643	PORT DOVER	42.78	80.22	1874	1983
6136694	PORT STANLEY	42.67	81.22	1871	1990
6137147	RIDGETOWN	42.45	81.88	1883	1966
6137285	ST CATHARINES	43.20	79.25	1882	1990
6137301	ST CATHARINES CDA	43.18	79.23	1928	1964
6137361	ST THOMAS	42.78	81.17	1882	1980
6137399	ST WILLIAMS	42.70	80.45	1954	1988
6137735	SIMCOE	42.87	80.33	1866	1961
6139145	VINELAND STATION	43.18	79.40	1924	1988
6139265	WALLACEBURG	42.58	82.40	1905	1990
6139445	WELLAND	43.00	79.27	1872	1990
6139520	WINDSOR	42.35	83.10	1866	1929
6139525	WINDSOR A	42.27	82.97	1940	1990
6139600	WOODSLEE CDA	42.22	82.73	1946	1986
6140941	BRANTFORD	43.13	80.27	1876	1963
6141095	CAMBRIDGE GALT MOE	43.33	80.32	1879	1990
6142400	FERGUS SHAND DAM	43.73	80.33	1939	1990
6142803	GLEN ALLAN	43.68	80.72	1955	1990
6143083	GUELPH OAC	43.52	80.23	1881	1973
6144232	KITCHENER	43.43	80.50	1914	1977
6144442	LISTOWEL	43.75	80.97	1880	1966
6144475	LONDON A	43.03	81.15	1940	1990
6144500	LONDON SHARON DRIVE	43.03	81.28	1956	1990
6144505	LONDON SOUTH	42.98	81.22	1883	1932
6144665	LUCAN	43.18	81.42	1871	1975
6145267	MONTICELLO	43.97	80.40	1954	1990
6145503	MOUNT FOREST	43.98	80.75	1891	1986
6146240	PARIS	43.18	80.45	1870	1967
6146711	PRESTON	43.40	80.42	1953	1990
6146939	REDICKVILLE	44.23	80.22	1944	1985
6148100	STRATFORD	43.38	81.00	1865	1959
6148105	STRATFORD MOE	43.37	81.00	1959	1990
6148120	STRATHROY	42.95	81.65	1879	1990
6149454	WESTMINSTER	42.93	81.28	1882	1933
6149625	WOODSTOCK	43.13	80.77	1870	1990
6150100	ALBION	43.93	79.83	1956	1990
6150243	ALTON	43.85	80.08	1887	1964

ONTARIO (continued)

Station number	Station name	Latitude (degrees)	Longitude (degrees)	Record begins	Record ends
6150395	AURORA	43.95	79.40	1883	1919
6150689	BELLEVILLE	44.15	77.40	1866	1990
6150815	BLOOMFIELD	43.98	77.22	1896	1990
6151064	BURLINGTON TS	43.33	79.83	1951	1990
6151137	CAMPBELLFORD	44.30	77.80	1915	1990
6152605	FRENCHMANS BAY	43.82	79.08	1959	1990
6152691	GEORGETOWN	43.65	79.95	1882	1966
6152833	GLEN HAFFY MONO MILLS	43.93	79.95	1959	1990
6153192	HAMILTON	43.27	79.90	1866	1958
6153300	HAMILTON RBG	43.28	79.88	1950	1990
6153410	HEART LAKE	43.73	79.78	1957	1989
6155071	MEYERSBURG	44.25	77.80	1930	1971
6155183	MILLGROVE	43.32	79.97	1951	1990
6155722	OAK RIDGES	43.97	79.47	1918	1979
6155788	ORANGEVILLE	43.92	80.05	1883	1967
6155854	ORONO	43.97	78.62	1923	1990
6156533	PICTON	44.02	77.13	1915	1990
6156670	PORT HOPE	43.95	78.28	1882	1990
6157012	RICHMOND HILL	43.88	79.45	1959	1990
6157685	SHARON	44.10	79.43	1886	1990
6157831	SMITHFIELD CDA	44.08	77.67	1949	1987
6158065	STONEY CREEK	43.22	79.75	1884	1927
6158350	TORONTO	43.67	79.40	1840	1990
6158363	TORONTO AGINCOURT	43.78	79.27	1895	1968
6158417	TORONTO DEER PARK	43.68	79.38	1890	1933
6158665	TORONTO ISLAND A	43.63	79.40	1957	1990
6158733	TORONTO PEARSON INT'L A	43.67	79.63	1937	1990
6158875	TRENTON A	44.12	77.53	1935	1990
6158885	TRENTON ONT HYDRO	44.13	77.60	1915	1990
6159010	TWEED	44.50	77.28	1925	1972
6159575	WOODBRIDGE	43.80	79.60	1948	1990
6160297	APSLEY	44.77	78.08	1922	1957
6160465	BANCROFT	45.05	77.85	1882	1985
6162375	FENELON FALLS	44.53	78.73	1915	1970
6163156	HALIBURTON A	45.00	78.58	1883	1990
6164297	LAKEFIELD	44.47	78.23	1874	1990
6164430	LINDSAY	44.35	78.75	1880	1971
6165195	MINDEN	44.93	78.72	1883	1990
6166416	PETERBOROUGH	44.28	78.32	1866	1970

QUEBEC

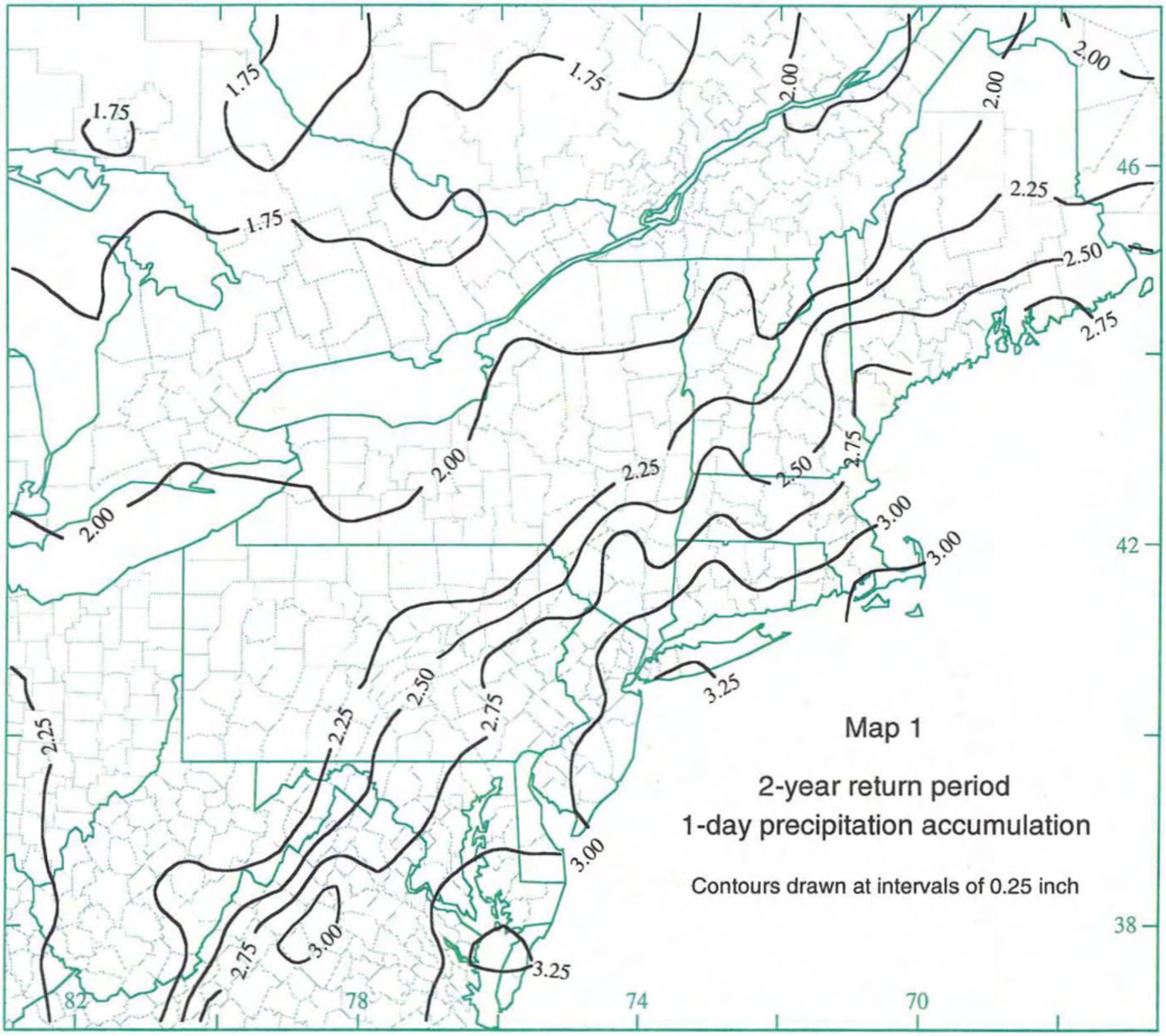
Station number	Station name	Latitude (degrees)	Longitude (degrees)	Record begins	Record ends
7010720	BERTHIERVILLE	46.05	73.18	1919	1990
7011600	CHUTE PANET	46.87	71.87	1949	1982
7012070	DONNACONA	46.67	71.75	1918	1964
7012071	DONNACONA 2	46.68	71.73	1952	1990
7013360	JOLIETTE	46.03	73.43	1913	1972
7014160	L'ASSOMPTION CDA	45.82	73.43	1930	1990
7014290	LES CEDRES	45.30	74.05	1913	1990
7015730	OKA	45.50	74.07	1937	1990
7016280	QUEBEC	46.80	71.22	1872	1959
7016294	QUEBEC A	46.80	71.38	1943	1990
7016800	ST ALBAN	46.72	72.08	1949	1990
7016840	STE ANNE DE LA PERADE	46.58	72.23	1949	1990
7016960	ST CHARLES DE MANDEVILLE	46.35	73.35	1921	1990
7017000	STE CHRISTINE	46.82	71.92	1950	1990
7017080	ST COME	46.28	73.75	1950	1990
7017270	ST GABRIEL DE BRANDON	46.30	73.38	1919	1985
7017480	ST LIN DES LAURENTIDES	45.85	73.75	1913	1981
7017640	ST PAULIN	46.42	73.02	1950	1990
7017760	ST TITE	46.73	72.57	1920	1985
7018000	SHAWINIGAN	46.57	72.75	1902	1990
7018564	TROIS RIVIERES	46.37	72.60	1934	1986
7020040	ABERCORN	45.03	72.67	1950	1985
7020360	ASBESTOS	45.77	71.95	1948	1987
7020800	BISHOPTON	45.58	71.57	1948	1990
7020840	BROME	45.18	72.57	1875	1990
7020860	BROMPTONVILLE	45.50	71.97	1957	1990
7021320	CHARTIERVILLE	45.28	71.20	1951	1990
7021580	CHUTE HEMMINGS	45.87	72.45	1931	1986
7021840	COATICOOK	45.15	71.80	1949	1990
7022000	DISRAELI	45.92	71.32	1908	1990
7022160	DRUMMONDVILLE	45.88	72.48	1913	1990
7022280	EAST ANGUS	45.48	71.67	1919	1985
7022300	EAST HEREFORD	45.08	71.50	1949	1990
7022320	FARNHAM	45.30	72.93	1917	1990
7022720	GEORGEVILLE	45.13	72.23	1951	1990
7022800	GRANBY	45.38	72.70	1948	1990
7023240	HUNTINGDON	45.05	74.17	1870	1990
7023800	LAKE MEGANTIC	45.60	70.88	1913	1947
7024000	LAMBTON	45.83	71.08	1915	1990
7024080	LA PATRIE	45.40	71.25	1949	1981
7024280	LENNOXVILLE CDA	45.37	71.83	1888	1990
7024320	LINGWICK	45.63	71.37	1952	1990
7024400	MACDONALD COLLEGE	45.42	73.93	1906	1976
7024440	MAGOG	45.27	72.12	1948	1990
7024920	MILAN	45.58	71.12	1949	1990
7025250	MONTREAL/DORVAL INT'L A	45.47	73.75	1941	1990
7025257	MONTREAL JAR BOT	45.57	73.55	1948	1989
7025280	MONTREAL MCGILL	45.50	73.58	1871	1990
7025440	NICOLET	46.20	72.62	1913	1990
7026040	PHILIPSBURG	45.03	73.08	1950	1990

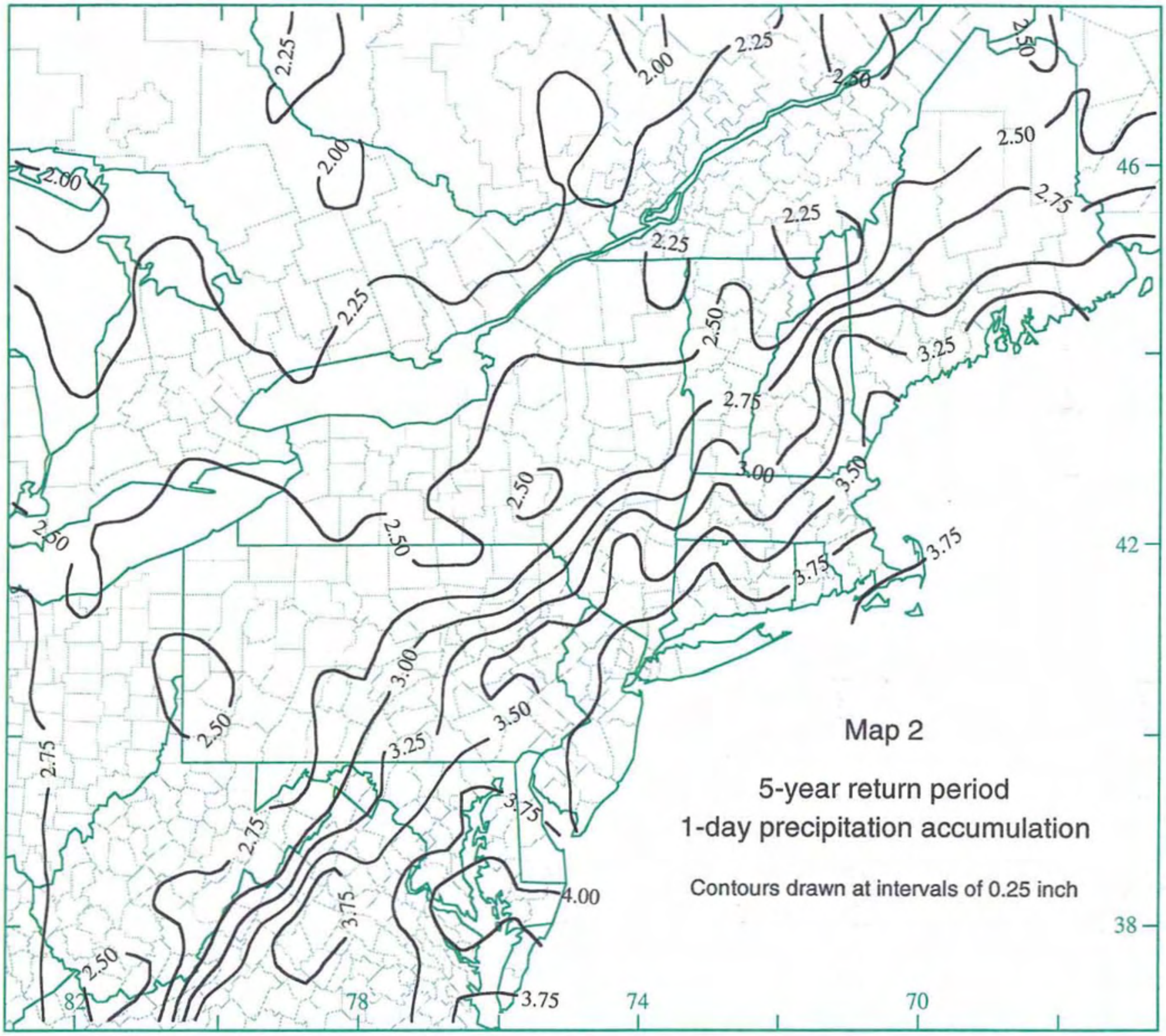
QUEBEC (continued)

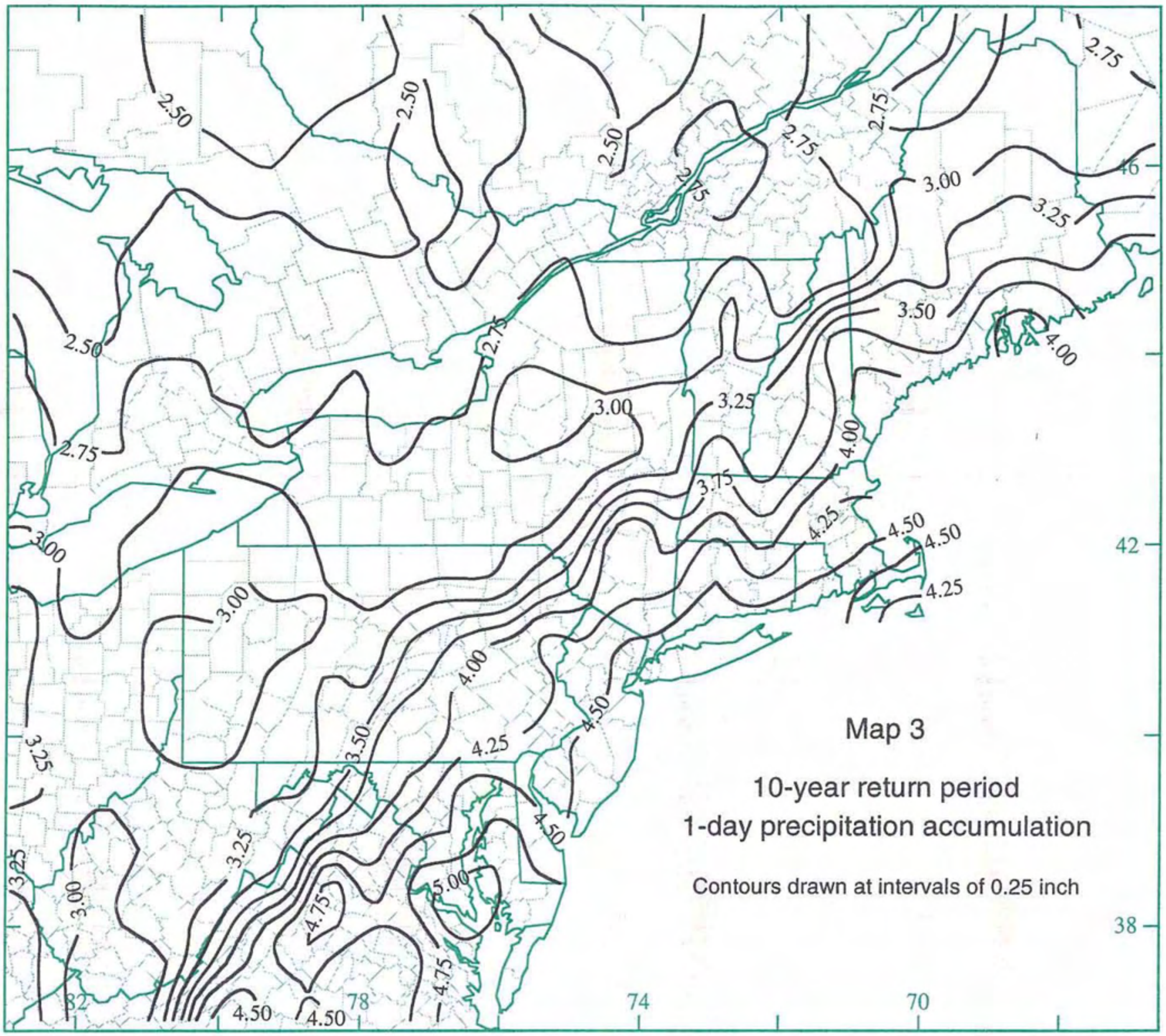
Station number	Station name	Latitude (degrees)	Longitude (degrees)	Record begins	Record ends
7026465	RICHMOND	45.63	72.13	1871	1990
7032440	FORT COULONGE	45.82	76.75	1948	1989
7033120	HIGH FALLS	45.85	75.65	1933	1972
7033160	HUBERDEAU	45.97	74.63	1913	1980
7034350	LUCERNE	45.53	75.97	1911	1945
7034480	MANIWAKI	46.38	75.97	1953	1990
7034481	MANIWAKI 2	46.38	75.98	1913	1975
7035112	MONTEBELLO SEIGNIORY	45.65	74.95	1930	1975
7035158	MONT LAURIER	46.57	75.50	1920	1963
7035360	MORIN HEIGHTS	45.92	74.27	1948	1982
7035520	NOMININGUE	46.38	75.05	1913	1990
7035680	NOTRE DAME DU LAUS	46.12	75.63	1929	1990
7035760	OTTER LAKE	45.85	76.43	1948	1990
7036000	PERKINS	45.60	75.62	1911	1990
7036760	STE AGATHE DES MONTS	46.05	74.28	1899	1958
7037400	ST JEROME	45.80	74.05	1932	1990
7038040	SHAWVILLE	45.62	76.47	1948	1990
7038080	SHEENBORO	45.97	77.25	1948	1990
7038880	WALTHAM	45.92	76.92	1953	1990
7040440	BAIE COMEAU A	49.13	68.20	1947	1990
7040680	BERSIMIS	48.97	68.62	1923	1961
7041710	CLARKE CITY	50.18	66.63	1902	1981
7042840	GRANDES BERGERONNES	48.25	69.52	1951	1990
7043000	HARRINGTON HARBOUR	50.53	59.50	1911	1978
7043540	LABRIEVILLE BI	49.30	69.55	1955	1990
7043960	LA MALBAIE	47.67	70.15	1913	1990
7045400	NATASHQUAN A	50.18	61.82	1914	1990
7047250	ST FEREOL	47.12	70.83	1915	1983
7047770	ST URBAIN	47.57	70.55	1957	1990
7047910	SEPT-ILES A	50.22	66.27	1944	1990
7048320	TADOUSSAC	48.15	69.70	1913	1990
7050198	ANTICOSTI HEATH POINT	49.10	61.70	1882	1935
7050200	ANTICOSTI SW POINT	49.40	63.55	1872	1954
7050210	ANTICOSTI WEST POINT	49.87	64.53	1882	1933
7050240	ARMAGH	46.75	70.53	1916	1990
7050455	BARRAGE LAC MORIN	47.65	69.52	1942	1984
7050463	BARRAGE MITIS	48.33	67.90	1926	1966
7050760	BIC	48.37	68.70	1882	1968
7050790	BIRD ROCKS	47.85	61.13	1881	1934
7051040	CAP CHAT	49.08	66.75	1882	1974
7051120	CAPLAN	48.10	65.68	1947	1990
7051160	CAP MADELEINE	49.23	65.32	1882	1990
7051200	CAUSAPSCAL	48.37	67.23	1913	1990
7052600	GASPE	48.83	64.48	1895	1985
7052960	GRINDSTONE ISLAND	47.38	61.87	1871	1983
7054095	LA POCATIERE CDA	47.35	70.03	1899	1990
7055120	MONT JOLI A	48.60	68.22	1943	1990
7055200	MONT LOUIS	49.23	65.73	1933	1990
7055380	MURDOCHVILLE	48.95	65.52	1952	1990
7056067	POINTE AU PERE	48.50	68.48	1873	1982
7056120	PORT DANIEL	48.15	64.98	1927	1990
7056200	PORT MENIER	49.82	64.35	1929	1974
7056240	PRICE	48.60	68.13	1931	1985
7056480	RIMOUSKI	48.45	68.52	1952	1990
7056600	RIVIERE BLEUE	47.43	69.03	1950	1990
7057160	ST ELZEAR DE BONAVENTURE	48.18	65.35	1948	1990
7057600	ST PAMPHILE	46.97	69.78	1950	1990
7057680	ST RAPHAEL	46.82	70.75	1949	1982
7057720	STE ROSE DU DEGELIS	47.57	68.63	1932	1990
7058520	TRINITE DES MONTS	48.13	68.47	1950	1990
7058560	TROIS PISTOLES	48.15	69.13	1951	1990
7060080	ALBANEL	48.88	72.45	1922	1990
7060320	ARVIDA	48.43	71.17	1931	1989
7060400	BAGOTVILLE A	48.33	71.00	1942	1990
7061440	CHICOUTIMI	48.42	71.08	1871	1979
7061480	CHUTE A MURDOCK	48.52	71.25	1921	1957
7061520	CHUTE AUX GALETS	48.65	71.20	1919	1963
7063320	ISLE MALIGNE	48.58	71.63	1924	1990
7063320	ISLE MALIGNE	48.58	71.63	1926	1990
7063400	KENOGAMI	48.42	71.25	1916	1972
7063560	LAC BOUCHETTE	48.27	72.18	1949	1990
7063683	LAC ONATCHIWAY	48.90	71.03	1920	1981
7063690	LAC STE CROIX	48.42	71.75	1958	1990
7064998	MISTASSINI	48.85	72.20	1912	1990
7065640	NORMANDIN CDA	48.85	72.53	1936	1990
7065960	PERIBONCA	48.77	72.03	1951	1990
7066080	PORTAGE DES ROCHES	48.30	71.22	1926	1984
7066685	ROBERVAL A	48.52	72.27	1957	1990
7066688	ROBERVAL NORD	48.53	72.23	1888	1967
7066820	ST AMBROISE	48.57	71.33	1954	1990
7068160	SHIPSHAW	48.45	71.22	1943	1990
7070448	BARRAGE A LAC KEMPT	47.55	74.18	1913	1970
7070451	BGE C LAC CHATEAUVERT	47.77	73.90	1942	1982
7070454	BARRAGE GOUIN	48.35	74.10	1913	1982
7070456	BARRAGE MATTAWIN	46.85	73.65	1929	1982
7074240	LA TUQUE	47.40	72.78	1911	1990
7074600	MANOUAN SANMAUR	47.90	73.80	1919	1972
7076360	RAPIDE BLANC	47.80	72.97	1931	1974
7080449	BARRAGE CABONGA	47.32	76.47	1929	1969
7080452	BARRAGE DES QUINZE	47.55	79.23	1911	1990
7080468	BARRAGE TEMISCAMINGUE	46.72	79.10	1910	1990

Table 3 (continued)

Station number	Station name	Latitude (degrees)	Longitude (degrees)	Record begins	Record ends
QUEBEC (continued)					
7080600	BELLETERRE	47.38	78.70	1951	1990
7082880	GRAND LAC VICTORIA	47.83	77.37	1927	1984
7083480	KIPAWA LANIEL	47.05	79.27	1920	1990
7084560	MANNEVILLE	48.55	78.48	1949	1990
7086400	RAPIDE-SEPT	47.77	78.30	1941	1975
7088760	VILLE MARIE	47.35	79.43	1913	1990
7090050	ABITIBI POST	48.72	79.37	1896	1936
7090120	AMOS	48.57	78.13	1913	1990
7092480	FORT GEORGE	53.83	79.00	1915	1969
7094120	LA SARRE	48.78	79.22	1951	1990
7095000	MISTASSINI POST	50.42	73.88	1885	1980
7095480	NITCHEQUON	53.20	70.90	1942	1985
7098360	TASCHEREAU	48.67	78.70	1951	1990
7098600	VAL D'OR A	48.07	77.78	1951	1990
NEW BRUNSWICK					
8100100	ACADIA FOREST EXP ST	45.98	66.37	1955	1990
8100200	ALMA	45.60	64.95	1950	1990
8100300	AROOSTOOK	46.80	67.72	1929	1990
8100500	BATHURST	47.62	65.65	1872	1972
8100701	CAMPBELLTON POWER ST	48.00	66.68	1937	1978
8100990	CHATHAM	47.05	65.48	1873	1947
8101000	CHATHAM A	47.02	65.45	1943	1990
8101100	CHIPMAN	46.18	65.87	1931	1967
8101170	DALHOUSIE	48.07	66.37	1872	1916
8101200	DOAKTOWN	46.55	66.15	1934	1990
8101300	EDMUNDSTON	47.37	68.33	1913	1957
8101301	EDMUNDSTON FRASER CO	47.37	68.33	1949	1979
8101500	FREDERICTON A	45.87	66.53	1951	1990
8101600	FREDERICTON CDA	45.92	66.62	1913	1990
8101700	FREDERICTON UNB	45.95	66.60	1871	1952
8101800	GAGETOWN 2	45.78	66.15	1897	1990
8101900	GRAND FALLS	47.05	67.73	1913	1966
8101920	GRAND MANAN	44.73	66.77	1874	1965
8102200	HARVEY STATION	45.73	67.00	1920	1976
8102300	KEDGWICK	47.65	67.35	1931	1990
8102600	MCADAM	45.58	67.33	1872	1976
8103000	MINTO	46.03	66.03	1954	1990
8103100	MONCTON	46.10	64.78	1881	1990
8103200	MONCTON A	46.12	64.68	1939	1990
8103400	MUSQUASH	45.20	66.33	1922	1981
8103500	NEPISIGUIT FALLS	47.40	65.78	1922	1990
8103800	OROMOCTO	45.83	66.47	1957	1990
8104100	POINT ESCUMINAC	47.12	64.82	1885	1951
8104200	POINT LEPREAU	45.07	66.47	1872	1952
8104400	REXTON	46.67	64.87	1922	1990
8104500	SACKVILLE	45.90	64.38	1878	1980
8104600	ST ANDREWS	45.08	67.08	1874	1990
8104700	ST GEORGE	45.13	66.83	1919	1981
8104800	SAINT JOHN	45.28	66.08	1871	1970
8104900	SAINT JOHN A	45.32	65.88	1946	1990
8105200	SUSSEX	45.72	65.53	1897	1990
8105600	WOODSTOCK	46.15	67.58	1886	1990


Map 1
2-year return period
1-day precipitation accumulation
Contours drawn at intervals of 0.25 inch
1.75
2.00
2.25
2.50
2.75
3.00
3.25
46
42
38
82
78
74
70

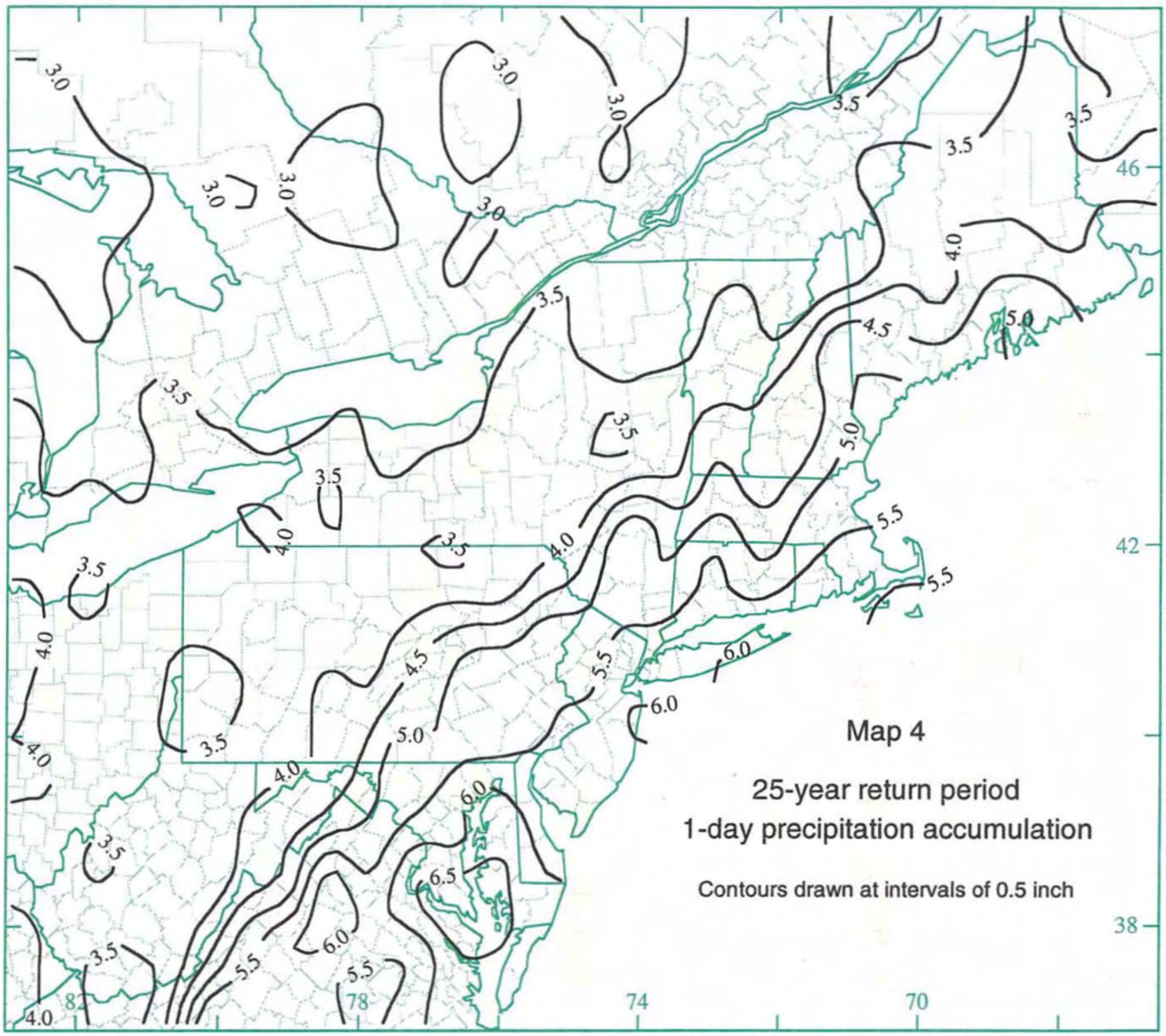

Map 2
5-year return period
1-day precipitation accumulation
Contours drawn at intervals of 0.25 inch
46
42
38
82
78
74
70
2.00
2.25
2.50
2.75
3.00
3.25
3.50
3.75
4.00



Map 3

10-year return period
1-day precipitation accumulation

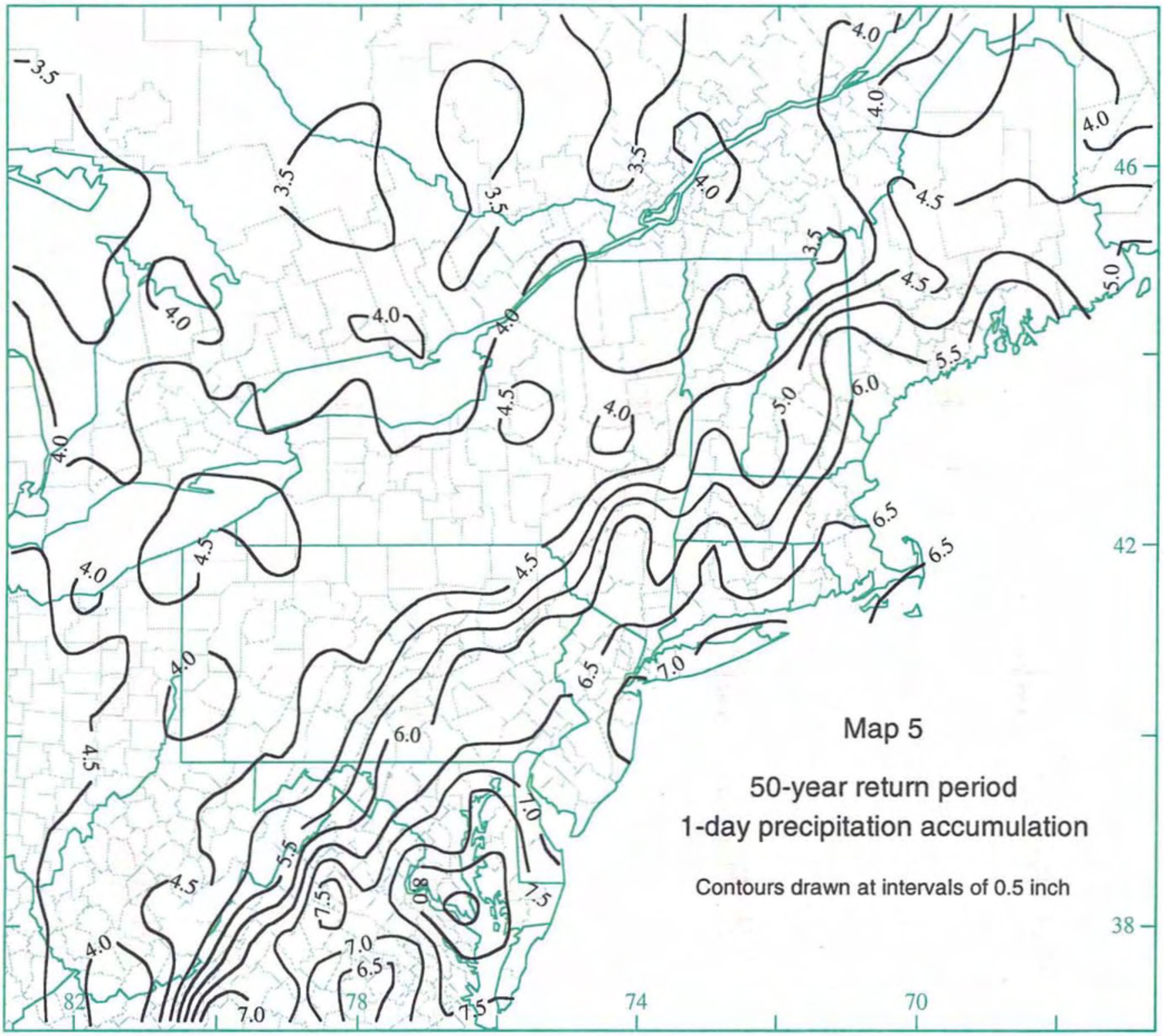
Contours drawn at intervals of 0.25 inch



Map 4

25-year return period
1-day precipitation accumulation

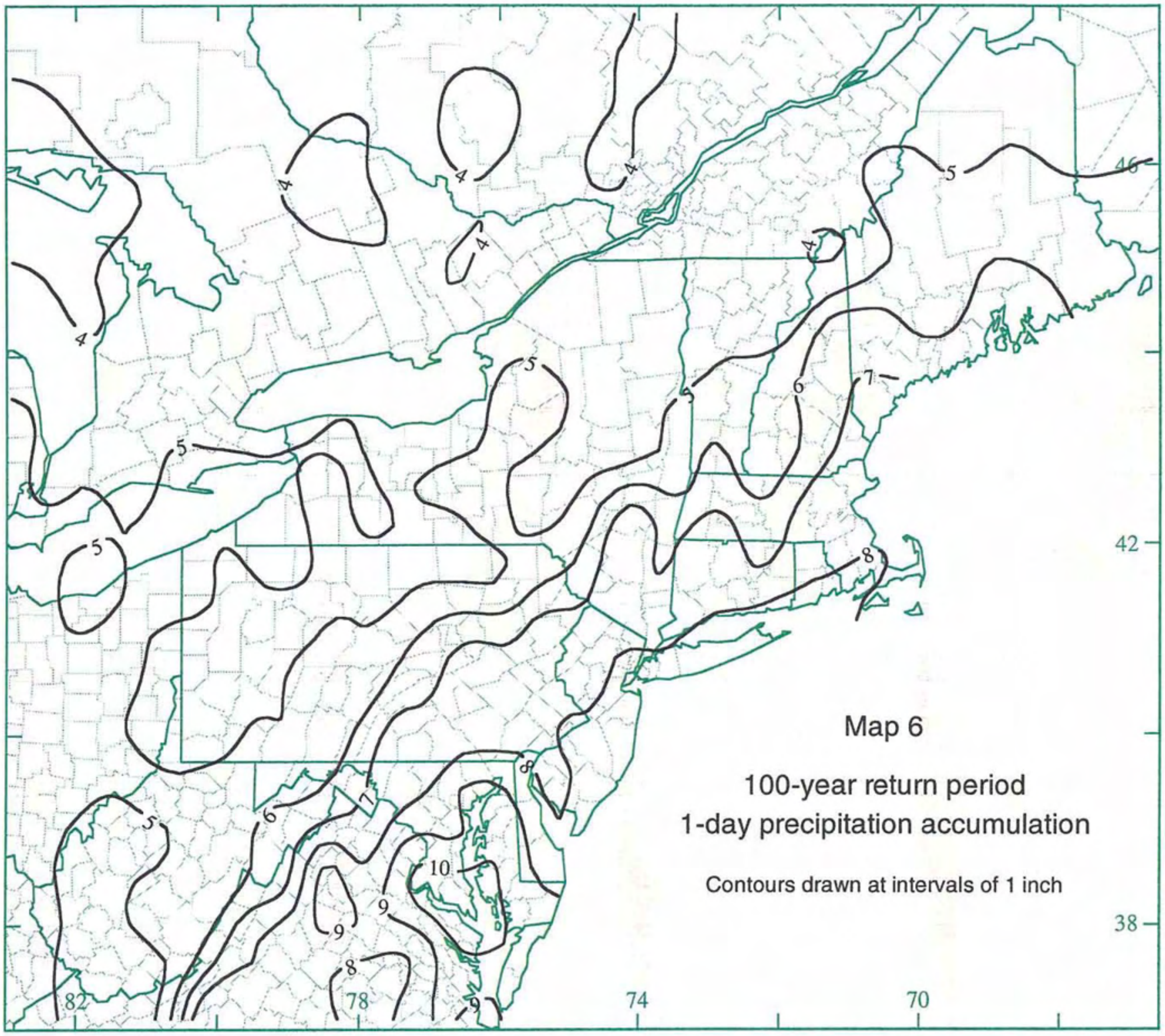
Contours drawn at intervals of 0.5 inch

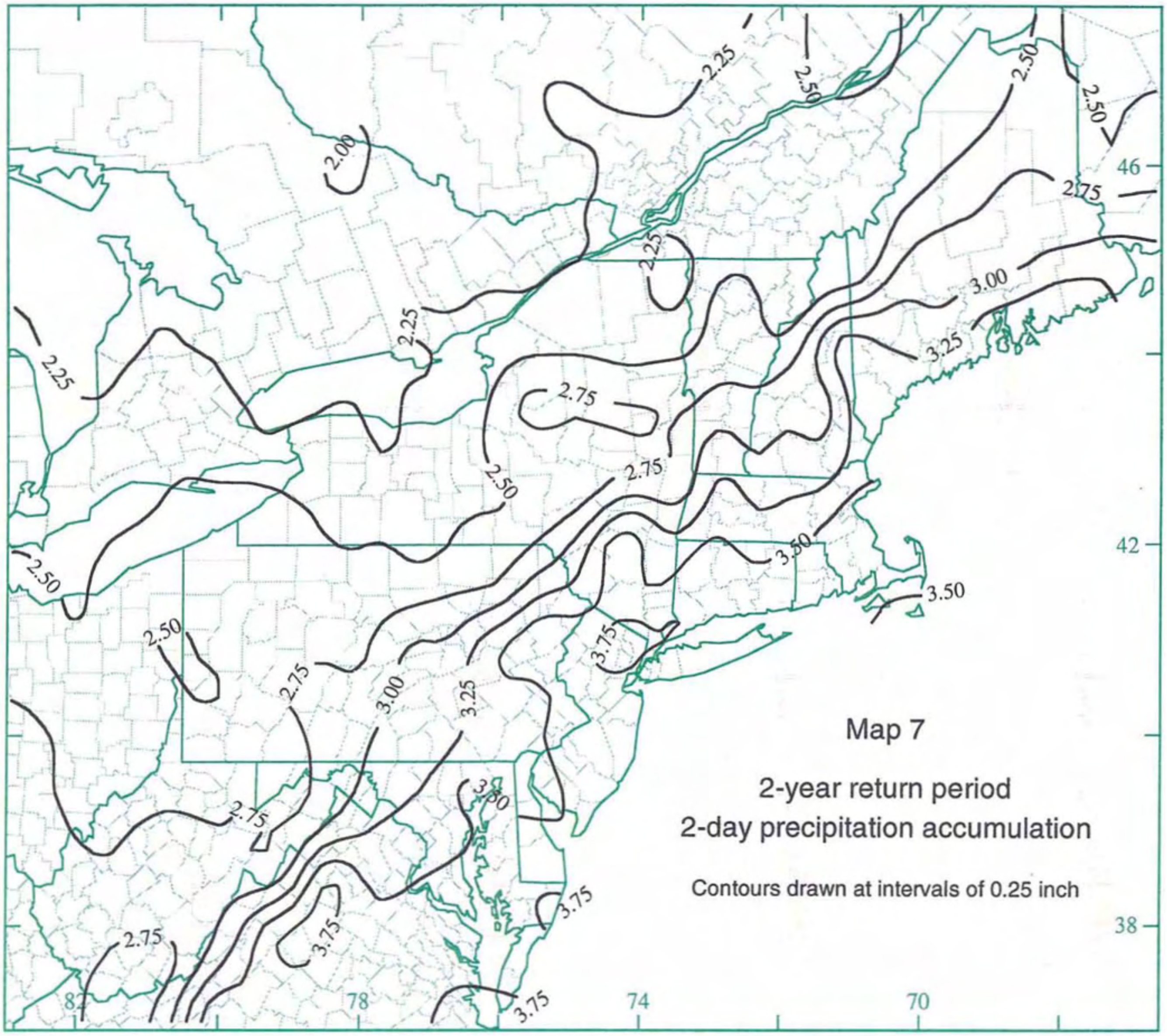


Map 5

50-year return period
1-day precipitation accumulation

Contours drawn at intervals of 0.5 inch

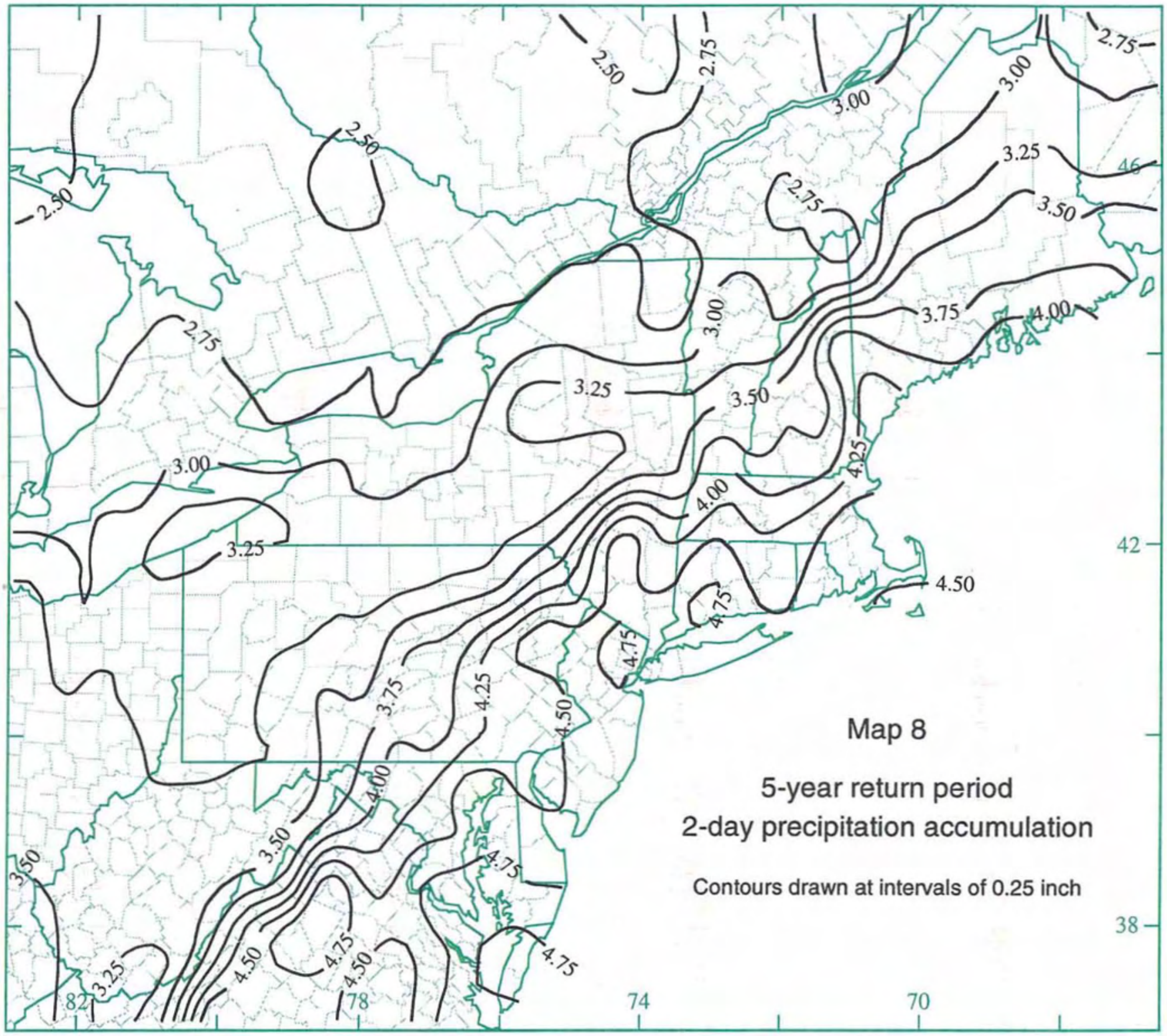

Map 6
100-year return period
1-day precipitation accumulation
Contours drawn at intervals of 1 inch
46
42
38
82
78
74
70



Map 7

2-year return period
2-day precipitation accumulation

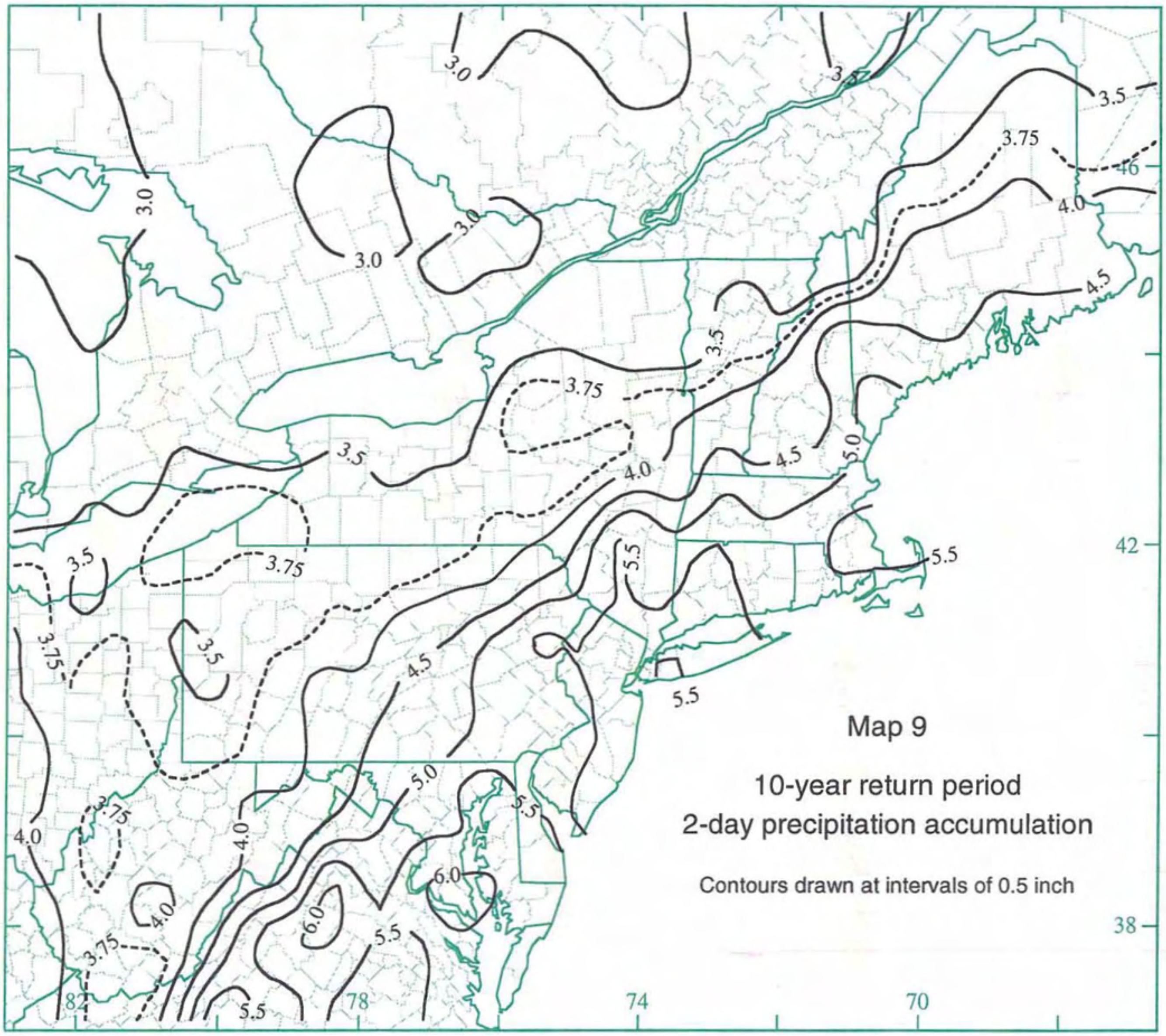
Contours drawn at intervals of 0.25 inch

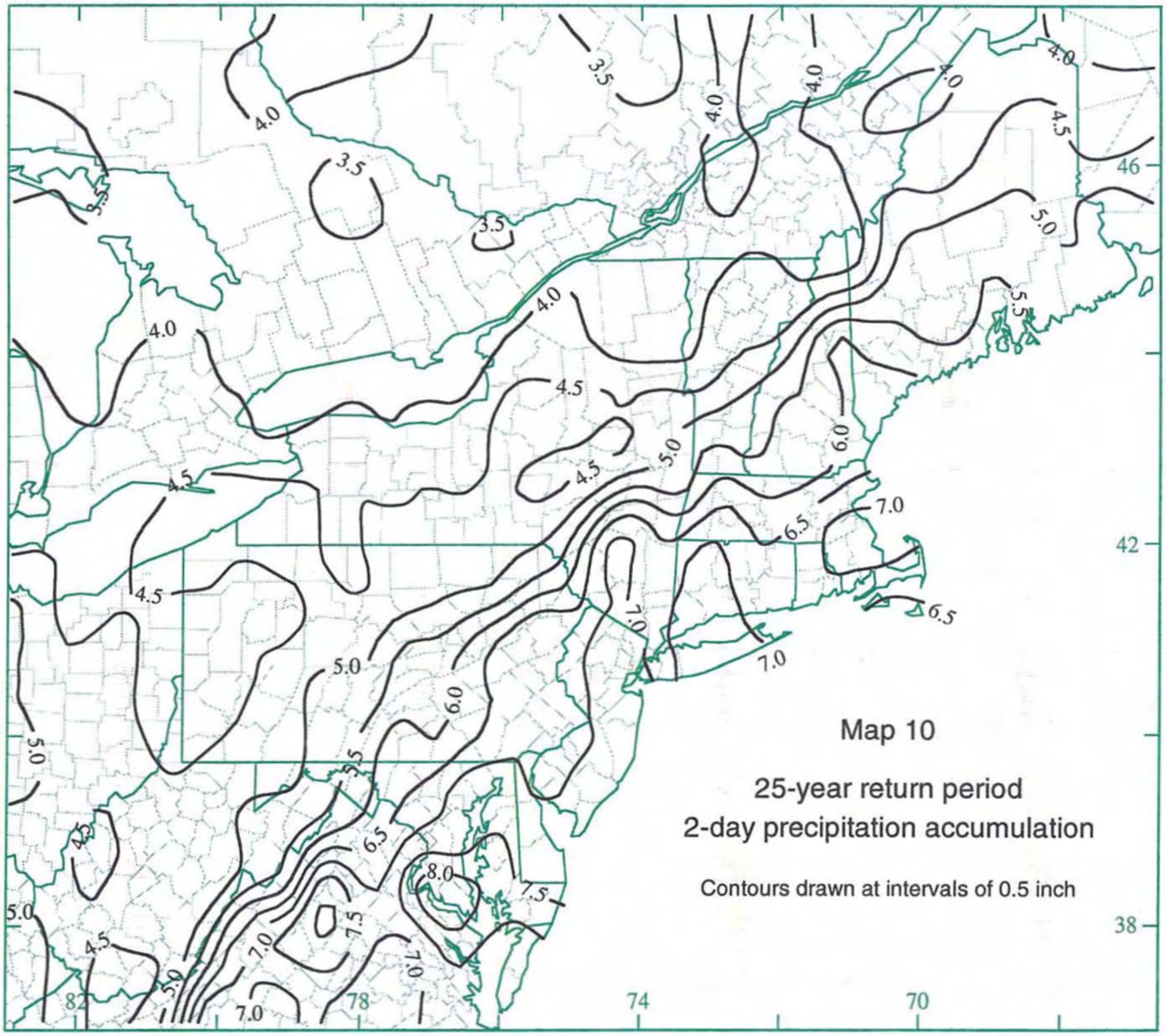


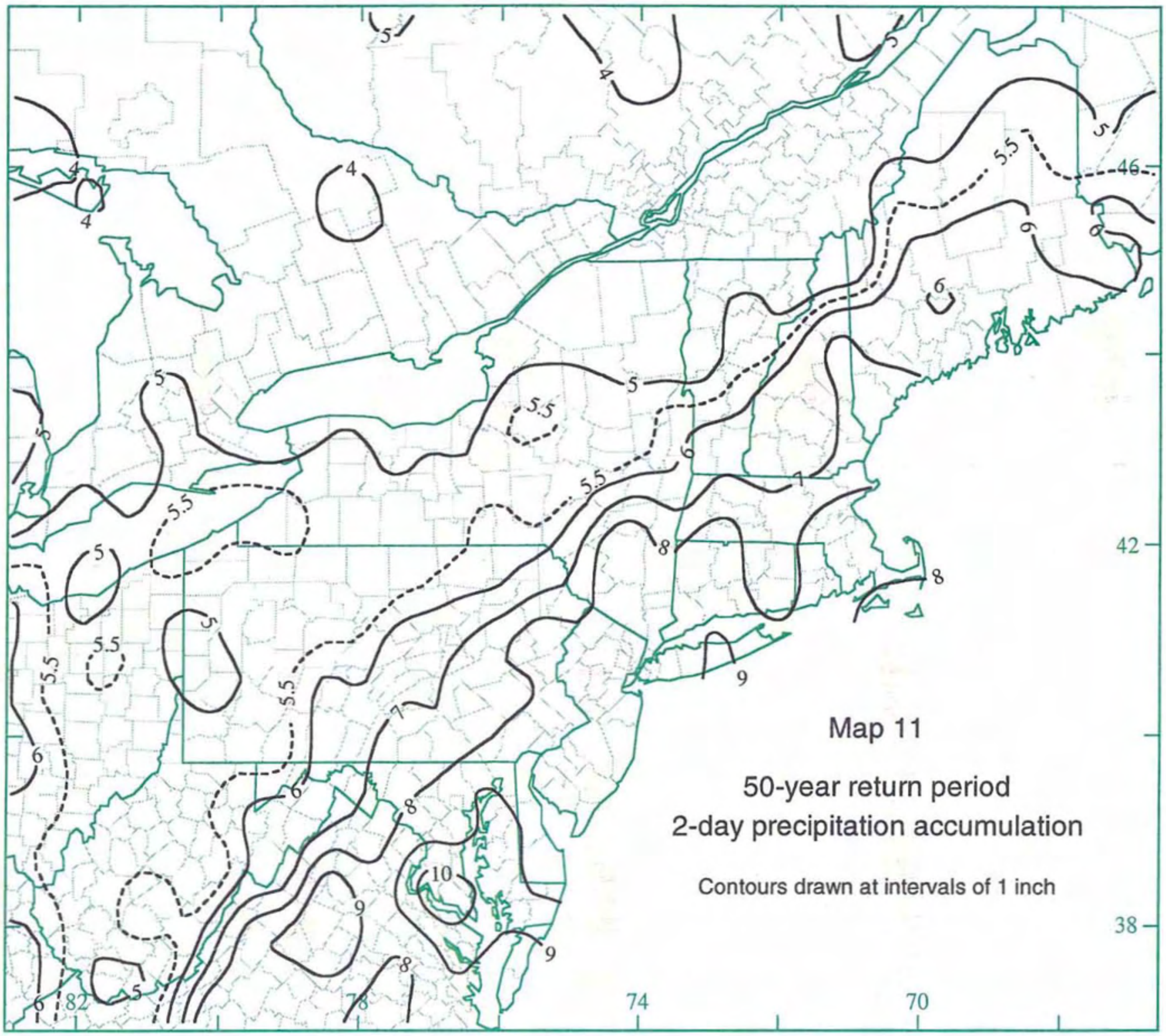
Map 8

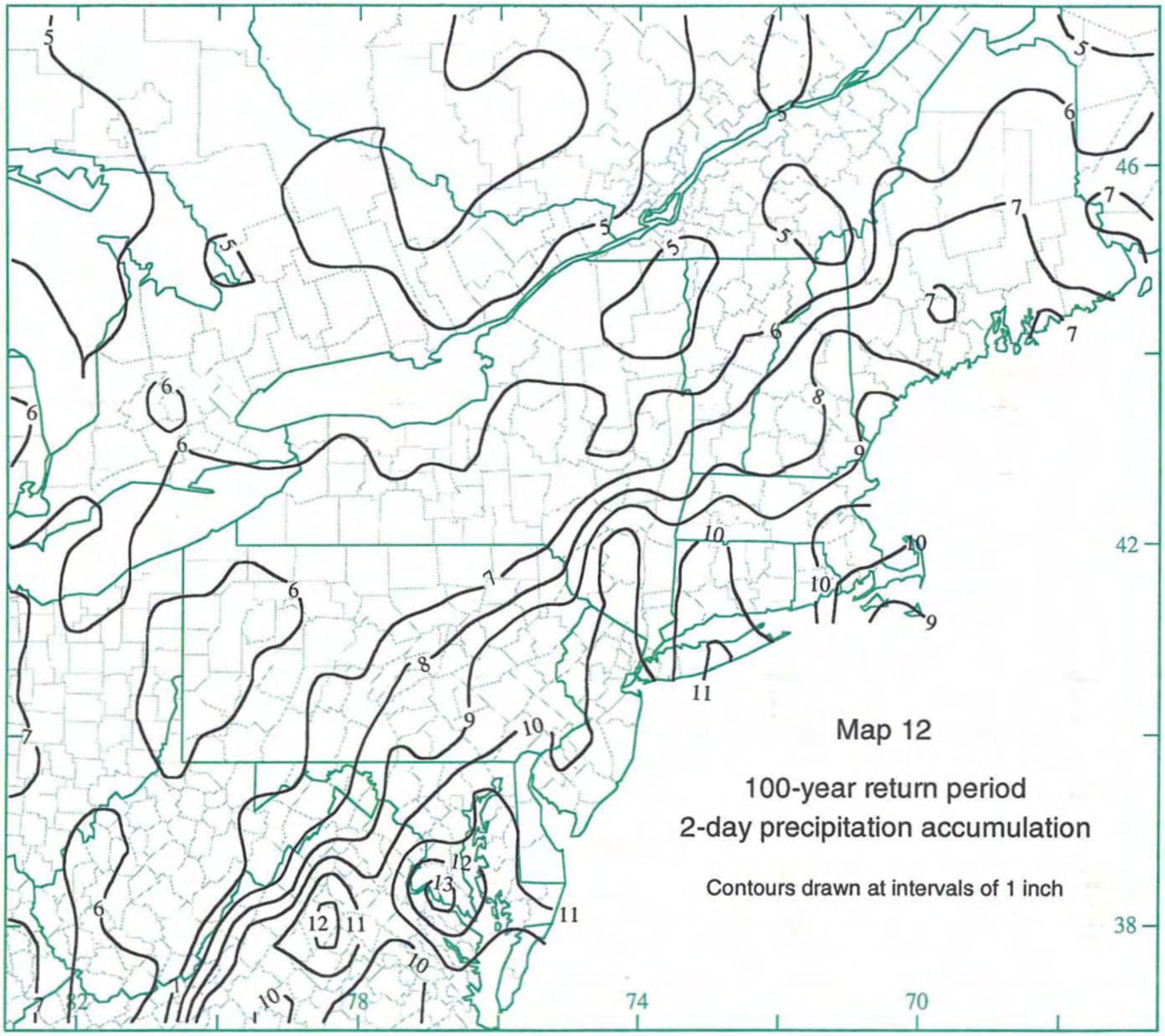
5-year return period
2-day precipitation accumulation

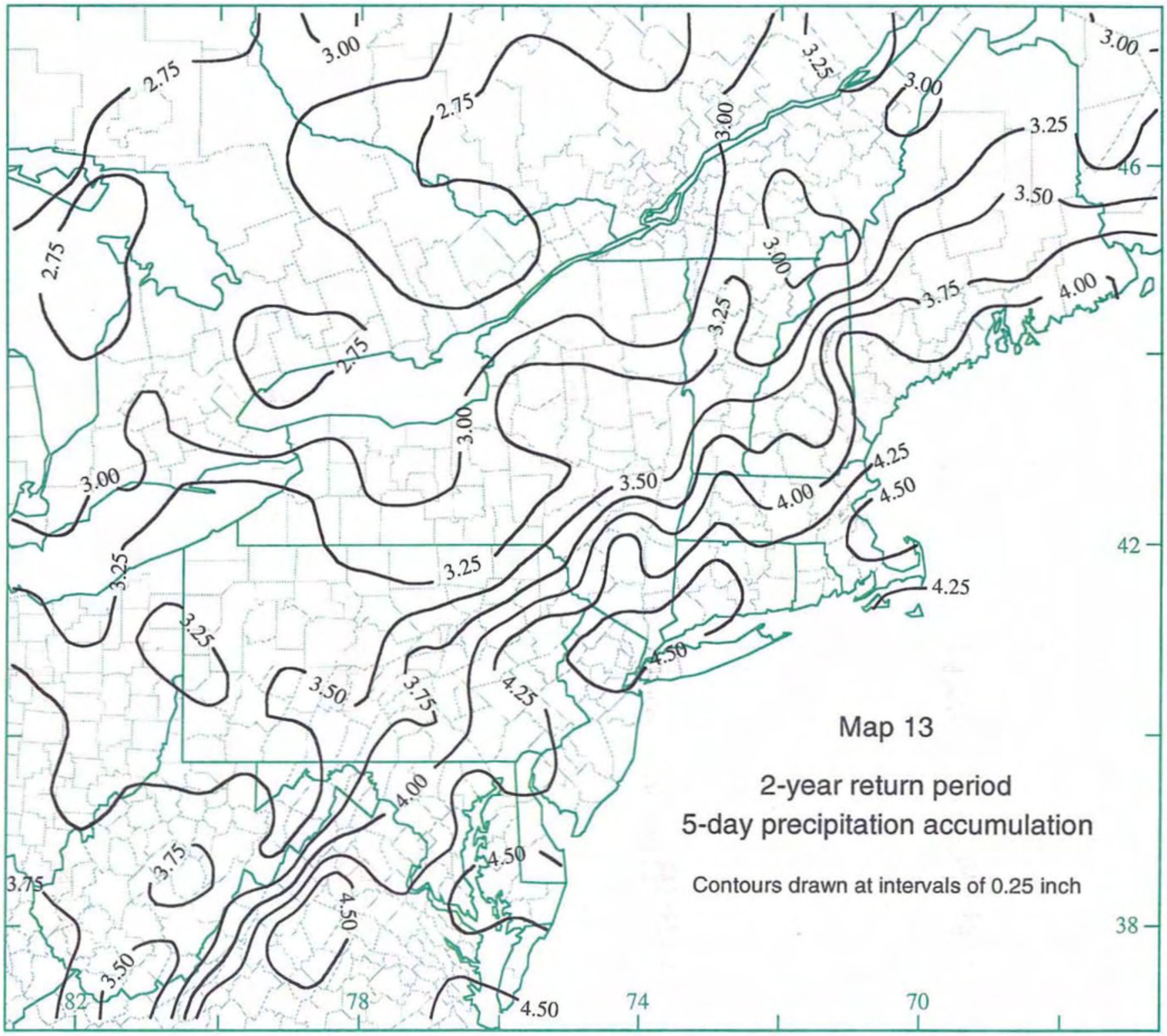
Contours drawn at intervals of 0.25 inch


Map 9
10-year return period
2-day precipitation accumulation
Contours drawn at intervals of 0.5 inch


Map 10
25-year return period
2-day precipitation accumulation
Contours drawn at intervals of 0.5 inch
46
42
38
82
78
74
70


Map 11
50-year return period
2-day precipitation accumulation
Contours drawn at intervals of 1 inch
42
38
82
78
74
70
46

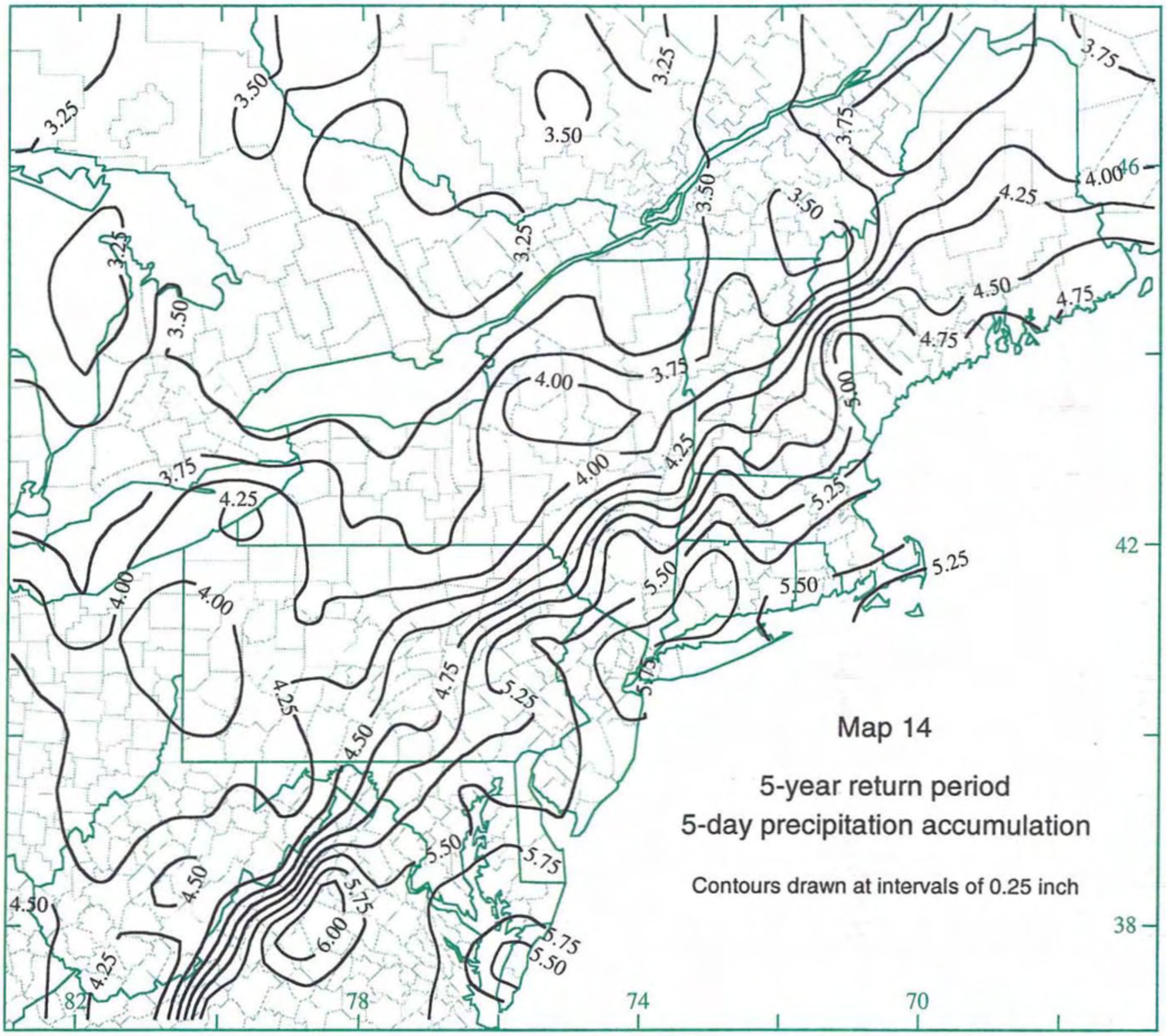

Map 12
100-year return period
2-day precipitation accumulation
Contents drawn at intervals of 1 inch
46
42
38
82
78
74
70

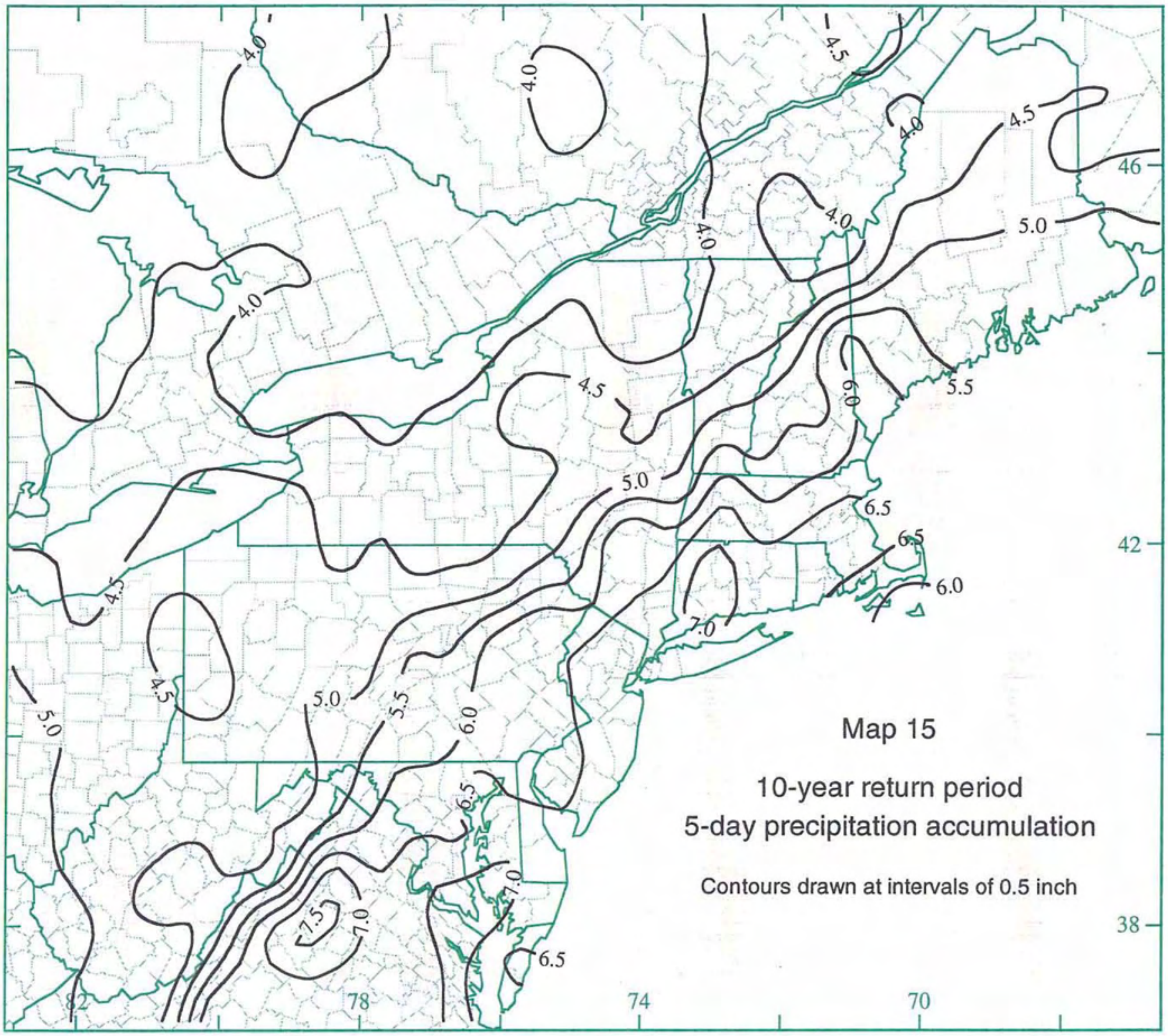


Map 13

2-year return period
5-day precipitation accumulation

Contours drawn at intervals of 0.25 inch

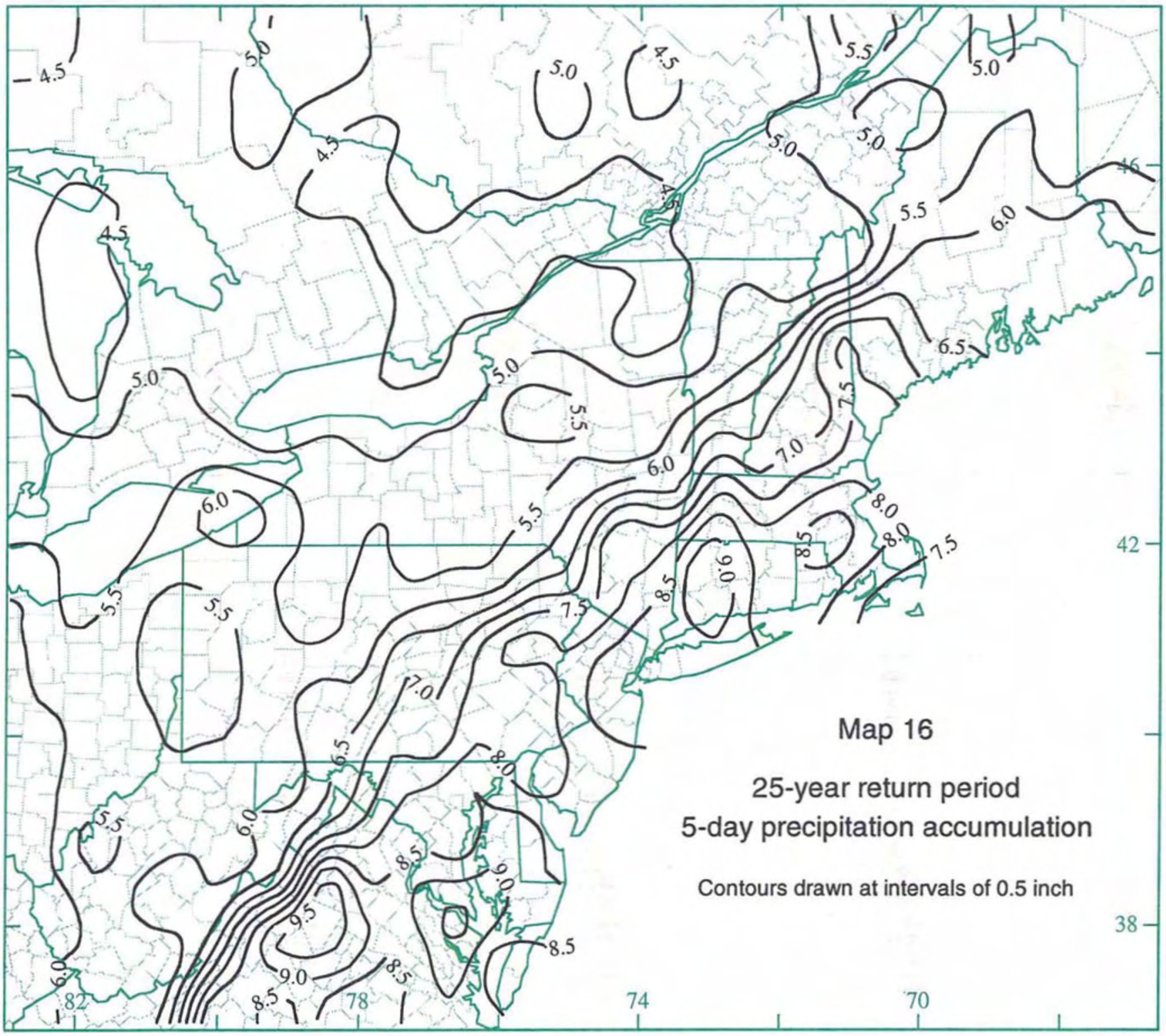

Map 14
5-year return period
5-day precipitation accumulation
Contours drawn at intervals of 0.25 inch
3.25
3.50
3.75
4.00
4.25
4.50
4.75
5.00
5.25
5.50
5.75
6.00
42
38
46
82
78
74
70



Map 15

10-year return period
5-day precipitation accumulation

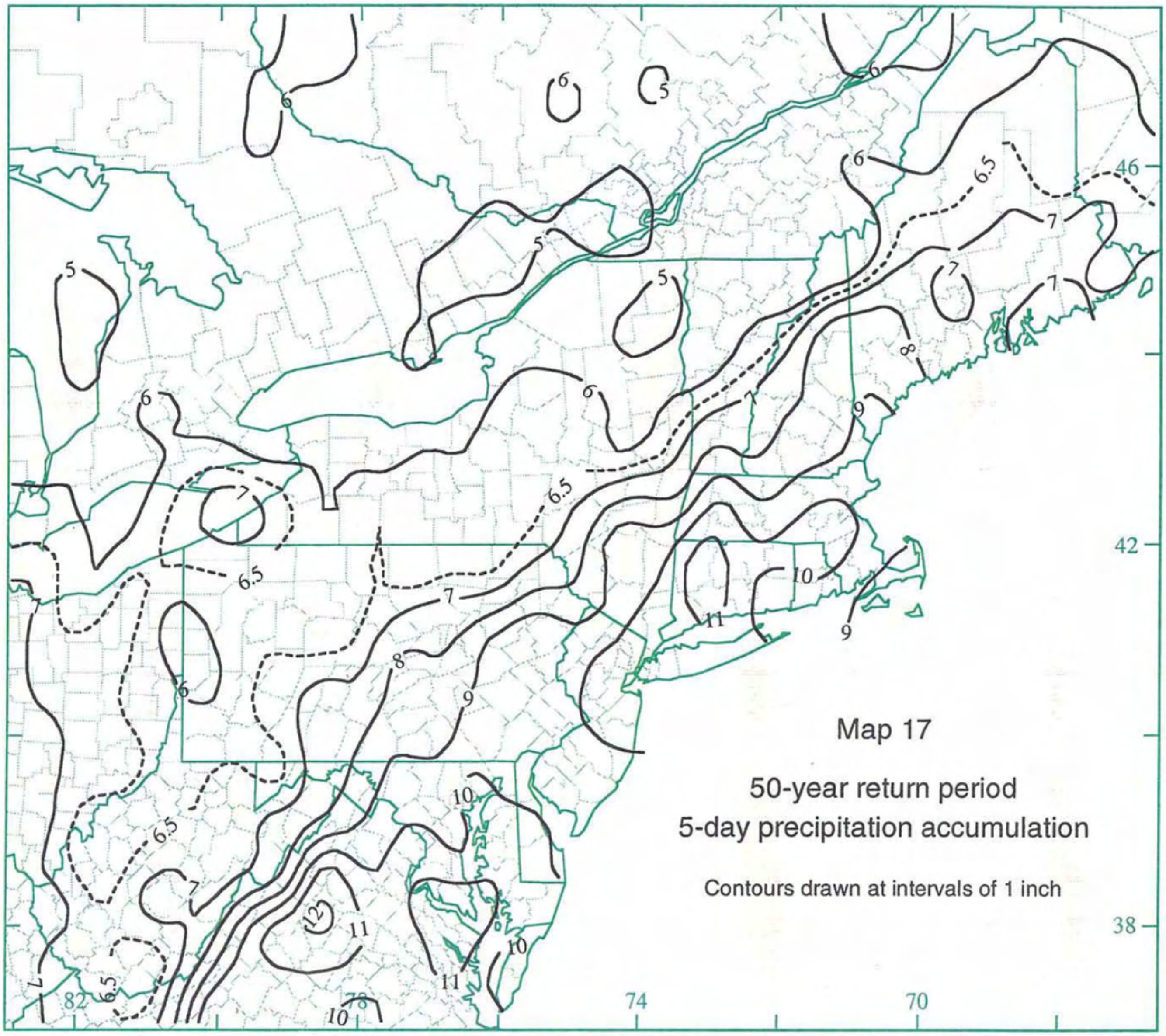
Contours drawn at intervals of 0.5 inch

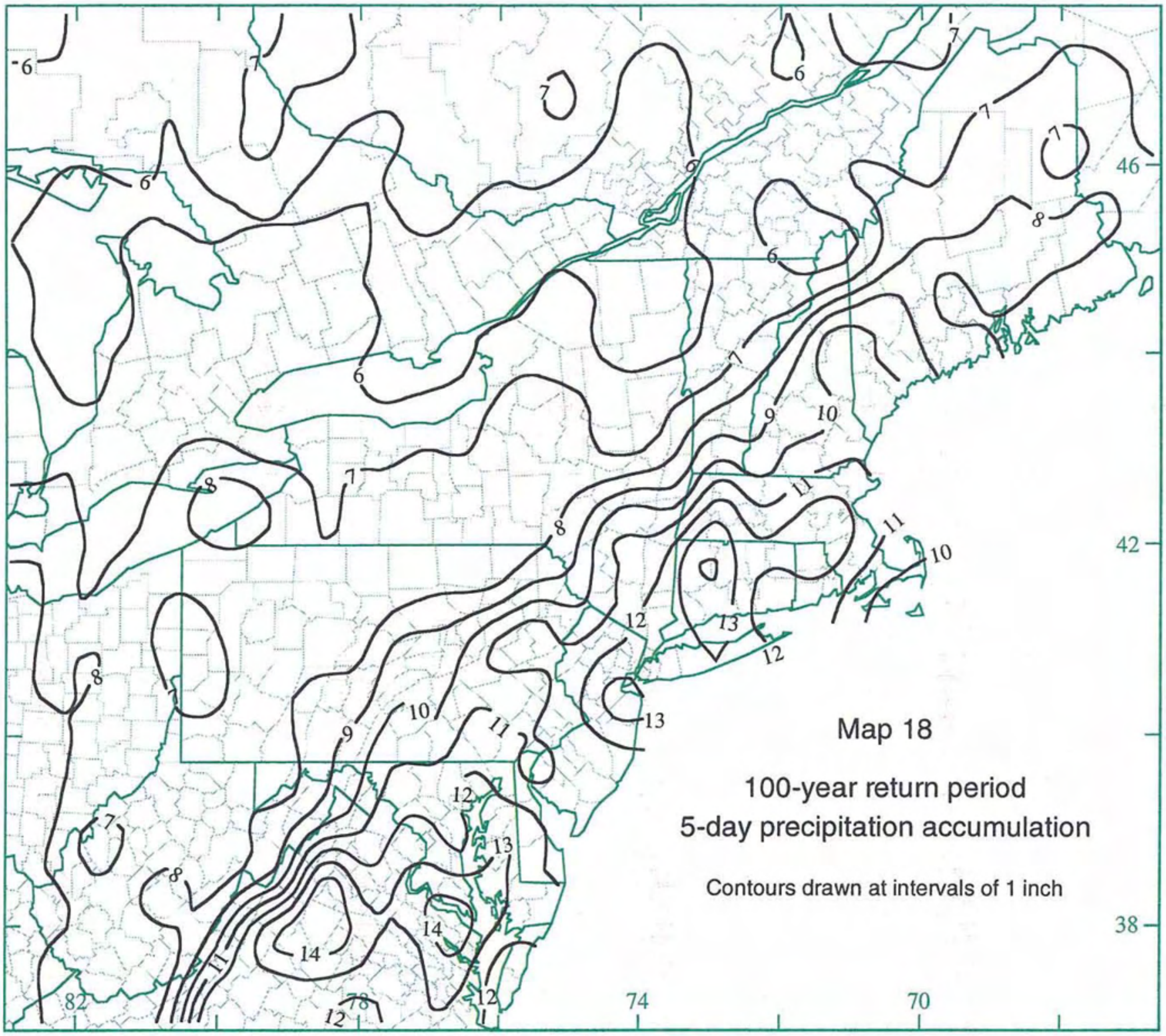


Map 16

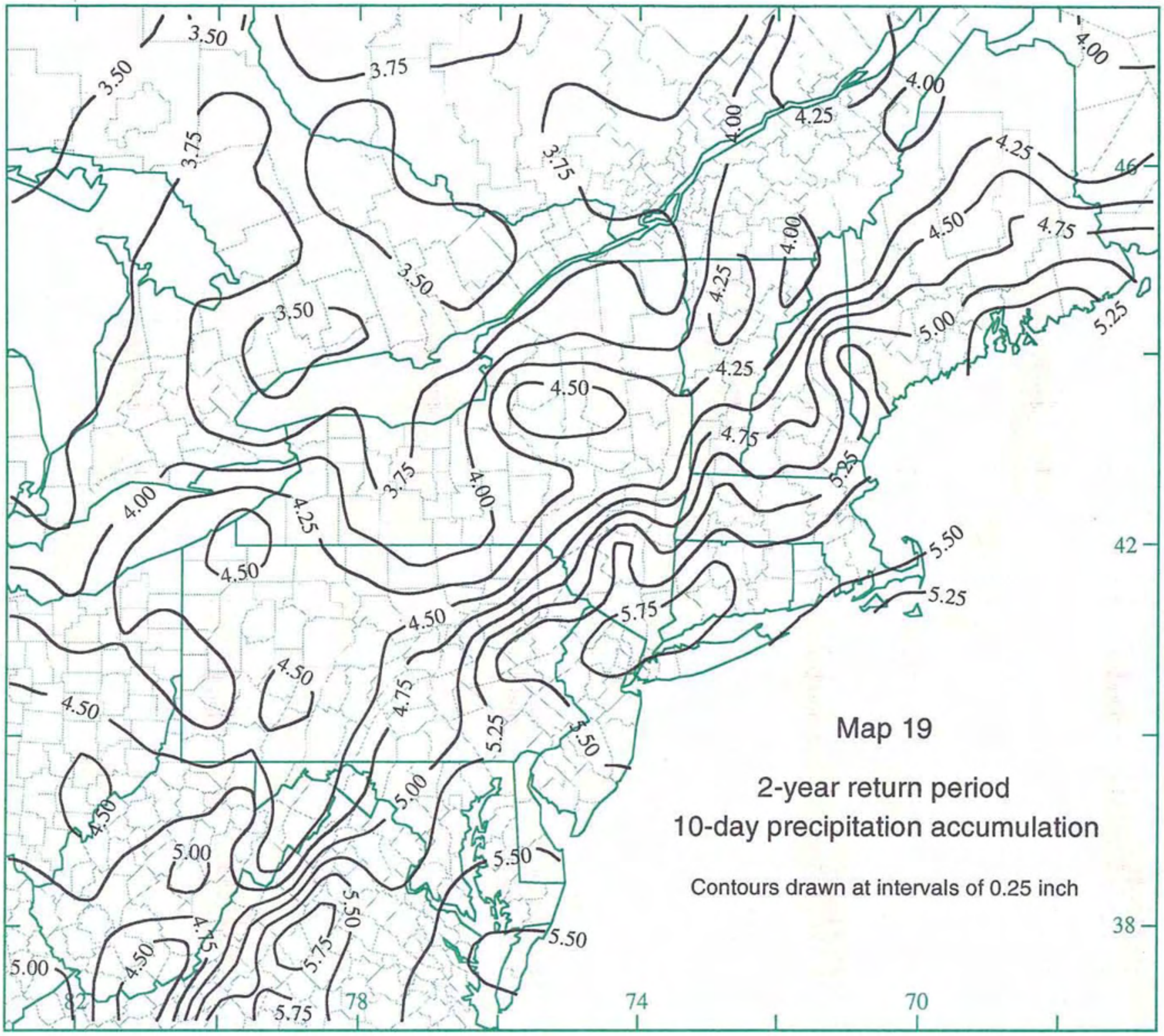
25-year return period
5-day precipitation accumulation

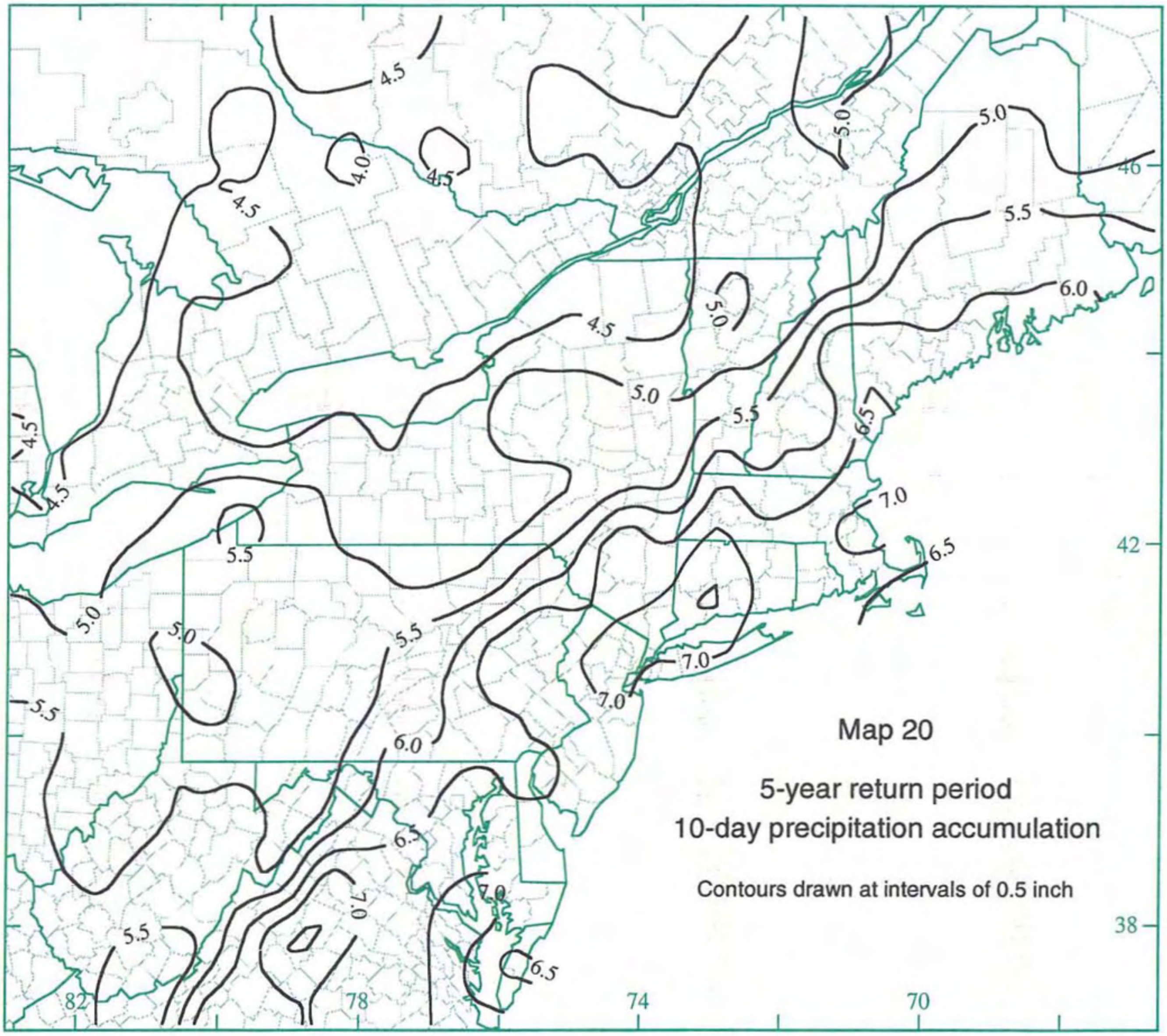
Contours drawn at intervals of 0.5 inch

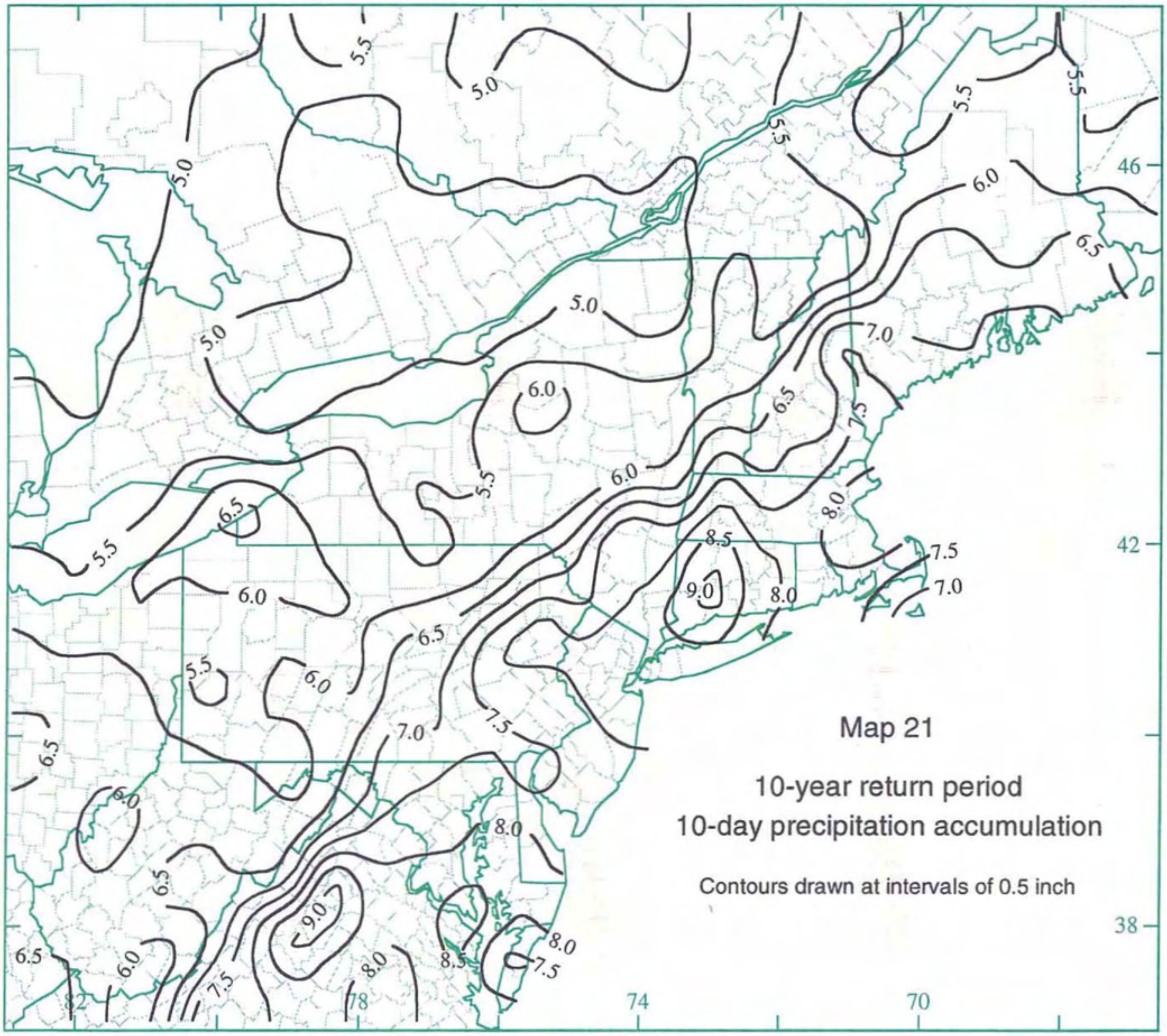

46
42
38
82
78
74
70
Map 17
50-year return period
5-day precipitation accumulation
Contours drawn at intervals of 1 inch

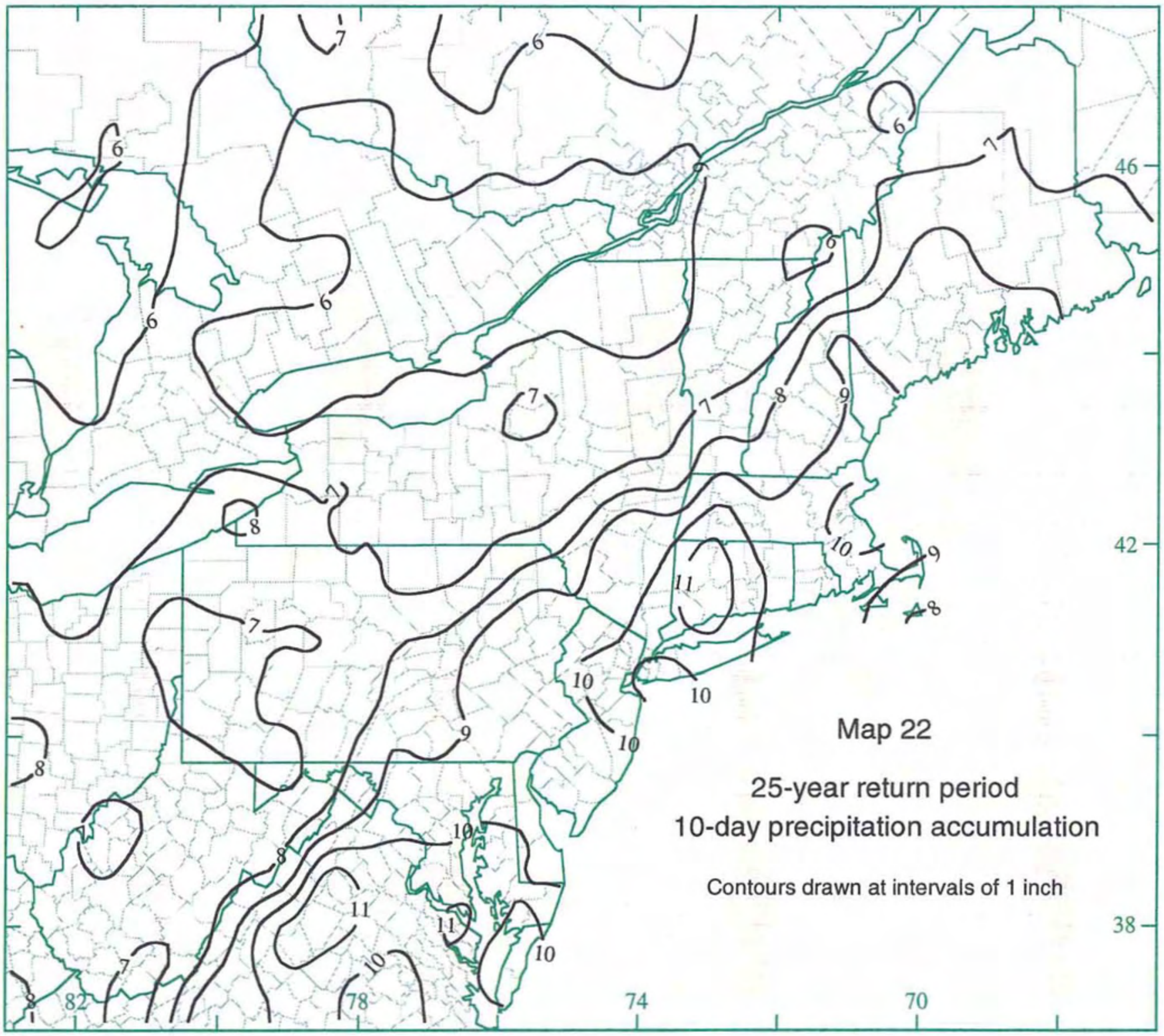


Map 18
100-year return period
5-day precipitation accumulation
Contours drawn at intervals of 1 inch
46
42
38
82
78
74
70


Map 19
2-year return period
10-day precipitation accumulation
Contours drawn at intervals of 0.25 inch
74
70
78
82
42
38
46


Map 20
5-year return period
10-day precipitation accumulation
Contours drawn at intervals of 0.5 inch
46
42
38
82
78
74
70

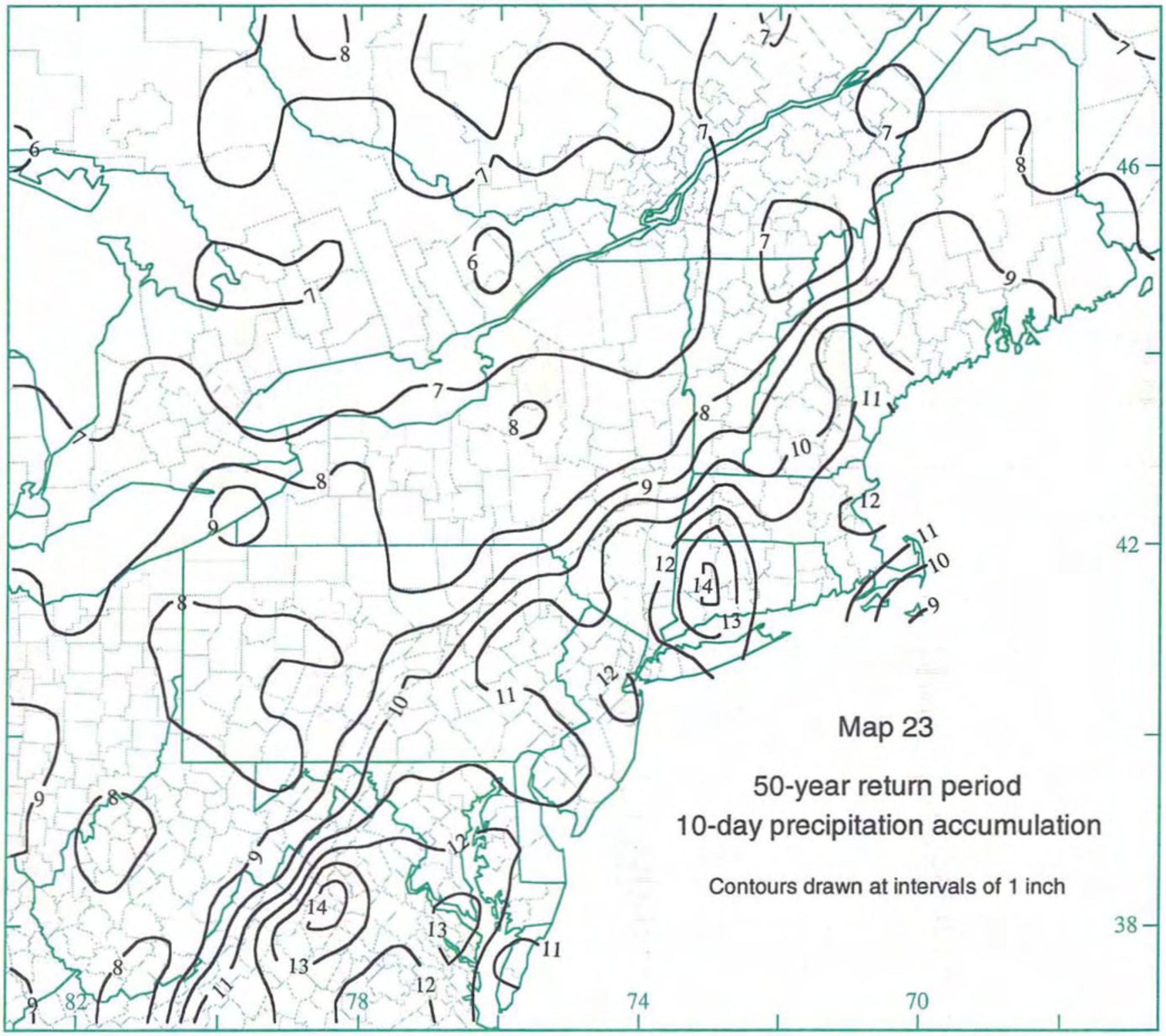

5.5
5.0
5.0
5.0
5.0
5.5
5.5
5.5
6.0
6.5
7.0
7.5
6.5
6.0
6.0
5.5
6.5
5.5
6.0
8.0
8.5
9.0
8.0
7.5
7.0
6.5
5.5
6.0
7.0
7.5
6.5
6.0
8.0
6.5
6.5
6.0
9.0
7.5
8.0
8.5
8.0
7.5
46
42
38
82
78
74
70
Map 21
10-year return period
10-day precipitation accumulation
Contours drawn at intervals of 0.5 inch

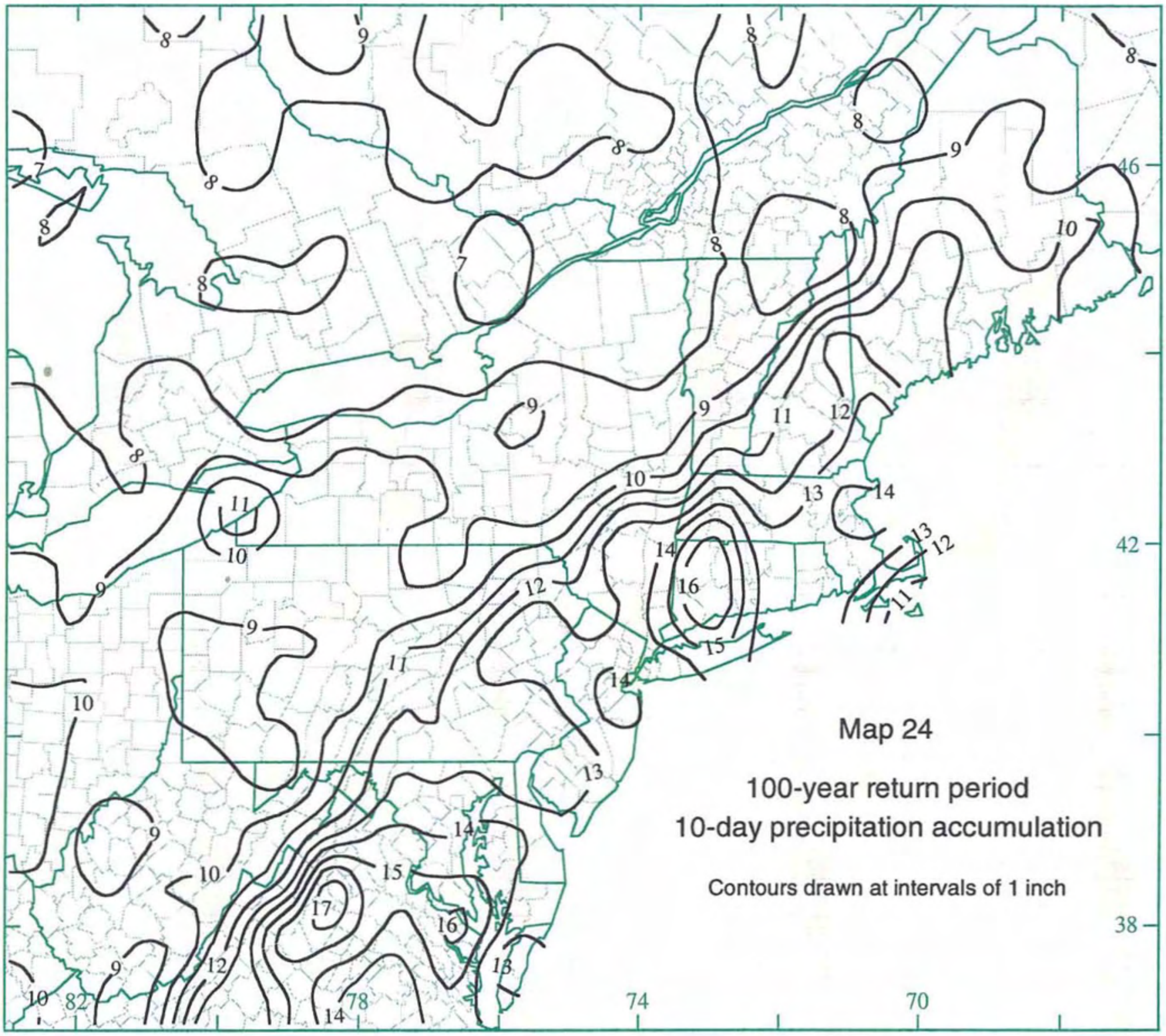


Map 22

25-year return period
10-day precipitation accumulation

Contours drawn at intervals of 1 inch


Map 23
50-year return period
10-day precipitation accumulation
Contours drawn at intervals of 1 inch
46
42
38
82
78
74
70


Map 24
100-year return period
10-day precipitation accumulation
Contours drawn at intervals of 1 inch
46
42
38
82
78
74
70

NRCC RESEARCH SERIES

Knapp, W.W. and K.L. Eggleston, *Some Impacts of Recent Climate Variability on the Northeast,* NRCC Research Publication RR 91-1.

Wilks, D.S., *Gamma Distribution Probability Tables for Use in Climatology,* NRCC Research Publication RR 91-2.

Samelson, D., *A Simple Method for Predicting Snowpack Water Equivalent in the Northeastern United States,* NRCC Research Publication RR 92-1.

Wilks, D.S., *Spline-Interpolated Parameters for Adjusting Climatological Precipitation Distributions using the 30- and 90-Day Outlooks,* NRCC Research Publication RR 92-2.

Cember, R.P. and D.S. Wilks, *Climatological Atlas of Snowfall and Snow Depth for the Northeastern United States and Southeastern Canada,* NRCC Research Publication RR 93-1.

DeGaetano, A.T., K.L. Eggleston, and W.W. Knapp, *A Method to Produce Serially Complete Daily Maximum and Minimum Temperature Data for the Northeast,* NRCC Research Publication RR 93-2.

DeGaetano, A.T., W.W. Knapp, and K.L. Eggleston, *Standardizing Growing Degree Day Totals for Differences in Temperature Observing Schedules,* NRCC Research Publication RR 93-3.

DeGaetano, A.T., K.L. Eggleston, and W.W. Knapp, *Daily Solar Radiation Estimates for the Northeastern United States,* NRCC Research Publication RR 93-4.

NRCC DIGITAL DATA SETS

Eggleston, K.L. and D.S. Wilks, *Gridded Monthly Precipitation Distribution Parameters for the Continental United States,* NRCC Data Set DS 92-1.

Cember, R.P., K.L. Eggleston, and D.S. Wilks, *Digital Snowfall and Snow Depth Probabilities for the Northeastern United States and Southeastern Canada,* NRCC Data Set DS 93-1.

CORNELL
UNIVERSITY
Department of Soil, Crop and Atmospheric Sciences
Ithaca, New York 14853

Produced by
Northeast Regional Climate Center
4/99 2C/6C 125-8365