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Effectiveness of the New Hampshire Stream-Gaging Network in Providing Regional Streamflow Information

Water-Resources Investigations Report 03-4041

U.S. Department of the Interior
U.S. Geological Survey

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U.S. GEOLOGICAL SURVEY

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Pembroke, New Hampshire
2003

U.S. DEPARTMENT OF THE INTERIOR

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CONVERSION FACTORS

Multiply	By	To obtain
foot (ft)	0.3048	meter (m)
mile (mi)	1.609	kilometer (km)
square mile (mi^2)	2.589	square kilometer (km^2)
cubic foot (ft^3)	0.09290	square meter (m^2)
cubic foot per second (ft^3/s)	0.02832	cubic meter per second (m^3/s)

VERTICAL DATUM

Vertical coordinate information is referenced to the National Geodetic Vertical Datum of 1929 (NGVD of 1929).

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ABSTRACT

The stream-gaging network in New Hampshire was analyzed for its effectiveness in providing regional information on peak-flood flow, mean-flow, and low-flow frequency. The data available for analysis were from stream-gaging stations in New Hampshire and selected stations in adjacent States. The principles of generalized-least-squares regression analysis were applied to develop regional regression equations that relate streamflow-frequency characteristics to watershed characteristics. Regression equations were developed for (1) the instantaneous peak flow with a 100-year recurrence interval, (2) the mean-annual flow, and (3) the 7-day, 10-year low flow. Active and discontinued stream-gaging stations with 10 or more years of flow data were used to develop the regression equations.

Each stream-gaging station in the network was evaluated and ranked on the basis of how much the data from that station contributed to the cost-weighted sampling-error component of the regression equation. The potential effect of data from proposed and new stream-gaging stations on the sampling error also was evaluated. The stream-gaging network was evaluated for conditions in water year 2000 and for estimated conditions under various network strategies if an additional 5 years and 20 years of streamflow data were collected.

The effectiveness of the stream-gaging network in providing regional streamflow information could be improved for all three flow characteristics with the collection of additional flow data, both temporally and spatially. With additional years of data collection, the greatest reduction in the average sampling error of the regional regression equations was found for the peak- and low-flow characteristics. In general, additional data collection at stream-gaging stations with unregulated flow, relatively short-term record (less than 20 years), and drainage areas smaller than 45 square miles contributed the largest cost-weighted reduction to the average sampling error of the regional estimating equations. The results of the network analyses can be used to prioritize the continued operation of active stations, the reactivation of discontinued stations, or the activation of new stations to maximize the regional information content provided by the stream-gaging network. Final decisions regarding altering the New Hampshire stream-gaging network would require the consideration of the many uses of the streamflow data serving local, State, and Federal interests.

INTRODUCTION

The earliest known systematic record collection of surface-water data in New Hampshire began in 1886 on the Pemigewasset River at Plymouth, N.H., by the Proprietors of Locks and Canals at Lowell. By 1900, the U.S. Geological Survey (USGS) began operating stream-gaging stations in the State of New Hampshire. Through the years, the stream-gaging program has evolved as Federal and State interests in surface-water resources have increased and as funds for operating the stream-gaging network have become available. Today, more than 45 stations are operated as a multi-purpose network funded by USGS and other Federal, State and local agencies.

The USGS has operated most of the stream-gaging network in New Hampshire on behalf of multiple cooperators to achieve consistency of data collection and analysis, quality control, and wide availability of resultant databases, and economies of scale. Funding for a station typically is shared in proportion to the extent of Federal interests relative to those of the cooperating agencies, and ranges from full USGS funding to full funding by the cooperator. Because the streamflow data-collection networks in New Hampshire have evolved in response to a diverse range of needs during the past 100 years, it is important to periodically examine these networks relative to their effectiveness in meeting current and anticipated data needs.

Individual stream-gaging stations in the network typically have been installed and funded for specific purposes, such as flood forecasting and warnings, flood-control operations, operation of lakes and reservoirs, water allocation, monitoring of streamflow withdrawals, and water-quality management, including the maintenance of instream flows. Long-term flow records are necessary to assess water resources, the flow-frequency characteristics of streams, and trends in basin yield.

Streamflow characteristics often are needed at a site where no data have been collected. In this situation, estimating techniques, usually based on regional regression equations of selected streamflow and basin characteristics, are used to estimate the desired streamflow characteristic. Although stations rarely are established exclusively to provide information for these estimation techniques, it is important that the stream-gaging network as a whole is effective in providing regional streamflow coverage. A stream-gaging network that is effective in providing regional streamflow information will result in accurate regional regression equations for estimating streamflow characteristics at ungaged locations. In 2002, the USGS and the New Hampshire Department of Environmental Services (NHDES) began a cooperative study to evaluate if the current (2000) stream-gaging network is effective in providing regional streamflow information.

Purpose and Scope

This report presents an analysis of the stream-gaging network in New Hampshire. The network analysis conducted for this investigation identifies the contribution of each stream-gaging station in New Hampshire to regional streamflow information. This contribution is expressed in terms of a cost-weighted reduction in the average sampling error associated with a regional regression equation. The stream-gaging network was analyzed for the 2000 water year (ending September 30, 2000) and for the 5- and 20-year planning horizons.

Specifically, this report (1) identifies the value and uses of the New Hampshire stream-gaging network; (2) identifies the stations in New Hampshire and adjacent areas for which 10 or more years of record are available; (3) describes the development of regional regression equations for estimating selected peak-flow, mean-flow, and low-flow characteristics; (4) ranks the stations in terms of their contribution in reducing the average sampling error of the regional regression equations; and (5) proposes the activation of new stations in underrepresented basins where additional streamflow data would improve regional streamflow information.

Previous Studies

Two earlier evaluations of the stream-gaging network applicable to New Hampshire have been published. Johnson (1970) evaluated the stream-gaging network of central New England. One of the major findings of this study was the lack of representation of drainage basins smaller than 15 mi^2. Smath and Blackey (1985) evaluated the combined New Hampshire and Vermont stream-gaging networks. This study showed areas of poor hydrologic data coverage and recommended the establishment of a station on the Ossipee River and a station in the White Mountains. Neither study, however, used the technique of generalized-least-squares (GLS) regression to ascertain which stations were most effective in minimizing the error of regional regression equations.

Acknowledgments

The streamflow data at stream-gaging stations in New Hampshire have been collected largely through the cooperation of the USGS with many other agencies. The USGS wishes to thank all the Federal, State, and local cooperators who assist or have assisted in funding the stream-gaging network. In particular, the U.S. Army Corps of Engineers and the New Hampshire Department of Environmental Services have made substantial, long-term contributions to the operation of the network.

DESCRIPTION OF THE STREAM-GAGING NETWORK IN NEW HAMPSHIRE

In August 1900, the USGS began collecting streamflow data on the Connecticut River at Orford, N.H. By 1903, stations were added on the Merrimack River at Franklin Junction, N.H., and the Contoocook River at West Hopkinton, N.H. Flooding in 1927, 1936, and 1938, along with interest in developing reservoir sites, led to the expansion of the stream-gaging program to 32 stations by 1939. Interest in the streamflow characteristics of small drainage basin (less than 10 square miles [mi^2]) prompted the establishment of many new stream-gaging stations in the 1960s. The number of continuous recording stations on New Hampshire’s waterways peaked at 64 in 1970.

Currently (2002 water year), 45 continuous recording stations, 1 lake station, and 6 peak-flow stations are operated on New Hampshire waterways as a multi-purpose network funded by USGS and other Federal, State and local agencies. Near real-time data from nearly all the stations are made available to the public by satellite and the World Wide Web (http://nh.water.usgs.gov/) updated every 4 hours, and more frequently in times of flooding. More than 13,000 pages of New Hampshire real-time stream-gaging data are requested over the Web site each month. This availability of near real-time stream-gaging data has improved the ways and timeliness with which water-resource managers can respond to floods and droughts. The existing stream-gaging network provides vital information that safeguards lives, property, and water resources; however, the increasing costs of stream-gaging operations and the constraints on funds and manpower limit the number of stations serving local, State, and Federal interests.

Funding for a station often is shared in proportion to the extent of Federal interests relative to those of the cooperating agencies, and ranges from full USGS funding to full funding by the cooperator. This funding scheme has led to instability in the number of stations in the network. The National Streamflow Information Program (NSIP) was created to reverse the loss of stations nationwide and to provide a more stable network of stations that address Federal interests through direct allocation of Federal funds to the USGS.

The NSIP was designed to meet five Federal objectives, including the collection of (1) critical streamflow information, in real time, for flood forecasting; (2) long-term streamflow information, unaffected by regulation or diversion, for improving techniques for estimating streamflow characteristics at ungaged locations and for assessing the response of streamflow to changes in climate and land use; (3) accurate and impartial streamflow data at State and International boundaries; (4) streamflow information for supporting USGS water-quality networks; and (5) streamflow information needed by resource managers to track and quantify water budgets (Hirsch and Norris, 2001). In New Hampshire, 45 stream-gaging stations meet at least one of the Federal objectives. Of these 45 stations, 39 are active stations operated by the USGS, 2 are partial-record stations, 2 are discontinued stations, 1 is a proposed station, and 1 is operated by an agency other than the USGS (http://water.usgs.gov/nsip/). Maintaining or re-establishing data collection at Federal-interest sites is a priority of NSIP; however, budgetary constraints limited the number of New Hampshire stations receiving NSIP funding, or partial funding, to 14 stations.

The New Hampshire stream-gaging network serves State and local interests in addition to Federal interests. In fact, the network has evolved in response to specific data needs rather than a planned information-collection system. Of the stations, 25 are used for flood control operations, 18 are used in flood forecasting, 10 are used for the management of water resources and water quality, and 7 are used to manage hydropower generation. Many stations have more than one use (table 1, back of report). Streamflow data also are valuable for assessing flood and drought conditions, defining long-term hydrologic trends related to changes in land use or climate, evaluating riverine habitat required of fish and bird populations, assessing flood risks and developing accurate flood insurance rate and zoning maps, and designing bridges, culverts, dams, and wastewater-treatment facilities. The ski industry relies on data from stream-gaging stations to manage snowmaking operations. Outdoor enthusiasts, from canoeists to fishermen, benefit from streamflow data as well.

With the current stream-gaging network, most major waterways in New Hampshire are gaged. Several significant drainages are not gaged, however, including the Swift River in the Saco River Basin; Israel River, Nash Stream, Wild Ammonoosuc River, and Gale River in the Upper Connecticut River Basin; Cold River in the Upper Connecticut-Mascoma River Basin; Peabody River in the Upper Androscoggin River Basin; and Suncook River in the Merrimack River Basin.

A stream-gaging network that is effective in providing regional information must have stations with basin characteristics representing the range of those characteristics that will be encountered throughout the region. The range of a selected basin characteristic provided by the stream-gaging network and how well the range is covered by active stream-gaging stations in New Hampshire are shown in figures 1a-e. Each line in a graph represents a station.

A review of the graphs indicates that there is a gap in the network of stations representing sites having a drainage area of 15-35 mi^2 (fig. 1a), and a lack of stations that have most of their drainage in an urban land-use area (fig. 1b). Mean stream slope (fig. 1c) and mean basin elevation (fig. 1d) are well represented, considering the ranges of these characteristics applicable to New Hampshire. There seems to be a lack of sites representing mean annual precipitation greater than 50 in. (fig. 1e). Considering that the land area of New Hampshire having mean annual precipitation greater than 50 in. is relatively small, however, this gap is considered inconsequential.

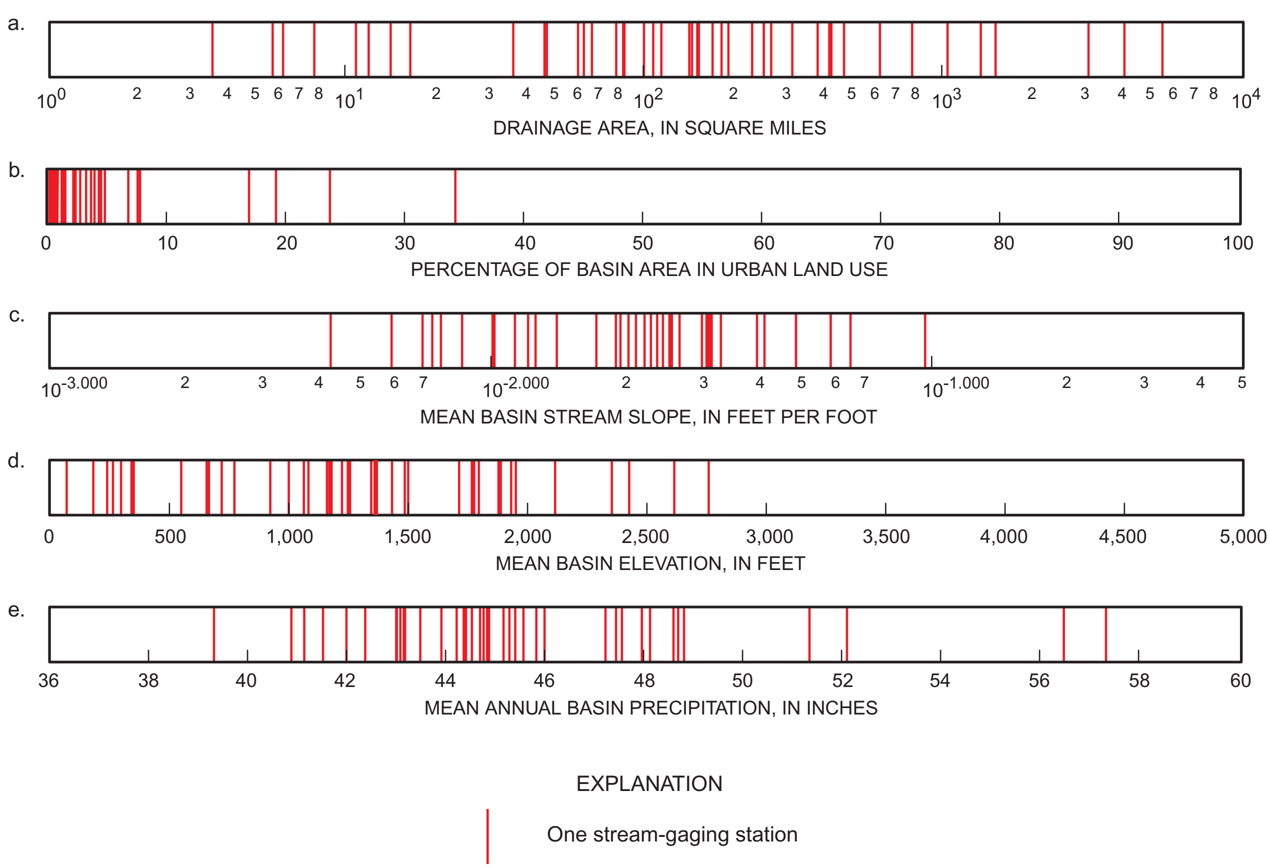


Figure 1. Distribution of stream-gaging station characteristics in New Hampshire.

NETWORK ANALYSIS

Network analysis is used to maximize the amount of regional streamflow information obtainable under specified time and budget restraints. The network-analysis methods used in this study are based on GLS regression (Tasker and Stedinger, 1989). Tasker (1986) describes the mathematical formulation of the network-analysis methods used in this study. These methods have been refined and incorporated into the software generalized-least-squares and NETwork analysis (GLSNET) (Tasker, G.D., Flynn, K.M., Lumb, A.M., and Thomas, Jr., W.O., U.S. Geological Survey, written commun., 1995).

Description of Technique

The network analysis done in this study is based upon reducing the error associated with regional regression equations used for estimating flow characteristics at ungaged stream locations. The equations are developed from streamflow and basin characteristics at gaged locations. For regionalization to be effective, the range of basin characteristics of the stream-gaging stations in a network must represent the range of basin characteristics that will be encountered throughout the region. An optimum regional network would include flow data from stream-gaging stations that spatially cover the region of interest, have an adequate length of record, and provide a complete range of basin and streamflow characteristics (Straub, 1998). The results of this network evaluation allow the ranking of stream-gaging stations in order of their contribution to regional streamflow information. The application of this ranking, along with other means of identifying the usefulness of a station, is an integral part of determining how to apply funds and manpower in order to best meet all hydrologic data needs.

Generalized-least-squares regression is used to develop regional regression equations that would be used to estimate streamflow characteristics at ungaged sites. The principles of GLS are then utilized to estimate the prediction mean-square error at each stream-gaging station for a flow characteristic being estimated by a regional regression equation. The prediction mean-square error for a given site consists of a sampling error and a model error. The sampling error is a measure of the error in the regression prediction as a result of the regression equation being developed with observed (sampled) streamflow characteristics instead of true streamflow characteristics. It is a function of record length, basin characteristics, and the location of the site in relation to other stations. Sampling error can be reduced by collecting additional streamflow data at new or existing sites. The model error can be reduced only by choosing a better form of the model. Tasker (1986) describes the mathematical formulation for computing the sampling error, E_{samp}, of a flow-frequency estimate as

$$E_{samp} = [x_i(X^T \Lambda^{-1} X)^{-1} x_i^T]^{1/2}, \qquad (1)$$

where

x_i is a row vector of the logarithms of the basin characteristics for the study site i, augmented by a 1 as the first element;

T is the matrix algebra symbol for transposing the matrix; and

$(X^T \Lambda^{-1} X)^{-1}$ is the (p x p) matrix with X being a (n x p) matrix that has a row of logarithmically transformed basin characteristics augmented by a leading 1 and Λ being the (n x n) covariance matrix used for weighting sample data in the GLS regression; n is the number of stream-gaging stations used in the regression analysis and p is the number of basin characteristics, plus 1.

Because x_i is not required to be a row of X, sampling error at an ungaged location also can be estimated with equation 1. If the model error is assumed to be constant, then a network analysis can be performed by investigating the effect of data from each existing or proposed stream-gaging station on the sampling error, averaged over all stations in the analysis.

The GLSNET software uses these concepts to determine the relative contribution of each station in providing regional streamflow information. The program determines which station provides the smallest cost-weighted reduction in the average sampling error and selects this station to be removed from the analysis. Each station is incrementally removed from the network until no stations remain. The last station that is removed from the network contributes the largest cost-weighted reduction in the average sampling error. Reversing the order in which GLSNET removes stations from the network provides a ranking for the stream-gaging stations in order of their value in providing regional streamflow information. A proposed station can be included in the network analysis because sampling error is a function of basin characteristics and the station location in relation to other stations in the network.

Application of the Network Analysis Technique

Network analyses were done for three flow characteristics selected to represent peak-flood flow, mean flow, and low flow—the instantaneous peak discharge with a 100-year recurrence interval, the mean annual discharge, and the 7-day, 10-year low flow, respectively. Stream-gaging stations selected for the network analysis were screened to ensure that their record was suitable for the respective flow characteristic being assessed. For example, data from stations with no flow diversion and minimal or no regulation at high flows were used in the network analysis for the 100-year peak discharge. It was assumed that regulation with less than 4.5 million cubic feet (ft^3) of usable capacity per square mile of drainage area would have minimal effect on peak discharges (Benson, 1962). Data from stations with no flow diversion and no regulation other than diurnal regulation were used in the network analysis for the low-flow characteristic. Data from sites with no flow diversion were used in the network analysis for the mean annual flow characteristic.

Separate regression models were developed for each of the three flow characteristics using GLS. Discontinued and active stations with greater than 10 years of record (table 1 in back of report; figs. 2 and 3) for the respective flow characteristics were included in the regression analyses. The use of GLS regression allows for weighting of the station data to compensate for the differences in record length and the cross-correlation of concurrent record among stations. The regression analyses for the 100-year peak discharge and the mean annual discharge tested 32 different basin characteristics as potential independent variables (see Appendix 1). A stepwise, ordinary-least-squares (OLS) regression analysis was used as a preliminary screening of physical and climatic characteristics to determine those that were most significant in estimating streamflow characteristics. The basin and climatic characteristics used in the final regressions for the 100-year peak discharge were drainage area, the average basin slope, and the 24-hour rainfall expected, on average, once each 100 years. The basin and climatic characteristics used in the final regressions for the mean annual discharge were drainage area, the average basin slope, and the basinwide averaged mean annual precipitation.

The basin characteristics used in the annual 7-day, 10-year low-flow regression were taken from a study recently completed by Flynn (2003). In that study, the basin and climatic characteristics that were determined to be most significant in estimating the low-flow characteristics were drainage area, the basin-wide averaged mean annual temperature, and the mean precipitation during the months June through October at the station location. The regression equation for the annual 7-day, 10-year low flow was re-determined using an additional year of streamflow data than was available for the study by Flynn (2003). The regression equations are shown in table 2.

All stream-gaging stations used in the regression analyses, as well as proposed and new stations (table 3), were included in the network analyses. Three planning horizons for the collection of streamflow data were considered in this study. The 0-year planning horizon represents current conditions (2000) and includes no additional data collection. The 5-year planning horizon represents the short-term period, and the 20-year planning horizon represents the long-term period of additional data collection. Ten active or discontinued stations with less than 10 years of unregulated data were included as new station locations in the 5- and 20-year planning horizons (table 3). An additional 19 proposed stations were included in the network analysis for the 5- and 20-year planning horizons. The proposed stations were selected to represent drainage basins with locations in New Hampshire that had inadequate streamflow data, or basin characteristics that were underrepresented in the development of regression equations. Eight of these station sites were proposed in a report by Flynn (2003), which investigated low-flow characteristics in New Hampshire. Another eight station sites correspond to those proposed in an investigation on the sustainability of water resources in the rapidly growing coastal area of New Hampshire. Three additional proposed locations were selected solely for this study. The proposed and new station sites are identified in table 3 and shown in figure 4.

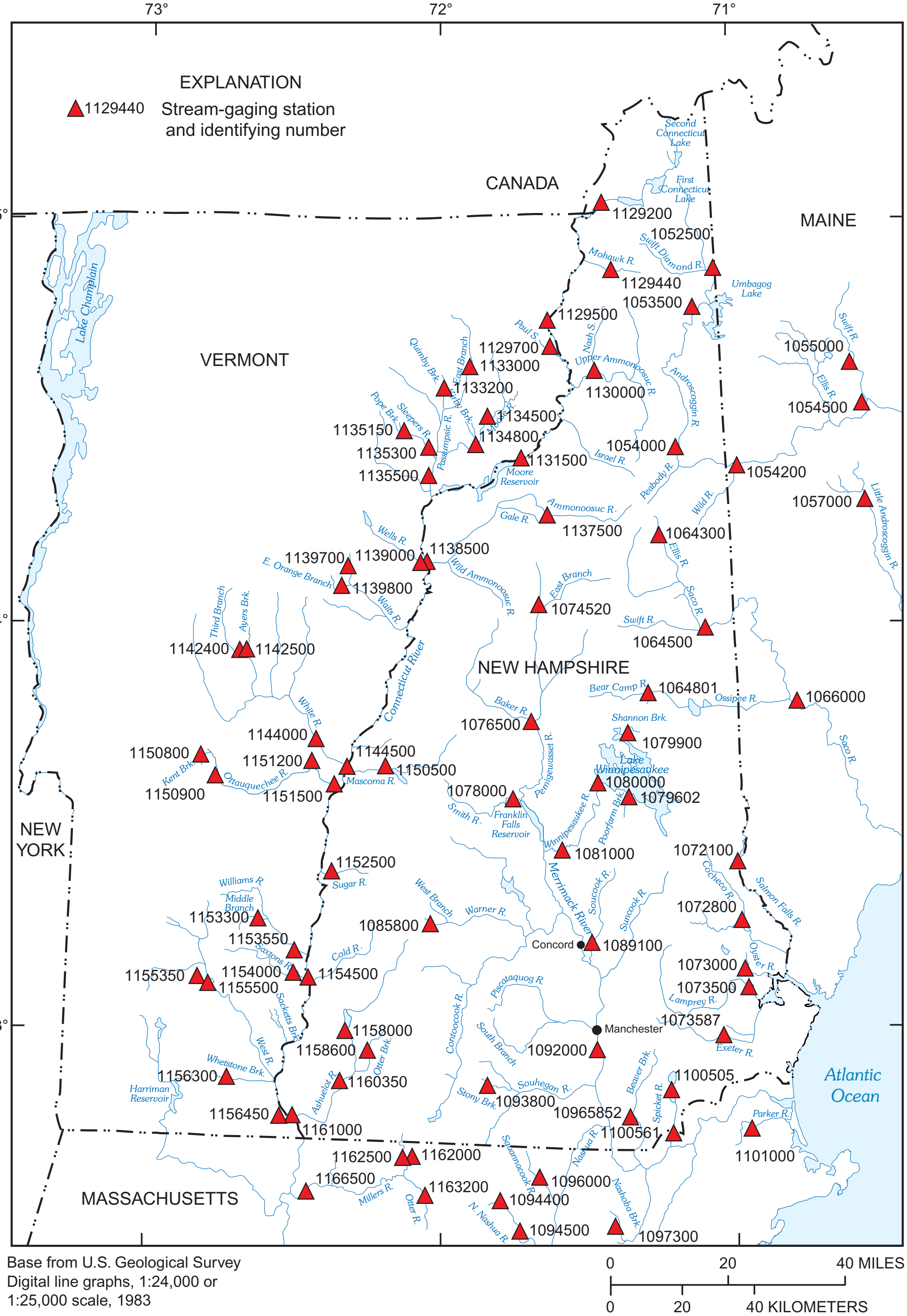
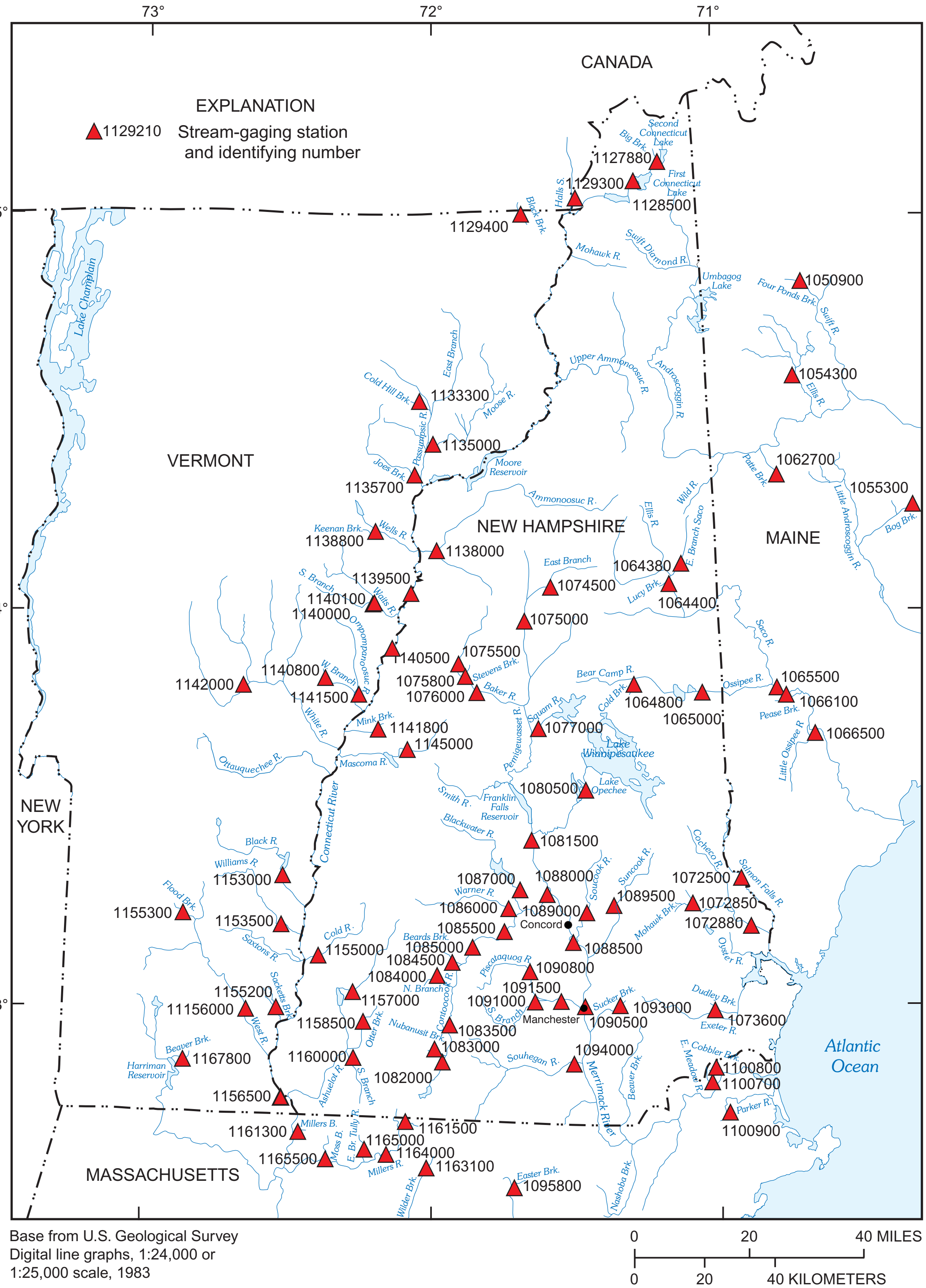


Figure 2. Active stream-gaging stations in, and adjacent to, New Hampshire, used in the network analysis.



Base from U.S. Geological Survey
Digital line graphs, 1:24,000 or
1:25,000 scale, 1983

Figure 3. Discontinued stream-gaging stations in, and adjacent to, New Hampshire, used in the network analysis.

Table 2. Regression equations for estimating flow frequency on New Hampshire streams

[A, Drainage area, in square miles; I, 24-hour rainfall with a 100-year recurrence interval, in inches; BS, average basin slope, in degrees, determined using the ARC/INFO SLOPE command (Environmental Systems Research Institute, 1994) with a Z-factor of 10; P, basinwide averaged mean annual precipitation, in inches; SGP, average precipitation at the stream-gaging station location for the months June through October, in inches; T, basinwide averaged mean annual temperature, in degrees Fahrenheit]

Flow frequency	Regression equation
Peak flood flow with a 100-year recurrence interval, Q_{100}, in cubic foot per second	$Q_{100} = 10^{-2.05}A^{0.793}I^{1.82}BS^{1.85}$
Mean annual flow, Q_a, in cubic foot per second	$Q_a = 10^{-2.14}A^{1.01}BS^{0.132}P^{1.30}$
7-day low flow with a 10-year recurrence interval, $7Q_{10}$, in cubic foot per second	$7Q_{10} = 10^{4.62}A^{1.39}SGP^{3.75}T^{-6.90}$

Table 3. Selected information on the proposed and new and stream-gaging stations used in the New Hampshire network analysis

[No., number; fig., figure; mi^2, square mile; Stations are in order of station number. Current refers to the 2002 water year. A, active; D, discontinued; DIV, diversion; F, flood control; H, hydrologic forecasting; M, management of water resources; NSIP, Federal interest stream-gaging station according to the National Streamflow Information Program criteria; P, proposed station; Q, ensuring adequate discharge for diluting influent; R, regulated; RL, regulated with respect to the low-flow characteristic; U, unregulated; na, station not used for specific flow characteristic]

Stream-gaging station No. (fig. 4)	Stream-gaging station name	Status	Uses	Period of record	Drainage area (mi^2)
101	Isinglass River near Barrington, N.H.	U, P	na	na	73.2
102	Bellamy River near Madbury, N.H.	U, P	na	na	10.3
103	Picassic River near Newfields, N.H.	U, P	na	na	22.9
104	Winnicut River near Greenland, N.H.	U, P	na	na	14.3
105	Taylor River near Hampton, N.H.	U, P	na	na	10.4
106	Salmon Falls River near Somersworth, N.H.	R, P	na	na	222
107	Jones Brook, near Route 153, near Middleton, N.H.	U, P	na	na	5.6
108	Cockermouth River at Groton, N.H.	U, P	na	na	21.7
109	Mad River near Campton, N.H.	U, P	na	na	49
110	Big River near Center Barnstead, N.H.	U, P	na	na	18.8
111	Hubbard Brook at West Thornton, N.H.	U, P	na	na	13.2
112	North Branch Contoocook River near Stoddard, N.H.	R, P	na	na	46.8
114	Clear Stream near Errol, N.H.	U, P	na	na	42.9
115	Stony Brook near Gorham, N.H.	U, P	na	na	40.7
116	Saco River near Glen, N.H.	U, P	na	na	132.4
117	Swift River at Conway, N.H.	U, P	na	na	86
120	South Branch Israel River near Jefferson, N.H.	U, P	na	na	24.6
122	Perry Stream near Pittsburg, N.H.	U, P	na	na	26.1
125	South Branch Gale River near Franconia, N.H.	U, P	na	na	16.7
01064801	Bearcamp River at South Tamworth, N.H.	U, A	NSIP, M	1994-current	66.9
01072800	Cocheco River near Rochester, N.H.	RL, A	Q	1996-current	85.7
01072880	Cocheco River, at Spaulding Turnpike, at Dover, N.H.	RL, DIV, D	na	1992-96	173
01073587	Exeter River, at Haigh Road, near Brentwood, N.H.	RL, A	Q	1997-current	62.9
01074520	East Branch Pemigewasset River at Lincoln, N.H.	U, A	NSIP, F, Q	1994-current	115
01079602	Poorfarm Brook at Ellacoya State Park near Gilford, N.H.	U, A	M	1999-current	6.4
01079900	Shannon Brook near Moultonborough, N.H.	U, A	M	1999-current	7
01083500	Contoocook River near Elmwood, N.H.	RL, D	na	1917-24	166
01100505	Spicket River, at Island Pond Road, at North Salem, N.H.	R, A	F	2001-current	16.5
01160350	Ashuelot River at West Swanzey, N.H.	R, A	Q	1995-current	316

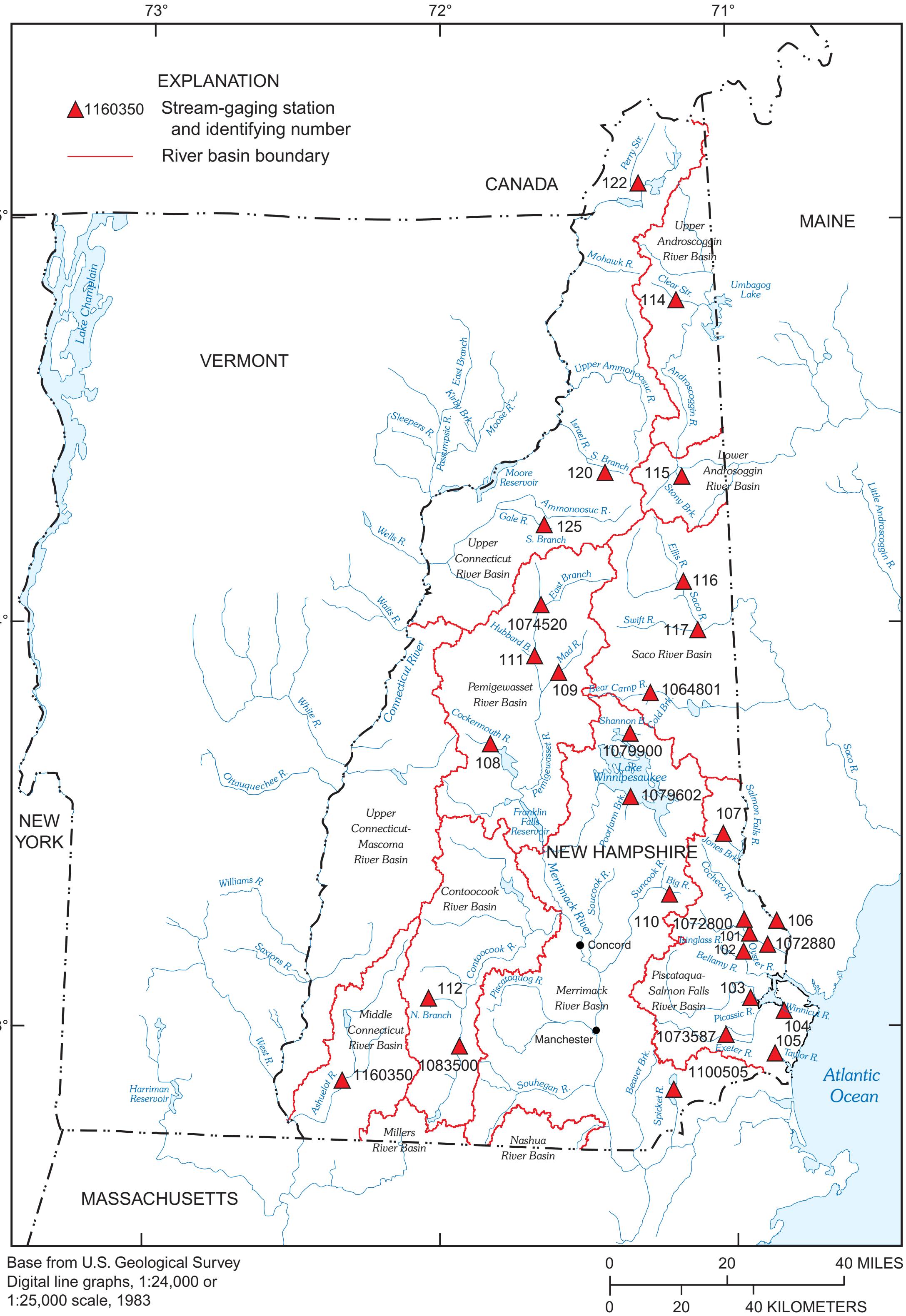


Figure 4. Location of proposed and new stream-gaging stations used in the New Hampshire network analysis.

GLSNET cost-weights the sampling error for each station in the network analysis. Thus, operation costs must be assigned to all stations in the network. Because costs for operation of existing stream-gaging stations are uniform in New Hampshire, a cost equal to one unit was assigned to each active station, including several sites that were re-established while this study was being completed. For proposed stations, installation costs were amortized over the length of the planning horizon and added to the operation costs. There were two exceptions. The first exception was for the low-flow and peak-flow networks, which had unregulated streamflow data from as many as five sites that are now regulated. Future streamflow data from these regulated active sites would be of no use to the low- or peak-flow regionalization efforts; therefore, these sites were assigned a cost twice that of other active stations to ensure that these regulated stations would be removed in the early stages of the low-flow and peak-flow network analyses. The second exception was for active partial-record stations in the peak-flow network. These stations were assigned a cost unit equal to 0.1 if peak flows were determined from indirect measurement or 0.3 if peak flows were currently determined from a maintained rating curve. These costs represent the true fractional cost of a partial-record station compared to a full-record active station.

Discontinued stations had their own cost structure. For the 0-year planning horizon, discontinued stations were given a cost twice that of a continuously recording active site. This assured that discontinued sites would be eliminated before active sites. For the 5- and 20-year planning horizon, discontinued stations were assigned the cost of a comparable active site—continuous or partial—plus the cost to re-establish the station amortized over the planning horizon. The exception was for stations where additional streamflow data would be of no use because of regulation or diversion. A cost equal to twice that of a continuously recording active site was given to these sites.

For each planning horizon and flow characteristic, stream-gaging stations were ranked in reverse order from the order in which the GLSNET model removed them from the network. Therefore, the station that was assigned a rank of 1 was the station whose data provided the largest cost-weighted reduction in the average sampling error of the regression equation. A composite ranking also was determined for each planning horizon by summing the individual ranks for the high-, mean-, and low-flow characteristic for each station and re-ranking the stations in ascending order based on this summed rank. In the composite ranking, all stations whose continued data collection could not contribute to a flow characteristic because of regulation or diversion were given a rank of N+1 in that flow characteristic, where N equals the total number of stations that can contribute to the given flow characteristic and planning horizon. Furthermore, stations where only peak flows were determined (crest-stage gage) were given a rank of N+1 in the mean- and low-flow characteristic ranking when summing for the composite rank. Hence, stations with a composite ranking closest to 1 (high priority) represent stations that contribute the most information to all three flow characteristics. The reader should keep in mind, when reviewing these results, that a station assigned a relatively high composite rank (low priority) under this approach may still provide important regional information with respect to one or two of the individual flow characteristics.

Effectiveness of the Stream-gaging Network

Network-analysis results help determine whether to spend available resources collecting additional data at active stations, adding new stations, or both. The continued operation of active stations, addition of new stations, or the re-establishment of discontinued stations to the network will enhance the predictive ability of the regression model by increasing the number of observation points and reducing the sampling error of the regression. The network analysis herein is based on the effect that a station has on reducing the average sampling error associated with a regional regression equation. GLS regression was used to develop the estimating equations for the 100-year flood, the mean annual discharge, and the 7-day, 10-year low flow shown in table 2. GLSNET was used to determine the average sampling error of each regression equation for the 2000 water-year network and for the 5- and 20-year planning horizons with and without the addition of new stream-gaging stations. The average sampling error of the regression equation for each selected flow characteristic over each planning horizon is shown in table 4. The average sampling errors are the results of the network analysis in which all available stations, active and discontinued, contribute to regional information. Results indicate that continued operation of the network will result in a decrease in the average sampling error, and a larger decrease is expected if the network is expanded through the addition of new stations.

Table 4. Average sampling error for selected network strategies

[Sampling error can be converted to percent units using $SE_{\%} = 100\,(e^{5.302SE^{2}}-1)^{0.5}$, where $SE_{\%}$ is the sampling error in percent and SE is the sampling error in logarithmic units]

Streamflow characteristic	Average sampling error in log units				
	0-year	5-year planning horizon		20-year planning horizon	
		Excluding new stations	Including new stations	Excluding new stations	Including new stations
100-year peak discharge	0.0605	0.0590	0.0581	0.0548	0.0526
Annual mean discharge	.0120	.0120	.0120	.0114	.0114
7-day, 10-year low flow	.0833	.0826	.0770	.0811	.0733

A review of table 4 in detail shows that if no new stations are added to the network, the average sampling error of the 100-year peak discharge regression equation is reduced from the conditions in the 2000 water year by 2.5 percent and 9.4 percent for the 5- and 20-year planning horizons, respectively. If the proposed and new stations (table 3) are added to the network, the average sampling error of the 100-year peak discharge regression equation is reduced by 4.0 percent and 13.1 percent for the 5- and 20-year planning horizons, respectively. Substantial reductions in the average sampling error of the 7-day, 10-year low-flow regression equations are also predicted in the network analysis. If no new stations are added to the network, the average sampling error of this low-flow regression equation is reduced from the conditions in the 2000 water year by 0.8 percent and 2.6 percent for the 5- and 20-year planning horizons, respectively. If the proposed and new stations are added to the network, the average sampling error of the low-flow regression equation is reduced by 7.6 percent and 12.0 percent for the 5- and 20-year planning horizons, respectively.

Although considerable improvements to the peak-flow and low-flow regional information are predicted with additional data or the addition of new stream-gaging stations, improvement to the mean-flow regression equation average sampling error—which is already relatively small—is insignificant. The relatively small sampling error of the mean-flow regression equation is because more stations were available to develop the equation and because better estimates of mean annual flows can be obtained from shorter periods of record than for flow statistics with less frequent recurrence intervals. If no new stations are added to the network, the average sampling error for the mean-flow regression equation is reduced from the conditions in the 2000 water year by 0 percent and 5.0 percent for the 5- and 20-year planning horizons, respectively. If the proposed and new stations (table 3) are added to the network, the average sampling error of the mean-flow regression equation also is decreased 0 percent and 5.0 percent for the 5- and 20-year planning horizons, respectively.

The decrease in the average sampling error as a function of the number of stations being operated is presented in figures 5, 6, and 7. In these figures, the average sampling error is expressed in base-10 logarithmic units, and each point on the graphs represents the sampling error associated with a network that would result if it, plus all the stations plotted to the left of it, were operated over the planning horizon. Thus, the stations where additional data would be most effective in reducing the average sampling error are at the left end of the curves. As a reference point, the square represents the network conditions in the 2000 water year with no additional years of data and no additional stream-gaging stations added to the network and is the average sampling error associated with the regression equation.

The curves associated with the scenarios of including or excluding new stations have different starting points (left end of the curve) because the average sampling errors are computed over different stream-gaging networks. Sometimes, the starting point of a curve that includes new stations has a larger sampling error than the starting point of a curve that excludes new stations or the current conditions (0-year planning horizon) point. This is because the starting point of any of the curves is the sampling error for the 0-year planning horizon for the entire network being analyzed, which can include proposed stations.

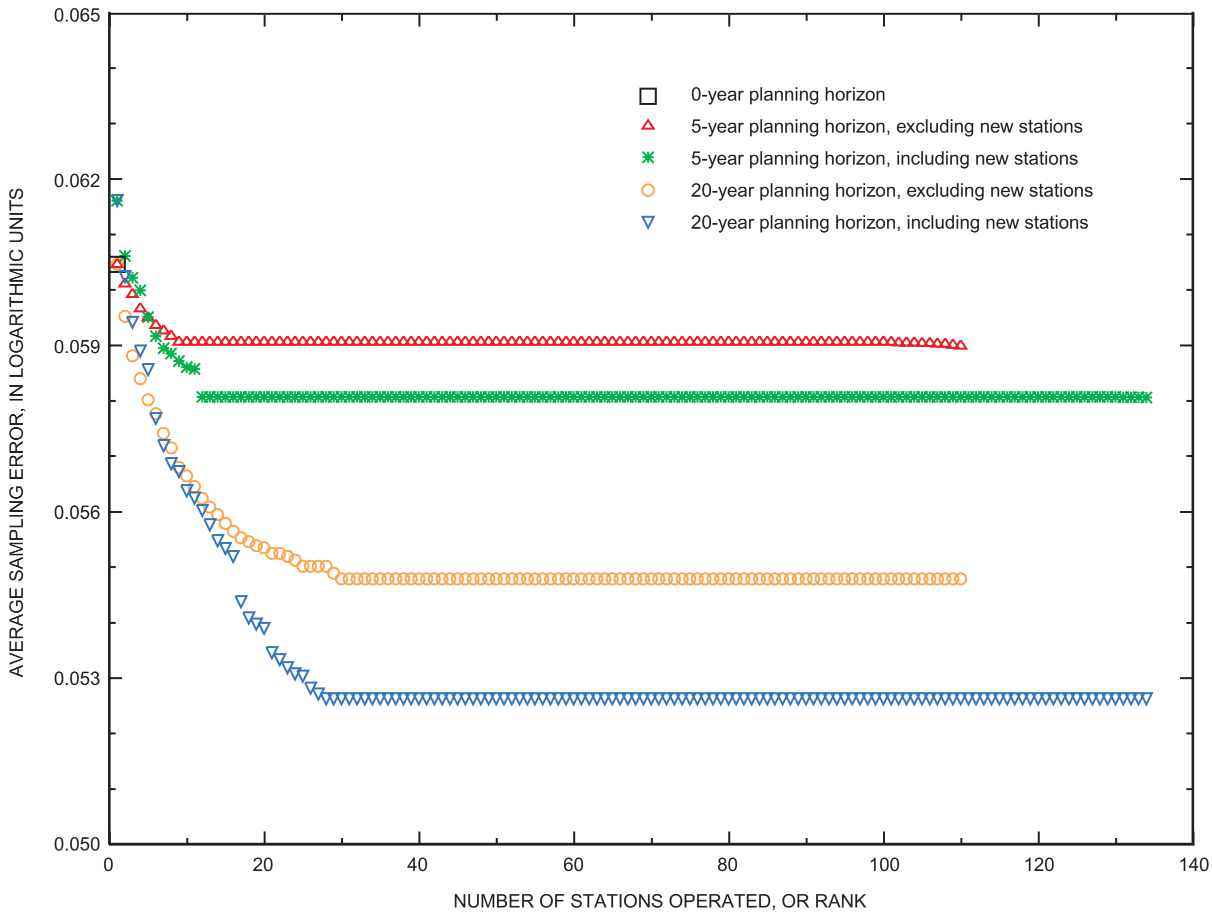


Figure 5. Average sampling error for the 100-year peak-flow characteristic as a function of the number of stations operated for selected strategies in the analysis of the New Hampshire stream-gaging network.

Considering that new sites were selected to fill gaps in underrepresented ranges of the basin characteristics, and the underrepresented ranges of basin characteristics were commonly near the extremes of the entire range of basin characteristics, the computed sampling error for the 0-year planning horizon of an entire network was likely to be higher with proposed stations than without proposed stations. As the curves indicate, however, several stations operating over the selected planning horizon quickly decrease the sampling error.

The reduction in sampling error is greater for a 20-year planning horizon than for a 5-year planning horizon (figs. 5-7). This reduction in error is related to increased record length. These graphs also show that the operation of the first group of stream-gaging stations, which are represented by the steep part of each curve, accounts for the largest percentage of the total reduction in the average sampling error. The stations along the flat part of the curve are those stations whose future operation is not statistically expected to improve the regional regression sampling errors. According to this network analysis, these stations could be considered for removal from the network. If, however, these stream-gaging stations have a purpose in the network that is other than regional flow-characteristic estimation, they may need to be retained for those purposes. Also, the amount of regional information provided depends on the variability of streamflow and the combination of physical and climatic characteristics. It should be noted that the network analysis assumes that the regression model does not change. Using an alternative regression model with alternative basin characteristics could produce somewhat different results.

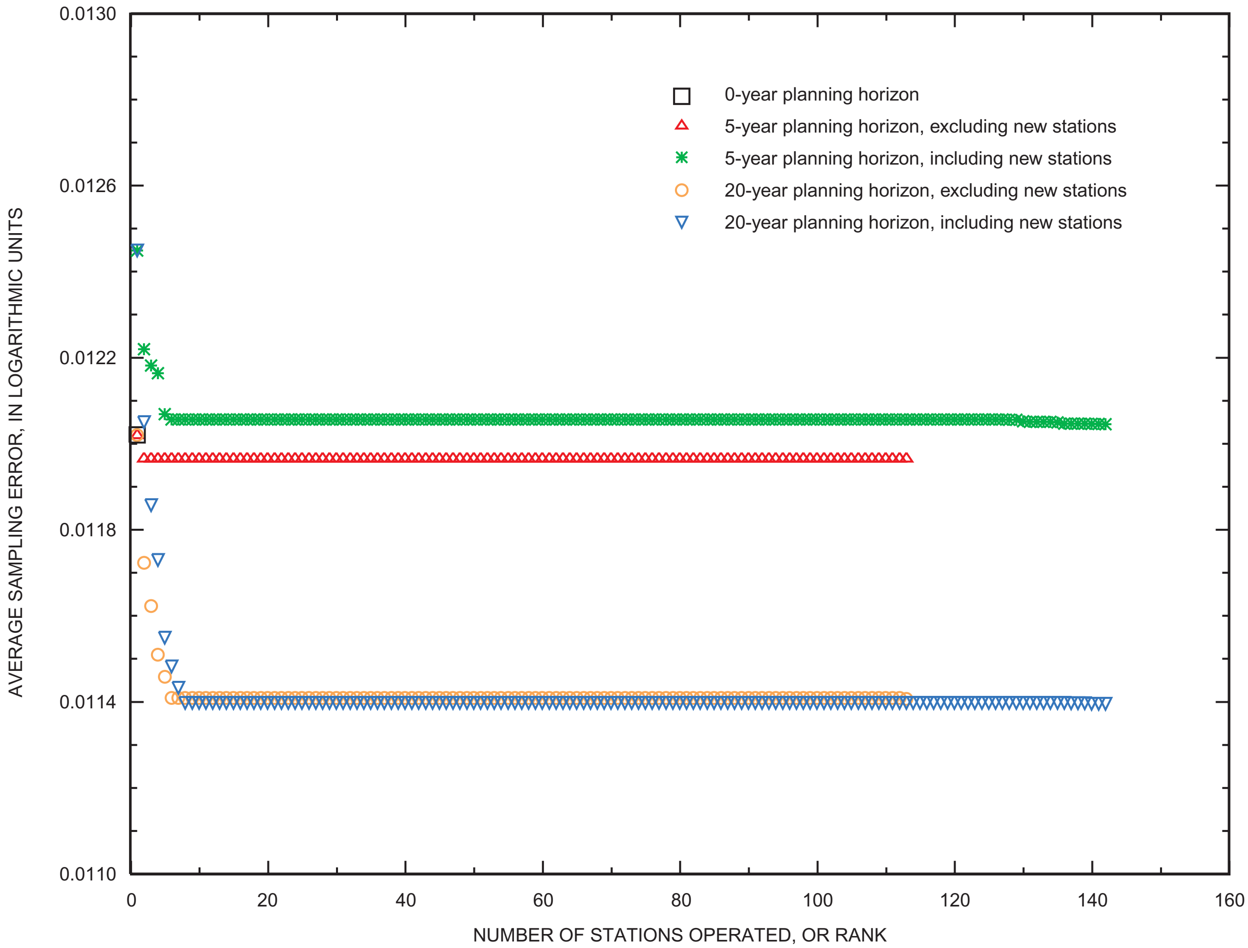


Figure 6. Average sampling error for the mean-flow characteristic as a function of the number of stations operated for selected strategies in the analysis of the New Hampshire stream-gaging network.

Tallies were made of the basin characteristics and years of record of the first 30 rank-ordered stream-gaging stations in each of the network strategies. The composition of the first 30 stations changes as a function of planning horizon and streamflow characteristic, making it difficult to define the characteristics of the stations that will provide the greatest improvement in regional streamflow information. The tallies indicate, however, that additional data collection at stations with unregulated streamflow, relatively short-term record (less than 20 years), and drainage areas smaller than 45 mi^2 are expected to contribute the largest cost-weighted reduction to the average sampling error of the regional estimating equations.

Information on the rank order of all stream-gaging stations for each flow characteristic and the composite ranks for the 0-, 5-, and 20-year planning horizons is given in tables 5 (station number order) and 6 (rank order) in the back of this report. The ranks for the 5- and 20-year planning horizons in each table are those for the network strategy with the addition of new stations.

APPLICATION AND LIMITATIONS OF RESULTS

By use of the results from GLSNET, a stream-gaging station can be ranked in order of its contribution to regional flow information. The ranking can be used

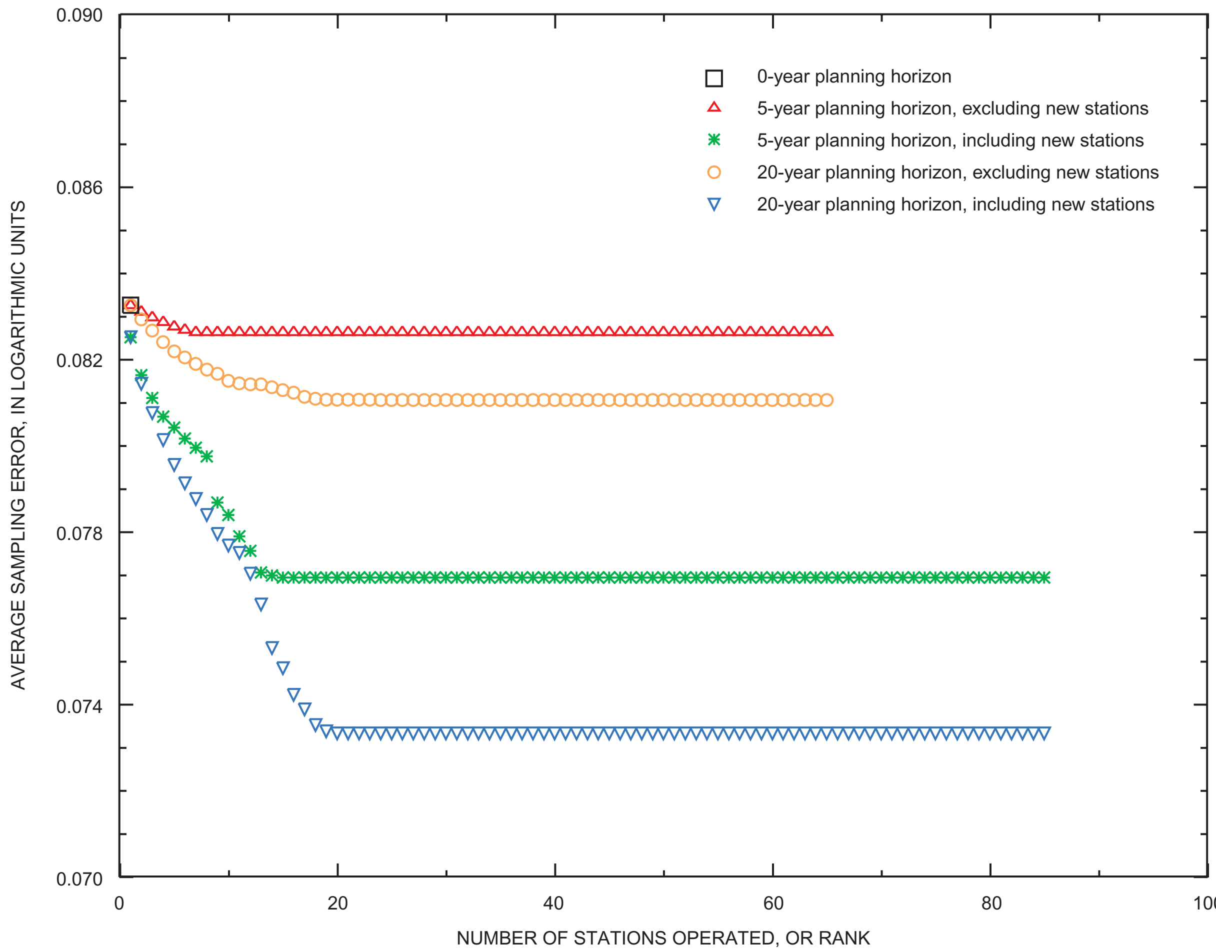


Figure 7. Average sampling error for the low-flow ($7Q_{10}$) characteristic as a function of the number of stations operated for selected strategies in the analysis of the New Hampshire stream-gaging network.

to specify stations where additional data are needed, specify sites where new stations are needed, or indicate which stations are providing little new regional information and could be considered for discontinuation. The reader should note that not all the proposed and new stations used in the network-analysis strategies would be ideal locations for a station. Because the streamflow of some of these locations is regulated (see table 3), their true usefulness in providing regional streamflow data is limited; however, the basin characteristics of these sites would better represent the basin characteristics of the network.

Furthermore, the largest relative decrease in average sampling error typically corresponds to the stations with the fewest years of record. Thus, a network analysis that includes new stations will tend to rank new stations among stations that are contributing the most to regional streamflow information. This is because the marginal worth of new data at a site with no or little data is greater than the marginal worth of additional data at a site that already has several years of record (G.D. Tasker, U.S. Geological Survey, written commun., March 26, 2002).

Stream-gaging stations in tables 5 and 6 (back of report) that are ranked closest to 1 should be given first consideration for future data collection. Stations with a low priority (high rank) could be considered for removal from the stream-gaging network if budgetary conditions require such action. Such considerations would apply only in the context of improving the regional streamflow information. The composite ranks determined for the network analysis on the high-, mean-, and low-flow characteristics are an indicator of the overall contribution of the data from a station to regional streamflow information; however, caution is warranted when interpreting the results. A station that provides a significant reduction in the average sampling error of the regression equation used to estimate a particular streamflow characteristic might have a low-priority ranking if the station cannot provide flow information for another streamflow characteristic. For example, many crest-stage stations that collect only peak-flow data have a high-priority ranking (close to 1) for the high-flow characteristic, indicating that they provide important information. In the composite ranking, however, the same station will have a low-priority rank because it cannot provide information on mean flows or low flows.

An overview of the network-analysis results indicates that the Piscataqua-Salmon Falls Basin, the Upper Connecticut Basin, and the Lake Winnipesaukee region in the Merrimack Basin are three areas in particular that could benefit from additional streamflow data. Three stream-gaging stations in the Piscataqua-Salmon Falls Basin, including the recently established station, Winnicut River at Greenland, N.H. (01073785 or 104 in the network analysis), were identified as sites that could improve regional information, especially the peak flood-flow information. In the Upper Connecticut Basin, the South Branch Israel River (120) and South Branch Gale River (125) could provide valuable information, particularly for the underrepresented drainage area ranges between 15 and 45 mi^2. The network analysis also indicates that both recently established stations at Poorfarm Brook at Ellacoya State Park near Gilford, N.H. (01079602), and at Shannon Brook near Moultonborough, N.H. (01079900), can provide valuable regional information for both peak-flood flows and low flows. The top 20 active and proposed stations providing the greatest enhancements to regional streamflow information were identified using the network-analysis results, basin characteristics, and plots describing areal coverage and are listed in table 7.

Table 7. Active and proposed stream-gaging stations providing the greatest enhancements to regional streamflow information

[No., number; A, active; D, discontinued; P, proposed]

Stream-gaging station No.	Stream-gaging station name	Status
01064300	Ellis River near Jackson, N.H.	A
01064801	Bearcamp River at South Tamworth, N.H.	A
01073587	Exeter River, at Haigh Road, near Brentwood, N.H.	A
01079602	Poorfarm Brook at Ellacoya State Park near Gilford, N.H.	A
01079900	Shannon Brook near Moultonborough, N.H.	A
01089100	Soucook River, at Pembroke Road, near Concord, N.H.	A
01093800	Stony Brook Tributary near Temple, N.H.	A
010965852	Beaver Brook at North Pelham, N.H.	A
01127880	Big Brook near Pittsburg, N.H.	D, P
01129440	Mohawk River near Colebrook, N.H.	A
102	Bellamy River near Madbury, N.H.	P
103	Picassic River near Newfields, N.H.	P
104	Winnicut River at Greenland, near Portsmouth, N.H.	A
105	Taylor River near Hampton, N.H.	P
107	Jones Brook, near Route 153, near Middleton, N.H.	P
110	Big River near Center Barnstead, N.H.	P
111	Hubbard Brook at West Thornton, N.H.	P
115	Stony Brook near Gorham, N.H.	P
120	South Branch Israel River near Jefferson, N.H.	P
125	South Branch Gale River near Franconia, N.H.	P

Other factors should also be taken into consideration when making decisions regarding the New Hampshire stream-gaging network. In addition to providing regional information on streamflow characteristics, data from a stream-gaging station may be used for a variety of purposes to serve local, State, and Federal interests. Of the stations in New Hampshire, streamflow data from 25 stations are used for flood control operations, 18 are used for flood forecasting (fig. 8), 7 are used for managing

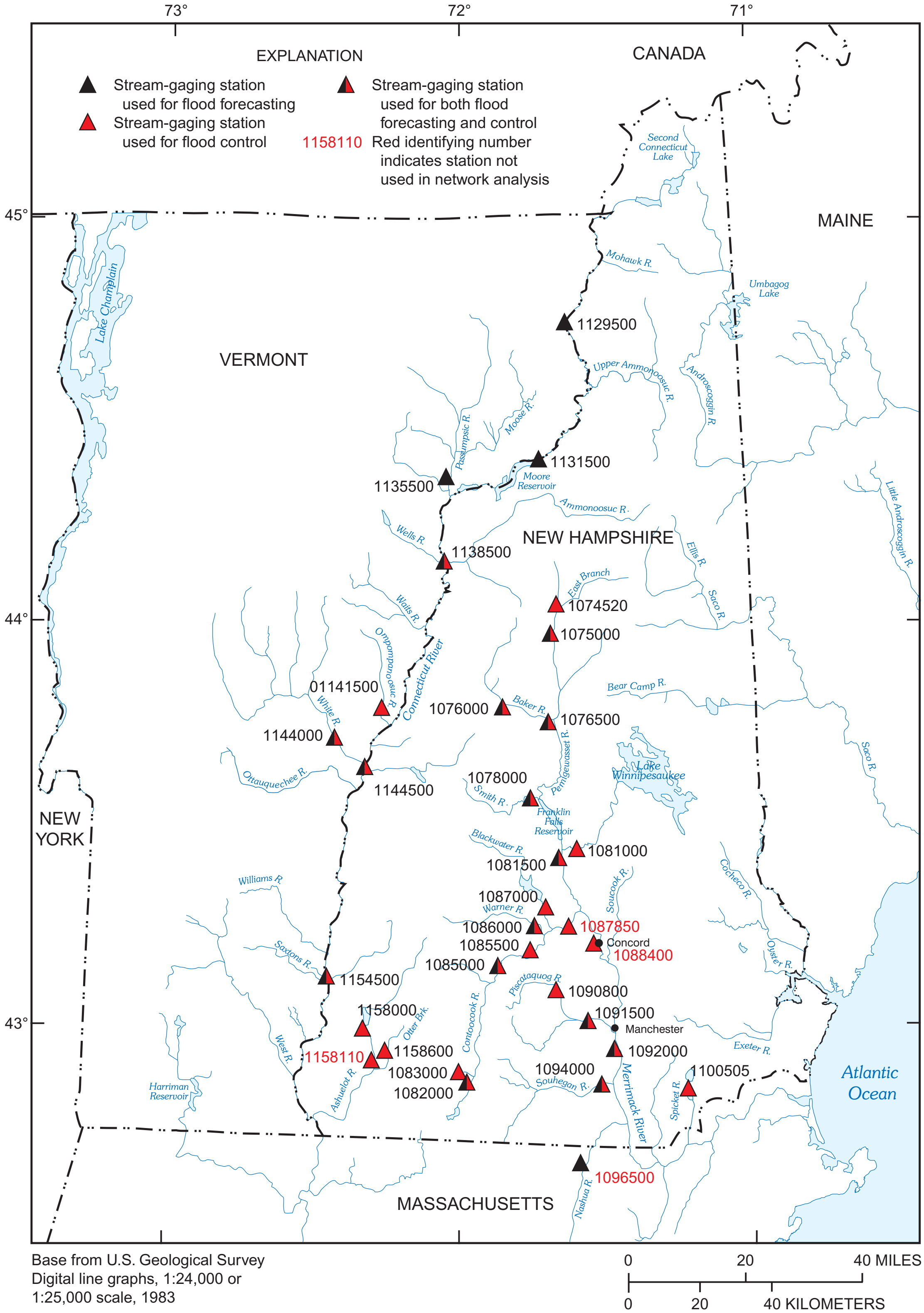


Figure 8. Location of stream-gaging stations and identifying numbers providing data used for flood-hazard mitigation.

hydropower, and 10 are used for management of water resources for regulatory purposes. It would be remiss to discontinue or disregard activation of a stream-gaging station with important functions such as flood hazard mitigation. Because many stations have more than one category of use, it is not practical to rely solely on a network analysis using GLSNET results for decisions regarding the alteration of a stream-gaging network.

Also, the network analysis cannot be used to identify stream-gaging stations that should be reactivated or added to the network to improve flood forecasting or other functions unrelated to regionalization. For example, the network analysis gave discontinued stream-gaging stations, Ammonoosuc River near Bath, N.H. (01138000), and Suncook River at North Chichester, N.H. (01089500), a low-priority ranking, presumably because of the large amount of data already collected at these stations, 41 and 52 years, respectively. Yet, the Northeast River Forecast Center of the National Oceanic and Atmospheric Administration (NOAA) has identified both stations as important to improving flood forecasting if reactivated. The Northeast River Forecast Center also indicated that a station on the Merrimack River in Concord, N.H., would improve hydrologic forecasting (Ronald Martin, National Oceanic and Atmospheric Administration, written commun., 2002).

SUMMARY AND CONCLUSIONS

The effectiveness of the New Hampshire stream-gaging network in providing regional streamflow information was evaluated by the use of generalized-least-squares NETwork (GLSNET) software. Stations with 10 or more years of data were used to develop estimating equations for the 100-year peak flood discharge, the mean annual discharge, and the 7-day, 10-year low flow by generalized-least-squares regression. Each station used in the development of a regression equation was then evaluated for its cost-weighted contribution to reduce the average sampling error of the regression equation for conditions existing in the 2000 water year and for hypothetical periods of additional data collection for 5 years and 20 years. Additionally, new stream-gaging stations with less than 10 years of record and proposed stream-gaging stations with underrepresented values of the basin characteristics were evaluated in the network analysis. All stations were ranked on the basis of their contribution to the reduction of the average sampling error of the regression equations.

The network analysis showed that the effectiveness of the stream-gaging network in providing regional streamflow information could be improved for all three flow characteristics with the collection of additional streamflow data. The addition of new stations to the network would result in an increase in regional streamflow information. With continued data collection, the greatest reduction in the average sampling error of the regional regression equations was found for the peak- and low-flow characteristics. In general, additional data collection at stations with unregulated streamflow, relatively short-term (less than 20 years) records, and drainage areas less than 45 mi^2 are expected to contribute the largest cost-weighted reduction to the average sampling error of the regional estimating equations. In New Hampshire, drainage basins between 15 and 35 mi^2 are not represented in the network.

The results of the network analyses can be used to prioritize stream-gaging stations for continued operation, reactivation, or establishment of new stations. In addition to optimizing regional information on flow characteristics, other uses of data from a stream-gaging station serving local, State, and Federal interests need to be considered before modifying the stream-gaging network in New Hampshire.

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Table 1. Selected information on stream-gaging stations having 10 years of record or more in or adjacent to New Hampshire as of the 2000 water year

[No., number; mi^2, square mile; Stations are in downstream order. Abbreviations: A, active; D, discontinued; D*, discontinued, but partial record collected; C, crest-stage gage; F, flood control; H, hydrologic forecasting; M, management of water resources; NSIP, Federal interest stream-gaging station according to the National Streamflow Information Program criteria; P, hydropower generation; U, unregulated; R, regulated; SR, some regulation; DIV, flow diversion; --, station not used for specific flow characteristic]

Stream-gaging station No.	Stream-gaging station name	Status	Use	Regu-lation	Period of record used in the analysis			Drainage area (mi^2)
					Peak flow	Mean flow	Low flow	
01050900	Four Ponds Brook near Houghton, Maine	D, C	--	U	1964-74	--	--	3.26
01052500	Diamond River near Wentworth Location, N.H.	A	--	U	1942-2000	1942-2000	1942-2000	153
01053500	Androscoggin River at Errol, N.H.	A	NSIP, P	R	--	1906-2000	--	1,040
01054000	Androscoggin River near Gorham, N.H.	A	NSIP, P	R	--	1914-2000	--	1,360
01054200	Wild River at Gilead, Maine	A	--	U	1965-2000	1965-2000	1965-2000	69.9
01054300	Ellis River at South Andover, Maine	D	--	U	1964-82	1964-82	1964-82	130
01054500	Androscoggin River at Rumford, Maine	A	--	R	--	1900-2000	--	2,070
01055000	Swift River near Roxbury, Maine	A	--	U	1929-2000	1929-2000	1929-2000	96.8
01055300	Bog Brook near Buckfield, Maine	D, C	--	U	1964-74	--	--	10.4
01057000	Little Androscoggin River near South Paris, Maine	A	--	U	1914-2000	1914-2000	1914-2000	74.1
01062700	Patte Brook near Bethel, Maine	D, C	--	U	1964-74	--	--	5.61
01064300	Ellis River near Jackson, N.H.	A	--	U	1964-2000	1964-2000	1964-2000	10.5
01064380	East Branch Saco River at Town Hall Road near Lower Bartlett, N.H.	D, C	--	U	1967-76	--	--	34.2
01064400	Lucy Brook near North Conway, N.H.	D	--	U	1965-91	1965-91	1965-91	4.68
01064500	Saco River near Conway, N.H.	A	NSIP	U	1904-2000	1904-2000	1904-2000	385
01064800	Cold Brook at South Tamworth, N.H.	D	--	U	1964-73	1964-73	1964-73	5.41
01065000	Ossipee River at Effingham Falls, N.H.	D*	M	U	1943-90	1943-90	--	329
01065500	Ossipee River at Cornish, Maine	D	--	U	1917-96	1917-96	--	451
01066000	Saco River at Cornish, Maine	A	--	U	1917-2000	1917-2000	--	1,290
01066100	Pease Brook near Cornish, Maine	D, C	--	U	1965-74, 1997	--	--	4.53
01066500	Little Ossipee River near South Limington, Maine	D	--	U	1941-82, 1997	1941-82	--	162
01072100	Salmon Falls River at Milton, N.H.	A	M	R	--	1969-2000	--	107
01072500	Salmon Falls River near South Lebanon, Maine	D	--	R	--	1929-1969	--	139
01072850	Mohawk Brook near Center Strafford, N.H.	D	--	U	1965-77	1965-77	1965-77	7.47
01073000	Oyster River near Durham, N.H.	A	--	U	1935-2000	1935-2000	1935-2000	12.2
01073500	Lamprey River near Newmarket, N.H.	A	--	SR	1935-2000	1935-2000	--	181
01073600	Dudley Brook near Exeter, N.H.	D	--	U	1963-85	1963-85	1963-85	5.86
01074500	East Branch Pemigewasset River near Lincoln, N.H.	D	--	U	1929-72	1929-72	1929-72	106
01075000	Pemigewasset River at Woodstock, N.H.	A	NSIP, H, F	U	1940-2000	1940-77	1940-77	195
01075500	Baker River at Wentworth, N.H.	D	--	U	1941-52	1941-52	1941-52	57.8

Table 1. Selected information on stream-gaging stations having 10 years of record or more in or adjacent to New Hampshire as of the 2000 water year --Continued

[No., number; mi^2, square mile; Stations are in downstream order. Abbreviations: A, active; D, discontinued; D*, discontinued, but partial record collected; C, crest-stage gage; F, flood control; H, hydrologic forecasting; M, management of water resources; NSIP, Federal interest stream-gaging station according to the National Streamflow Information Program criteria; P, hydropower generation; U, unregulated; R, regulated; SR, some regulation; DIV, flow diversion; --, station not used for specific flow characteristic]

Stream-gaging station No.	Stream-gaging station name	Status	Use	Regu-lation	Period of record used in the analysis			Drainage area (mi^2)
					Peak flow	Mean flow	Low flow	
01075800	Stevens Brook near Wentworth, N.H.	D	--	U	1964-98	1964-98	1964-98	3.29
01076000	Baker River near Rumney, N.H.	A	NSIP, H, F	U	1929-2000	1929-77	1929-77	143
01076500	Pemigewasset River at Plymouth, N.H.	A	NSIP, H	U	1904-2000	1904-2000	1904-2000	623
01077000	Squam River at Ashland, N.H.	D	--	R	--	1940-95	--	57.8
01078000	Smith River near Bristol, N.H.	A	NSIP, H, F	U	1919-2000	1919-2000	1919-2000	86
01080500	Lake Winnipesaukee Outlet at Lakeport, N.H.	A	M	R	--	--	--	363
01081000	Winnipesaukee River at Tilton, N.H.	A	F, M	R	--	--	--	471
01081500	Merrimack River at Franklin Junction, N.H.	A	NSIP, H, F	R	--	1904-78	--	1,510
01082000	Contoocook River at Peterborough, N.H.	A	NSIP, H, F	U	1938, 1946-2000	1946-77	1946-77	67
01083000	Nubanusit Brook below MacDowell Dam near Peterborough, N.H.	D*	F	R	--	1922-89	--	45.1
01084000	North Branch Contoocook River near Antrim, N.H.	D	--	R	--	1925-1970	--	54
01084500	Beards Brook near Hillsboro, N.H.	D	--	U	1946-70	1946-70	1946-70	55.3
01085000	Contoocook River near Henniker, N.H.	D*	NSIP, H, F	SR	--	1940-77	--	367
01085500	Contoocook River below Hopkinton Dam at West Hopkinton, N.H.	A	F	DIV, R	--	--	--	427
01085800	West Branch Warner River near Bradford, N.H.	A	--	U	1963-2000	1963-2000	1963-2000	5.91
01086000	Warner River at Davisville, N.H.	A	NSIP, H, F	U	1940-78, 1999-2000	1940-78	1940-78	146
01087000	Blackwater River near Webster, N.H.	D*	F	R	--	1919-89	--	128
01088000	Contoocook River at Penacook, N.H.	D	NSIP	DIV, R	--	--	--	766
01088500	Merrimack River at Garvin Falls, N.H.	D	NSIP	DIV, R	--	--	--	2,427
01089000	Soucook River near Concord, N.H.	D	--	U	1952-87	1952-87	1952-87	77.8
01089100	Soucook River, at Pembroke Road, near Concord, N.H.	A	NSIP	U	1989-2000	1989-2000	1989-2000	82.9
01089500	Suncook River at North Chichester, N.H.	D	--	SR	1919-70	1919-70	--	154
01090500	Merrimack River at Manchester, N.H.	D	--	R	--	1928-1950	--	2,850
01090800	Piscataquog River below Everett Dam near East Weare, N.H.	D*	NSIP, F	DIV, R	--	--	--	63.1
01091000	South Branch Piscataquog River near Goffstown, N.H.	D	--	U	1941-78	1941-78	1941-78	103
01091500	Piscataquog River near Goffstown, N.H.	D*	H, F	DIV	--	--	--	202
01092000	Merrimack River near Goffs Falls, below Manchester, N.H.	A	NSIP, H, F	R	--	1937-2000	--	3,080
01093000	Sucker Brook at Auburn, N.H.	D	--	R	--	1939-70	--	28.8

Table 1. Selected information on stream-gaging stations having 10 years of record or more in or adjacent to New Hampshire as of the 2000 water year --Continued

[No., number; mi^2, square mile; Stations are in downstream order. Abbreviations: A, active; D, discontinued; D*, discontinued, but partial record collected; C, crest-stage gage; F, flood control; H, hydrologic forecasting; M, management of water resources; NSIP, Federal interest stream-gaging station according to the National Streamflow Information Program criteria; P, hydropower generation; U, unregulated; R, regulated; SR, some regulation; DIV, flow diversion; --, station not used for specific flow characteristic]

Stream-gaging station No.	Stream-gaging station name	Status	Use	Regu-lation	Period of record used in the analysis			Drainage area (mi^2)
					Peak flow	Mean flow	Low flow	
01093800	Stony Brook Tributary near Temple, N.H.	A	--	U	1964-2000	1964-2000	1964-2000	3.62
01094000	Souhegan River at Merrimack, N.H.	A	NSIP, H, F	U	1910-2000	1910-76	--	170
01094400	North Nashua River at Fitchburg, Mass.	A	--	DIV	1973-2000	--	--	63.5
01094500	North Nashua River near Leominster, Mass.	A	--	DIV	1936-2000	--	--	107
01095800	Easter Brook near North Leominster, Mass.	D, C	--	U	1964-74	--	--	0.92
01096000	Squannacook River near West Groton, Mass.	A	--	SR	1950-2000	1950-2000	--	66
010965852	Beaver Brook at North Pelham, N.H.	A	--	U	1987-2000	1987-2000	1987-2000	47.8
01097300	Nashoba Brook near Acton, Mass.	A	--	U	1963-2000	1963-2000	1963-2000	12.8
01100700	East Meadow River near Haverhill, Mass.	D	--	U	1963-74	1963-74	1963-74	4.74
01100800	Cobbler Brook near Merrimack, Mass.	D, C	--	U	1963-83	--	--	0.76
01100900	Parker River Tributary near Georgetown, Mass.	D, C	--	U	1964-74	--	--	0.71
01101000	Parker River at Byfield, Mass.	A	--	U	1946-2000	1946-2000	1946-2000	21.2
01127880	Big Brook near Pittsburg, N.H.	D	--	U	1964-84	1964-84	1964-84	6.52
01128500	Connecticut River at First Connecticut Lake near Pittsburg, N.H.	D	--	R	--	1917-1990	--	83
01129200	Connecticut River below Indian Stream near Pittsburg, N.H.	A	M	R	--	1957-2000	--	254
01129300	Halls Stream near East Hereford, Quebec	D	--	U	1943, 1963-94	1963-92	1963-92	84.8
01129400	Black Brook at Averill, Vt.	D, C	--	U	1964-78	--	--	0.88
01129440	Mohawk River near Colebrook, N.H.	A	--	U	1987-2000	1987-2000	1987-2000	35.3
01129500	Connecticut River at North Stratford, N.H.	A	NSIP, H, P	R	--	1931-2000	--	796
01129700	Paul Stream Tributary near Brunswick Springs, Vt.	A, C	--	U	1966-78, 1999-2000	--	--	1.48
01130000	Upper Ammonoosuc River near Groveton, N.H.	A	P	U	1941-80, 1983-2000	1941-80, 1983-2000	1941-80, 1983-2000	230
01131500	Connecticut River near Dalton, N.H.	A	NSIP, H, P	R	--	1928-2000	--	1,510
01133000	East Branch Passumpsic River near East Haven, Vt.	A	--	U	1940-45, 1949-79, 1998-2000	1940-45, 1949-79, 1998-2000	1940-45, 1949-79, 1998-2000	51.3
01133200	Quimby Brook near Lyndonville, Vt.	A, C	--	U	1964-74, 1999-2000	--	--	2.15
01133300	Cold Hill Brook near Lyndon, Vt.	D, C	--	U	1964-78	--	--	1.64

Table 1. Selected information on stream-gaging stations having 10 years of record or more in or adjacent to New Hampshire as of the 2000 water year --Continued

[No., number; mi^2, square mile; Stations are in downstream order. Abbreviations: A, active; D, discontinued; D*, discontinued, but partial record collected; C, crest-stage gage; F, flood control; H, hydrologic forecasting; M, management of water resources; NSIP, Federal interest stream-gaging station according to the National Streamflow Information Program criteria; P, hydropower generation; U, unregulated; R, regulated; SR, some regulation; DIV, flow diversion; --, station not used for specific flow characteristic]

Stream-gaging station No.	Stream-gaging station name	Status	Use	Regu-lation	Period of record used in the analysis			Drainage area (mi^2)
					Peak flow	Mean flow	Low flow	
01134500	Moose River at Victory, Vt.	A	--	U	1948-2000	1948-2000	1948-2000	75.2
01134800	Kirby Brook at Concord, Vt.	A	--	U	1964-74, 1999-2000	1964-74	1964-74	8.13
01135000	Moose River at St. Johnsbury, Vt.	D	--	U	1928-83	1928-83	1928-83	129
01135150	Pope Brook near North Danville, Vt.	A	--	U	1991-2000	1991-2000	--	3.27
01135300	Sleepers River near St. Johnsbury, Vt.	A	--	U	1991-2000	1991-2000	1991-2000	42.5
01135500	Passumpsic River at Passumpsic, Vt.	A	H	U	1929-2000	1929-2000	--	434
01135700	Joes Brook Tributary near East Barnet, Vt.	A, C	--	U	1964-74, 1999	--	--	0.7
01137500	Ammonoosuc River at Bethlehem Junction, N.H.	A	NSIP	U	1940-2000	1940-2000	1940-2000	88.2
01138000	Ammonoosuc River near Bath, N.H.	D	--	U	1940-80	1940-80	1940-80	396
01138500	Connecticut River at Wells River, Vt.	A	H, F, P	R	--	1951-2000	--	2,640
01138800	Keenan Brook at Groton, Vt.	D, C	--	U	1964-74	--	--	4.72
01139000	Wells River at Wells River, Vt.	A	--	U	1941-2000	1941-2000	1941-2000	98.7
01139500	Connecticut River at South Newbury, Vt.	D	--	R	--	1919-1949	--	2,820
01139700	Waits River Tributary near West Topsham, Vt.	A, C	--	U	1964-74, 1999-2000	--	--	1.21
01139800	East Orange Branch at East Orange, Vt.	A	--	U	1959-2000	1959-2000	1959-2000	8.79
01140000	South Branch Waits River near Bradford, Vt.	D	--	U	1940-51	1940-51	1940-51	43.8
01140100	South Branch Waits River Tributary near Bradford Center, Vt.	D, C	--	U	1964-74	--	--	0.21
01140500	Connecticut River at Orford, N.H.	D	--	R	--	1901-21	--	3,090
01140800	West Branch Ompompanoosuc River Tributary at South Strafford, Vt.	D, C	--	U	1964-77	--	--	1.35
01141500	Ompompanoosuc River at Union Village, Vt.	D, F	--	R	--	1941-89	--	131
01141800	Mink Brook near Etna, N.H.	D	--	U	1963-98	1963-98	1963-98	4.88
01142000	White River near Bethel, Vt.	D	--	U	1932-55	1932-55	1932-55	239
01142400	Third Branch White River Tributary at Randolph, Vt.	A, C	--	U	1964-74, 1998-2000	--	--	0.83
01142500	Ayers Brook at Randolph, Vt.	A	--	U	1940-75, 1977-2000	1940-75, 1977-2000	1940-75, 1977-2000	30.5
01144000	White River at West Hartford, Vt.	A	H, F	U	1916-2000	1916-2000	1916-2000	689
01144500	Connecticut River at West Lebanon, N.H.	A	NSIP, H, F, P	R	--	1913-2000	--	4,090
01145000	Mascoma River at West Canaan, N.H.	D*	M	U	1940-78, 1985-2000	1940-78	1940-78	80.4
01150500	Mascoma River at Mascoma, N.H.	A	--	R	--	1924-2000	--	153

Table 1. Selected information on stream-gaging stations having 10 years of record or more in or adjacent to New Hampshire as of the 2000 water year --Continued

[No., number; mi^2, square mile; Stations are in downstream order. Abbreviations: A, active; D, discontinued; D*, discontinued, but partial record collected; C, crest-stage gage; F, flood control; H, hydrologic forecasting; M, management of water resources; NSIP, Federal interest stream-gaging station according to the National Streamflow Information Program criteria; P, hydropower generation; U, unregulated; R, regulated; SR, some regulation; DIV, flow diversion; --, station not used for specific flow characteristic]

Stream-gaging station No.	Stream-gaging station name	Status	Use	Regu-lation	Period of record used in the analysis			Drainage area (mi^2)
					Peak flow	Mean flow	Low flow	
01150800	Kent Brook near Killington, Vt.	A	--	U	1964-74, 1999-2000	--	1964-74	3.26
01150900	Ottauquechee River near West Bridgewater, Vt.	A	--	U	1985-2000	1985-2000	1985-2000	23.3
01151200	Ottauquechee River Tributary near Quechee, Vt.	A, C	--	U	1964-74, 1999-2000	--	--	0.77
01151500	Ottauquechee River at North Hartland, Vt.	A	F	R	1928, 1931-60, 1973	1930-2000	--	222
01152500	Sugar River at West Claremont, N.H.	A	M	SR	1929-2000	1929-2000	--	270
01153000	Black River at North Springfield, Vt.	D	--	R	1930-60, 1973	1931-89	--	158
01153300	Middle Branch Williams River Tributary at Chester, Vt.	A, C	--	U	1964-78, 1999-2000	--	--	3.18
01153500	Williams River at Brockway Mills, Vt.	D	--	U	1941-84	1941-84	1941-84	102
01153550	Williams River near Rockingham, Vt.	A	--	U	1987-2000	1987-2000	1987-2000	112
01154000	Saxtons River at Saxtons River, Vt.	A	--	U	1941-82	1941-82	1941-82	72.1
01154500	Connecticut River at North Walpole, N.H.	A	NSIP, H, F	R	--	1943-2000	--	5,490
01155000	Cold River at Drewsville, N.H.	D	--	U	1941-78	1941-78	1941-78	83.4
01155200	Sackets Brook near Putney, Vt.	D	--	U	1964-74	1964-74	1964-74	10.1
01155300	Flood Brook near Londonderry, Vt.	D	--	U	1964-74	1964-74	1964-74	9.29
01155350	West River Tributary near Jamaica, Vt.	A, C	--	U	1964-78, 1999-2000	--	--	0.93
01155500	West River at Jamaica, Vt.	A	F	R	1936, 1938, 1947-60, 1973, 1987	1947-89, 1996-2000	1947-60	177
01156000	West River at Newfane, Vt.	D	--	R	1920-23, 1928-60	1921-23, 1929-89	1921-23, 1929-60	306
01156300	Whetstone Brook Tributary near Marlboro, Vt.	A, C	--	U	1963-74, 1999-2000	--	--	1.08
01156450	Connecticut River Tributary near Vernon, Vt.	A, C	--	U	1964-74, 1999-2000	--	--	1.1
01156500	Connecticut River at Vernon, Vt.	D	--	R	--	1944-73	--	6,270
01157000	Ashuelot River near Gilsum, N.H.	D	--	U	1923-80	1923-80	--	70.8
01158000	Ashuelot River below Surry Mt. Dam, near Keene, N.H.	A	NSIP, F	R	--	1946-89, 1996-2000	--	102
01158500	Otter Brook near Keene, N.H.	D	--	R	1924-58	1924-58	1924-58	41.9
01158600	Otter Brook below Otter Brook Dam near Keene, N.H.	A	F	R	--	1959-89, 1996-2000	--	47.2

Table 1. Selected information on stream-gaging stations having 10 years of record or more in or adjacent to New Hampshire as of the 2000 water year --Continued

[No., number; mi^2, square mile; Stations are in downstream order. Abbreviations: A, active; D, discontinued; D*, discontinued, but partial record collected; C, crest-stage gage; F, flood control; H, hydrologic forecasting; M, management of water resources; NSIP, Federal interest stream-gaging station according to the National Streamflow Information Program criteria; P, hydropower generation; U, unregulated; R, regulated; SR, some regulation; DIV, flow diversion; --, station not used for specific flow characteristic]

Stream-gaging station No.	Stream-gaging station name	Status	Use	Regu-lation	Period of record used in the analysis			Drainage area (mi^2)
					Peak flow	Mean flow	Low flow	
01160000	South Branch Ashuelot River at Webb near Marlborough, N.H.	D	--	SR	1921-78	1921-78	--	35.8
01161000	Ashuelot River at Hinsdale, N.H.	A	--	R	1908-11, 1915-42	1908-11, 1915-2000	--	421
01161300	Millers Brook at Northfield, Mass.	D, C	--	U	1964-83	--	--	2.31
01161500	Tarbell Brook near Winchendon, Mass.	D	--	R	--	1917-83	--	18.6
01162000	Millers River near Winchendon, Mass.	A	--	R	--	1917-2000	--	82.5
01162500	Priest Brook near Winchendon, Mass.	A	--	U	1917-2000	1917-2000	1917-2000	19
01163100	Wilder Brook near Gardner, Mass.	D, C	--	U	1964-74	--	--	2.44
01163200	Otter River at Otter River, Mass.	A	--	DIV	1965-2000	--	--	34.3
01164000	Millers River at South Royalston, Mass.	D	--	R	--	1916-2000	--	190
01165000	East Branch Tully River near Athol, Mass.	D	--	R	1917-48	1917-90	--	50.6
01165500	Moss Brook at Wendell Depot, Mass.	D	--	U	1910-82	1910-82	1910-82	12.2
01166500	Millers River at Erving, Mass.	A	--	R	--	1916-2000	--	373
01167800	Beaver Brook at Wilmington, Vt.	D	--	U	1964-77	1964-77	1964-77	6.36

Table 5. Station ranking in order of importance for providing regional streamflow information for selected peak-, mean-, and low-flow characteristics and planning horizons, by station number

[No., number; Abbreviations: Peak, instantaneous peak flow with 100-year recurrence interval; Mean, mean annual discharge; Low, 7-day low flow with 10-year recurrence interval; Comp, composite rank; reg, regulated with respect to flow characteristic; csg, crest-stage gage; div, diversion; na, not applicable]

Stream-gaging station No.	Stream-gaging station name	Rank for 0-year planning horizon				Rank for 5-year planning horizon				Rank for 20-year planning horizon			
		Peak	Mean	Low	Comp	Peak	Mean	Low	Comp	Peak	Mean	Low	Comp
101	Isinglass River near Barrington, N.H.	na	na	na	na	48	9	16	11	19	37	16	16
102	Bellamy River near Madbury, N.H.	na	na	na	na	7	7	2	4	4	9	3	5
103	Picassic River near Newfields, N.H.	na	na	na	na	1	3	7	3	2	11	6	6
104	Winnicut River near Greenland, N.H.	na	na	na	na	2	1	4	1	1	7	5	4
105	Taylor River near Hampton, N.H.	na	na	na	na	3	2	3	2	3	4	4	3
106	Salmon Falls River near Somersworth, N.H.	na	na	na	na	reg	11	reg	61	reg	43	reg	84
107	Jones Brook, near Route 153, near Middleton, N.H.	na	na	na	na	9	8	5	5	7	2	2	2
108	Cockermouth River at Groton, N.H.	na	na	na	na	36	15	14	10	11	14	10	11
109	Mad River near Campton, N.H.	na	na	na	na	41	81	17	34	15	15	17	14
110	Big River near Center Barnstead, N.H.	na	na	na	na	27	10	15	9	8	13	8	9
111	Hubbard Brook at West Thornton, N.H.	na	na	na	na	16	80	13	20	9	8	9	7
112	North Branch Contoocook River near Stoddard, N.H.	na	na	na	na	reg	53	reg	104	reg	12	reg	63
114	Clear Stream near Errol, N.H.	na	na	na	na	21	55	12	13	17	101	15	31
115	Stony Brook near Gorham, N.H.	na	na	na	na	26	5	11	7	13	10	14	13
116	Saco River near Glen, N.H.	na	na	na	na	68	28	18	22	22	65	20	23
117	Swift River at Conway, N.H.	na	na	na	na	130	60	19	57	21	91	19	30
120	South Branch Israel River near Jefferson, N.H.	na	na	na	na	35	4	10	8	14	5	12	10
122	Perry Stream near Pittsburg, N.H.	na	na	na	na	11	130	8	42	16	6	13	12
125	South Branch Gale River near Franconia, N.H.	na	na	na	na	19	135	9	45	12	3	11	8
01050900	Four Ponds Brook near Houghton, Maine	22	csg	csg	72	24	csg	csg	81	39	csg	csg	95
01052500	Diamond River near Wentworth Location, N.H.	62	41	46	34	99	78	74	83	97	80	76	71
01053500	Androscoggin River at Errol, N.H.	reg	35	reg	77	reg	83	reg	131	reg	89	reg	137
01054000	Androscoggin River near Gorham, N.H.	reg	83	reg	127	reg	119	reg	159	reg	123	reg	164

Table 5. Station ranking in order of importance for providing regional streamflow information for selected peak-, mean-, and low-flow characteristics and planning horizons, by station number--Continued

[No., number; Abbreviations: Peak, instantaneous peak flow with 100-year recurrence interval; Mean, mean annual discharge; Low, 7-day low flow with 10-year recurrence interval; Comp, composite rank; reg, regulated with respect to flow characteristic; csg, crest-stage gage; div, diversion; na, not applicable]

Stream-gaging station No.	Stream-gaging station name	Rank for 0-year planning horizon				Rank for 5-year planning horizon				Rank for 20-year planning horizon			
		Peak	Mean	Low	Comp	Peak	Mean	Low	Comp	Peak	Mean	Low	Comp
01054200	Wild River at Gilead, Maine	51	23	34	22	79	49	55	48	81	47	54	50
01054300	Ellis River at South Andover, Maine	102	112	43	128	102	95	52	79	83	84	47	58
01054500	Androscoggin River at Rumford, Maine	reg	31	reg	74	reg	84	reg	133	reg	88	reg	135
01055000	Swift River near Roxbury, Maine	76	28	48	35	117	69	77	97	113	77	80	98
01055300	Bog Brook near Buckfield, Maine	34	csg	csg	85	34	csg	csg	98	45	csg	csg	104
01057000	Little Androscoggin River near South Paris, Maine	81	15	60	37	109	57	82	76	115	62	82	81
01062700	Patte Brook near Bethel, Maine	32	csg	csg	82	30	csg	csg	91	38	csg	csg	94
01064300	Ellis River near Jackson, N.H.	24	14	18	7	59	29	43	27	67	36	44	35
01064380	East Branch Saco River at Town Hall Road near Lower Bartlett, N.H.	98	csg	csg	138	47	csg	csg	110	47	csg	csg	106
01064400	Lucy Brook near North Conway, N.H.	37	17	21	13	57	36	40	30	63	35	39	33
01064500	Saco River near Conway, N.H.	87	30	61	44	118	58	83	87	116	63	83	86
01064800	Cold Brook at South Tamworth, N.H.	40	48	3	17	55	66	21	35	52	31	22	20
01064801	Bearcamp River at South Tamworth, N.H.	na	na	na	na	42	21	39	17	24	18	18	15
01065000	Ossipee River at Effingham Falls, N.H.	107	103	reg	137	125	131	reg	161	120	128	reg	157
01065500	Ossipee River at Cornish, Maine	103	88	reg	126	127	99	reg	138	122	103	reg	139
01066000	Saco River at Cornish, Maine	100	82	reg	116	128	104	reg	145	126	110	reg	146
01066100	Pease Brook near Cornish, Maine	33	csg	csg	84	33	csg	csg	95	40	csg	csg	96
01066500	Little Ossipee River near South Limington, Maine	90	96	reg	122	98	103	reg	121	98	102	reg	117
01072100	Salmon Falls River at Milton, N.H.	reg	46	reg	88	reg	50	reg	101	reg	48	reg	90
01072500	Salmon Falls River near South Lebanon, Maine	reg	78	reg	125	reg	71	reg	122	reg	68	reg	115
01072800	Cocheco River near Rochester, N.H.	na	na	na	na	97	14	reg	52	18	67	reg	47
01072850	Mohawk Brook near Center Strafford, N.H.	57	70	5	30	71	109	23	55	62	52	23	32

Table 5. Station ranking in order of importance for providing regional streamflow information for selected peak-, mean-, and low-flow characteristics and planning horizons, by station number--Continued

[No., number; Abbreviations: Peak, instantaneous peak flow with 100-year recurrence interval; Mean, mean annual discharge; Low, 7-day low flow with 10-year recurrence interval; Comp, composite rank; reg, regulated with respect to flow characteristic; csg, crest-stage gage; div, diversion; na, not applicable]

Stream-gaging station No.	Stream-gaging station name	Rank for 0-year planning horizon				Rank for 5-year planning horizon				Rank for 20-year planning horizon			
		Peak	Mean	Low	Comp	Peak	Mean	Low	Comp	Peak	Mean	Low	Comp
01072880	Cocheco River, at Spaulding Turnpike, at Dover	na	na	na	na	28	6	reg	23	26	39	reg	36
01073000	Oyster River near Durham, N.H.	50	25	49	27	78	48	73	53	82	56	77	57
01073500	Lamprey River near Newmarket, N.H.	71	81	reg	89	93	96	reg	111	99	95	reg	111
01073587	Exeter River, at Haigh Road, Near Brentwood, N.H.	na	na	na	na	51	12	reg	37	10	66	reg	43
01073600	Dudley Brook near Exeter, N.H.	29	43	15	15	53	32	34	25	56	33	36	29
01074500	East Branch Pemigewasset River near Lincoln, N.H.	66	29	58	36	85	34	66	50	84	38	57	49
01074520	East Branch Pemigewasset River at Lincoln, N.H.	na	na	na	na	45	33	20	15	23	58	21	18
01075000	Pemigewasset River at Woodstock, N.H.	45	109	36	60	75	111	64	82	76	114	65	77
01075500	Baker River at Wentworth, N.H.	69	68	24	40	104	112	37	86	72	130	37	65
01075800	Stevens Brook near Wentworth, N.H.	44	27	22	18	66	51	42	43	69	44	40	41
01076000	Baker River near Rumney, N.H.	55	65	41	39	87	122	70	116	91	125	72	123
01076500	Pemigewasset River at Plymouth, N.H.	101	33	64	64	131	72	85	117	130	83	85	129
01077000	Squam River at Ashland, N.H.	reg	95	reg	134	reg	123	reg	163	reg	116	reg	158
01078000	Smith River near Bristol, N.H.	86	40	56	48	121	90	81	123	119	98	81	130
01079602	Poorfarm Brook at Ellacoya State Park near Gilford, N.H.	na	na	na	na	5	22	1	6	5	1	1	1
01079900	Shannon Brook near Moultonborough, N.H.	na	na	na	na	4	65	6	12	6	90	7	19
01081500	Merrimack River at Franklin Junction, N.H.	reg	49	reg	91	reg	98	reg	147	reg	106	reg	148
01082000	Contoocook River at Peterborough, N.H.	38	110	25	46	67	126	50	74	75	127	52	74
01083000	Nubanusit Brook below MacDowell Dam near Peterborough, N.H.	reg	66	reg	110	reg	67	reg	118	reg	73	reg	121
01083500	Contoocook River near Elmwood, N.H.	na	na	na	na	40	24	reg	40	51	16	reg	37

Table 5. Station ranking in order of importance for providing regional streamflow information for selected peak-, mean-, and low-flow characteristics and planning horizons, by station number--Continued

[No., number; Abbreviations: Peak, instantaneous peak flow with 100-year recurrence interval; Mean, mean annual discharge; Low, 7-day low flow with 10-year recurrence interval; Comp, composite rank; reg, regulated with respect to flow characteristic; csg, crest-stage gage; div, diversion; na, not applicable]

Stream-gaging station No.	Stream-gaging station name	Rank for 0-year planning horizon				Rank for 5-year planning horizon				Rank for 20-year planning horizon			
		Peak	Mean	Low	Comp	Peak	Mean	Low	Comp	Peak	Mean	Low	Comp
01084000	North Branch Contoocook River near Antrim, N.H.	reg	61	reg	107	reg	70	reg	120	reg	64	reg	112
01084500	Beards Brook near Hillsboro, N.H.	73	100	33	79	92	120	48	100	86	131	46	93
01085000	Contoocook River near Henniker, N.H.	reg	59	reg	103	reg	108	reg	153	reg	99	reg	143
01085800	West Branch Warner River near Bradford, N.H.	30	13	13	8	63	42	41	38	71	42	42	42
01086000	Warner River at Davisville, N.H.	43	101	35	50	76	132	61	105	78	141	63	114
01087000	Blackwater River near Webster, N.H.	reg	60	reg	105	reg	110	reg	155	reg	112	reg	152
01089000	Soucook River near Concord, N.H.	75	69	52	69	89	138	63	125	87	140	61	122
01089100	Soucook River, at Pembroke Road, near Concord, N.H.	39	9	6	6	70	30	35	31	134	30	38	55
01089500	Suncook River at North Chichester, N.H.	96	71	reg	101	110	88	reg	119	112	86	reg	113
01090500	Merrimack River at Manchester, N.H.	reg	104	reg	139	reg	129	reg	167	reg	54	reg	101
01091000	South Branch Piscataquog River near Goffstown, N.H.	88	111	47	118	96	137	60	128	94	135	60	125
01092000	Merrimack River near Goffs Falls, below Manchester, N.H.	reg	74	reg	119	reg	105	reg	149	reg	134	reg	168
01093000	Sucker Brook at Auburn, N.H.	reg	75	reg	121	reg	74	reg	124	reg	69	reg	116
01093800	Stony Brook Tributary near Temple, N.H.	26	7	12	4	64	35	36	32	70	40	41	38
01094000	Souhegan River at Merrimack, N.H.	56	24	reg	33	82	73	reg	70	92	78	reg	76
01094400	North Nashua River at Fitchburg, Mass.	46	div	div	97	74	div	div	134	77	div	div	136
01094500	North Nashua River near Leominster, Mass.	83	div	div	131	108	div	div	160	111	div	div	163
01095800	Easter Brook near North Leominster, Mass.	20	csg	csg	70	17	csg	csg	75	28	csg	csg	75
01096000	Squannacook River near West Groton, Mass.	59	6	reg	28	88	19	reg	51	93	20	reg	54
010965852	Beaver Brook at North Pelham, N.H.	19	4	8	2	49	20	30	16	55	26	32	25

Table 5. Station ranking in order of importance for providing regional streamflow information for selected peak-, mean-, and low-flow characteristics and planning horizons, by station number--Continued

[No., number; Abbreviations: Peak, instantaneous peak flow with 100-year recurrence interval; Mean, mean annual discharge; Low, 7-day low flow with 10-year recurrence interval; Comp, composite rank; reg, regulated with respect to flow characteristic; csg, crest-stage gage; div, diversion; na, not applicable]

Stream-gaging station No.	Stream-gaging station name	Rank for 0-year planning horizon				Rank for 5-year planning horizon				Rank for 20-year planning horizon			
		Peak	Mean	Low	Comp	Peak	Mean	Low	Comp	Peak	Mean	Low	Comp
01097300	Nashoba Brook near Action, Mass.	28	11	20	9	58	31	47	33	68	34	49	39
01100505	Spicket River, at Island Pond Road, at North Salem, N.H.	na	na	na	na	reg	46	reg	99	reg	126	reg	165
01100700	East Meadow River near Haverhill, Mass.	35	94	4	31	52	43	24	26	50	25	24	17
01100800	Cobbler Brook near Merrimac, Mass.	18	csg	csg	68	25	csg	csg	84	44	csg	csg	103
01100900	Parker River Tributary near Georgetown, Mass.	15	csg	csg	65	10	csg	csg	66	25	csg	csg	70
01101000	Parker River at Byfield, Mass.	42	18	28	16	73	40	53	46	80	50	56	51
01127880	Big Brook near Pittsburg, N.H.	25	12	10	5	54	26	28	19	57	29	30	26
01128500	Connecticut River at First Connecticut Lake near Pittsburg, N.H.	reg	53	reg	95	reg	62	reg	113	reg	61	reg	109
01129200	Connecticut River below Indian Stream near Pittsburg, N.H.	reg	45	reg	87	reg	77	reg	126	reg	72	reg	119
01129300	Halls Stream near East Hereford, Quebec	84	54	38	45	107	76	51	64	89	53	50	53
01129400	Black Brook at Averill, Vt.	16	csg	csg	67	12	csg	csg	69	32	csg	csg	85
01129440	Mohawk River near Colebrook, N.H.	17	3	7	1	50	18	27	14	53	23	29	21
01129500	Connecticut River at North Stratford, N.H.	reg	92	reg	133	reg	124	reg	165	reg	119	reg	162
01129700	Paul Stream Tributary near Brunswick Springs, Vt.	3	csg	csg	51	15	csg	csg	73	36	csg	csg	89
01130000	Upper Ammonoosuc River near Groveton, N.H.	78	77	51	80	114	102	78	127	108	104	78	124
01131500	Connecticut River near Dalton, N.H.	reg	106	reg	140	reg	136	reg	169	reg	132	reg	167
01133000	East Branch Passumpsic River near East Haven, Vt.	54	19	30	20	90	68	54	58	90	81	53	61
01133200	Quimby Brook near Lyndonville, Vt.	6	csg	csg	53	20	csg	csg	77	37	csg	csg	91
01133300	Cold Hill Brook near Lyndon, Vt.	23	csg	csg	75	32	csg	csg	94	43	csg	csg	102
01134500	Moose River at Victory, Vt.	68	44	44	38	103	85	67	88	101	82	70	72
01134800	Kirby Brook at Concord, Vt.	8	105	16	29	37	39	33	21	131	60	34	60
01135000	Moose River at St. Johnsbury, Vt.	93	80	59	102	120	101	79	130	107	107	75	120

Table 5. Station ranking in order of importance for providing regional streamflow information for selected peak-, mean-, and low-flow characteristics and planning horizons, by station number--Continued

[No., number; Abbreviations: Peak, instantaneous peak flow with 100-year recurrence interval; Mean, mean annual discharge; Low, 7-day low flow with 10-year recurrence interval; Comp, composite rank; reg, regulated with respect to flow characteristic; csg, crest-stage gage; div, diversion; na, not applicable]

Stream-gaging station No.	Stream-gaging station name	Rank for 0-year planning horizon				Rank for 5-year planning horizon				Rank for 20-year planning horizon			
		Peak	Mean	Low	Comp	Peak	Mean	Low	Comp	Peak	Mean	Low	Comp
01135150	Pope Brook near North Danville, Vt.	13	1	na	14	46	13	na	36	49	19	na	40
01135300	Sleepers River near St. Johnsbury, Vt.	63	8	1	12	84	23	25	28	65	22	26	24
01135500	Passumpsic River at Passumpsic, Vt.	99	87	reg	123	129	127	reg	162	124	122	reg	154
01135700	Joes Brook Tributary near East Barnet, Vt.	10	csg	csg	56	22	csg	csg	78	29	csg	csg	78
01137500	Ammonoosuc River at Bethlehem Junction, N.H.	70	85	42	71	106	63	68	67	104	71	71	66
01138000	Ammonoosuc River near Bath, N.H.	109	108	54	135	134	133	76	164	132	133	73	161
01138500	Connecticut River at Wells River, Vt.	reg	55	reg	98	reg	93	reg	142	reg	105	reg	147
01138800	Keenan Brook at Groton, Vt.	52	csg	csg	106	38	csg	csg	102	42	csg	csg	100
01139000	Wells River at Wells River, Vt.	80	72	40	61	116	121	69	137	110	118	69	131
01139500	Connecticut River at South Newbury, Vt.	reg	64	reg	109	reg	97	reg	146	reg	109	reg	150
01139700	Waits River Tributary near West Topsham, Vt.	1	csg	csg	47	8	csg	csg	65	27	csg	csg	73
01139800	East Orange Branch at East Orange, Vt.	31	10	19	10	69	44	46	44	74	45	48	46
01140000	South Branch Waits River near Bradford, Vt.	48	26	27	19	60	114	38	59	64	70	35	48
01140100	South Branch Waits River Tributary near Bradford Center, Vt.	14	csg	csg	62	6	csg	csg	63	20	csg	csg	69
01140500	Connecticut River at Orford, N.H.	reg	22	reg	63	reg	38	reg	85	reg	32	reg	68
01140800	West Branch Ompompanoosuc River Tributary at South Strafford, Vt.	61	csg	csg	115	80	csg	csg	140	59	csg	csg	118
01141500	Ompompanoosuc River at Union Village, Vt.	reg	67	reg	113	reg	140	reg	170	reg	137	reg	169
01141800	Mink Brook near Etna, N.H.	49	39	26	23	72	59	44	47	73	46	43	44
01142000	White River near Bethel, Vt.	64	36	39	32	86	56	57	54	85	51	55	52
01142400	Third Branch White River Tributary at Randolph, Vt.	11	csg	csg	57	44	csg	csg	108	121	csg	csg	166
01142500	Ayers Brook at Randolph, Vt.	60	21	37	25	95	79	62	68	100	79	67	67
01144000	White River at West Hartford, Vt.	108	57	63	96	133	113	84	154	133	120	84	156

Table 5. Station ranking in order of importance for providing regional streamflow information for selected peak-, mean-, and low-flow characteristics and planning horizons, by station number--Continued

[No., number; Abbreviations: Peak, instantaneous peak flow with 100-year recurrence interval; Mean, mean annual discharge; Low, 7-day low flow with 10-year recurrence interval; Comp, composite rank; reg, regulated with respect to flow characteristic; csg, crest-stage gage; div, diversion; na, not applicable]

Stream-gaging station No.	Stream-gaging station name	Rank for 0-year planning horizon				Rank for 5-year planning horizon				Rank for 20-year planning horizon			
		Peak	Mean	Low	Comp	Peak	Mean	Low	Comp	Peak	Mean	Low	Comp
01144500	Connecticut River at West Lebanon, N.H.	reg	107	reg	141	reg	134	reg	168	reg	139	reg	170
01145000	Mascoma River at West Canaan, N.H.	41	98	31	43	77	141	58	114	79	138	59	110
01150500	Mascoma River at Mascoma, N.H.	reg	56	reg	100	reg	107	reg	152	reg	113	reg	153
01150800	Kent Brook near Killington, Vt.	4	na	2	26	18	na	22	49	34	na	25	56
01150900	Ottauquechee River near West Bridgewater, Vt.	21	2	17	3	56	16	32	18	61	24	33	28
01151200	Ottauquechee River Tributary near Quechee, Vt.	12	csg	csg	58	39	csg	csg	103	33	csg	csg	87
01151500	Ottauquechee River at North Hartland, Vt.	85	84	reg	129	123	116	reg	157	125	115	reg	155
01152500	Sugar River at West Claremont, N.H.	106	89	reg	130	132	128	reg	166	129	124	reg	160
01153000	Black River at North Springfield, Vt.	82	63	reg	108	119	106	reg	151	117	111	reg	151
01153300	Middle Branch Williams River Tributary at Chester, Vt.	7	csg	csg	54	31	csg	csg	92	46	csg	csg	105
01153500	Williams River at Brockway Mills, Vt.	94	93	53	114	113	125	71	144	103	129	66	132
01153550	Williams River near Rockingham, Vt.	36	5	23	11	62	25	45	29	66	28	45	34
01154000	Saxtons River at Saxtons River, Vt.	91	91	50	104	112	118	65	129	105	121	64	126
01154500	Connecticut River at North Walpole, N.H.	reg	51	reg	93	reg	86	reg	135	reg	96	reg	141
01155000	Cold River at Drewsville, N.H.	105	97	45	120	126	139	59	150	118	136	58	140
01155200	Sackets Brook near Putney, Vt.	95	86	14	66	65	52	31	41	54	85	28	45
01155300	Flood Brook near Londonderry, Vt.	104	102	9	86	83	37	26	39	58	21	27	22
01155350	West River Tributary near Jamaica, Vt.	9	csg	csg	55	29	csg	csg	89	41	csg	csg	99
01155500	West River at Jamaica, Vt.	72	73	29	117	115	89	49	136	127	87	51	134
01156000	West River at Newfane, Vt.	89	90	57	132	124	100	80	148	128	100	79	145
01156300	Whetstone Brook Tributary near Marlboro, Vt.	2	csg	csg	49	13	csg	csg	71	31	csg	csg	83
01156450	Connecticut River Tributary near Vernon, Vt.	5	csg	csg	52	14	csg	csg	72	30	csg	csg	82

Table 5. Station ranking in order of importance for providing regional streamflow information for selected peak-, mean-, and low-flow characteristics and planning horizons, by station number--Continued

[No., number; Abbreviations: Peak, instantaneous peak flow with 100-year recurrence interval; Mean, mean annual discharge; Low, 7-day low flow with 10-year recurrence interval; Comp, composite rank; reg, regulated with respect to flow characteristic; csg, crest-stage gage; div, diversion; na, not applicable]

Stream-gaging station No.	Stream-gaging station name	Rank for 0-year planning horizon				Rank for 5-year planning horizon				Rank for 20-year planning horizon			
		Peak	Mean	Low	Comp	Peak	Mean	Low	Comp	Peak	Mean	Low	Comp
01156500	Connecticut River at Vernon, Vt.	reg	50	reg	92	reg	45	reg	96	reg	49	reg	92
01157000	Ashuelot River near Gilsum, N.H.	97	79	reg	111	122	94	reg	132	114	93	reg	127
01158000	Ashuelot River below Surry Mt. Dam, near Keene, N.H.	reg	76	reg	124	reg	117	reg	158	reg	117	reg	159
01158500	Otter Brook near Keene, N.H.	79	20	62	59	105	41	75	90	102	41	74	80
01158600	Otter Brook below Otter Brook Dam near Keene, N.H.	reg	32	reg	76	reg	91	reg	139	reg	92	reg	138
01160000	South Branch Ashuelot River at Webb near Marlborough, N.H.	92	58	reg	83	111	75	reg	106	109	74	reg	97
01160350	Ashuelot River at West Swanzey, N.H.	na	na	na	na	reg	17	reg	62	reg	17	reg	64
01161000	Ashuelot River at Hinsdale, N.H.	65	34	reg	41	100	87	reg	109	123	94	reg	133
01161300	Millers Brook at Northfield, Mass.	47	csg	csg	99	43	csg	csg	107	48	csg	csg	108
01161500	Tarbell Brook near Winchendon, Mass.	reg	52	reg	94	reg	61	reg	112	reg	59	reg	107
01162000	Millers River near Winchendon, Mass.	reg	37	reg	81	reg	64	reg	115	reg	76	reg	128
01162500	Priest Brook near Winchendon, Mass.	67	16	32	24	101	47	56	56	106	57	62	62
01163100	Wilder Brook near Gardner, Mass.	27	csg	csg	78	23	csg	csg	80	35	csg	csg	88
01163200	Otter River at Otter River, Mass.	58	div	div	112	81	div	div	143	88	div	div	144
01164000	Millers River at South Royalston, Mass.	reg	99	reg	136	reg	115	reg	156	reg	108	reg	149
01165000	East Branch Tully River near Athol, Mass.	74	62	reg	73	91	82	reg	93	96	75	reg	79
01165500	Moss Brook at Wendell Depot, Mass.	77	38	55	42	94	54	72	60	95	55	68	59
01166500	Millers River at Erving, Mass.	reg	47	reg	90	reg	92	reg	141	reg	97	reg	142
01167800	Beaver Brook at Wilmington, Vt.	53	42	11	21	61	27	29	24	60	27	31	27

Table 6. Station ranking in order of importance for providing regional streamflow information for selected peak-, mean-, and low-flow characteristics and planning horizons, by rank order

[No., number; Leading zero of station number has been omitted. Abbreviations: Peak, instantaneous peak flow with a 100-year recurrence interval; Mean, annual mean discharge; Low, 7-day low flow with a 10-year recurrence interval; Comp, composite ranking; --, no data available]

Rank	Station No. for 0-year planning horizon				Station No. for 5-year planning horizon				Station No. for 20-year planning horizon			
	Peak	Mean	Low	Comp	Peak	Mean	Low	Comp	Peak	Mean	Low	Comp
1	1139700	1135150	1135300	1129440	103	104	1079602	104	104	1079602	1079602	1079602
2	1156300	1150900	1150800	10965852	104	105	102	105	103	107	107	107
3	1129700	1129440	1064800	1150900	105	103	105	103	105	125	102	105
4	1150800	10965852	1100700	1093800	1079900	120	104	102	102	105	105	104
5	1156450	1153550	1072850	1127880	1079602	115	107	107	1079602	120	104	102
6	1133200	1096000	1089100	1089100	1140100	1072880	1079900	1079602	1079900	122	103	103
7	1153300	1093800	1129440	1064300	102	102	103	115	107	104	1079900	111
8	1134800	1135300	10965852	1085800	1139700	107	122	120	110	111	110	125
9	1155350	1089100	1155300	1097300	107	101	125	110	111	102	111	110
10	1135700	1139800	1127880	1139800	1100900	110	120	108	1073587	115	108	120
11	1142400	1097300	1167800	1153550	122	106	115	101	108	103	125	108
12	1151200	1127880	1093800	1135300	1129400	1073587	114	1079900	125	112	120	122
13	1135150	1085800	1085800	1064400	1156300	1135150	111	114	115	110	122	115
14	1140100	1064300	1155200	1135150	1156450	1072800	108	1129440	120	108	115	109
15	1100900	1057000	1073600	1073600	1129700	108	110	1074520	109	109	114	1064801
16	1129400	1162500	1134800	1101000	111	1150900	101	10965852	122	1083500	101	101
17	1129440	1064400	1150900	1064800	1095800	1160350	109	1064801	114	1160350	109	1100700
18	1100800	1101000	1064300	1075800	1150800	1129440	116	1150900	1072800	1064801	1064801	1074520
19	10965852	1133000	1139800	1140000	125	1096000	117	1127880	101	1135150	117	1079900
20	1095800	1158500	1097300	1133000	1133200	10965852	1074520	111	1140100	1096000	116	1064800
21	1150900	1142500	1064400	1167800	114	1064801	1064800	1134800	117	1155300	1074520	1129440
22	1050900	1140500	1075800	1054200	1135700	1079602	1150800	116	116	1135300	1064800	1155300
23	1133300	1054200	1153550	1141800	1163100	1135300	1072850	1072880	1074520	1129440	1072850	116
24	1064300	1094000	1075500	1162500	1050900	1083500	1100700	1167800	1064801	1150900	1100700	1135300
25	1127880	1073000	1082000	1142500	1100800	1153550	1135300	1073600	1100900	1100700	1150800	10965852

Table 6. Station ranking in order of importance for providing regional streamflow information for selected peak-, mean-, and low-flow characteristics and planning horizons, by rank order--Continued

[No., number; Leading zero of station number has been omitted. Abbreviations: Peak, instantaneous peak flow with a 100-year recurrence interval; Mean, annual mean discharge; Low, 7-day low flow with a 10-year recurrence interval; Comp, composite ranking; --, no data available]

Rank	Station No. for 0-year planning horizon				Station No. for 5-year planning horizon				Station No. for 20-year planning horizon			
	Peak	Mean	Low	Comp	Peak	Mean	Low	Comp	Peak	Mean	Low	Comp
26	1093800	1140000	1141800	1150800	115	1127880	1155300	1100700	1072880	10965852	1135300	1127880
27	1163100	1075800	1140000	1073000	110	1167800	1129440	1064300	1139700	1167800	1155300	1167800
28	1097300	1055000	1101000	1096000	1072880	116	1127880	1135300	1095800	1153550	1155200	1150900
29	1073600	1074500	1155500	1134800	1155350	1064300	1167800	1153550	1135700	1127880	1129440	1073600
30	1085800	1064500	1133000	1072850	1062700	1089100	10965852	1064400	1156450	1089100	1127880	117
31	1139800	1054500	1145000	1100700	1153300	1097300	1155200	1089100	1156300	1064800	1167800	114
32	1062700	1158600	1162500	1142000	1133300	1073600	1150900	1093800	1129400	1140500	10965852	1072850
33	1066100	1076500	1084500	1094000	1066100	1074520	1134800	1097300	1151200	1073600	1150900	1064400
34	1055300	1161000	1054200	1052500	1055300	1074500	1073600	109	1150800	1097300	1134800	1153550
35	1100700	1053500	1086000	1055000	120	1093800	1089100	1064800	1163100	1064400	1140000	1064300
36	1153550	1142000	1075000	1074500	108	1064400	1093800	1135150	1129700	1064300	1073600	1072880
37	1064400	1162000	1142500	1057000	1134800	1155300	1075500	1073587	1133200	101	1075500	1083500
38	1082000	1165500	1129300	1134500	1138800	1140500	1140000	1085800	1062700	1074500	1089100	1093800
39	1089100	1141800	1142000	1076000	1151200	1134800	1064801	1155300	1050900	1072880	1064400	1097300
40	1064800	1078000	1139000	1075500	1083500	1101000	1064400	1083500	1066100	1093800	1075800	1135150
41	1145000	1052500	1076000	1161000	109	1158500	1085800	1155200	1155350	1158500	1093800	1075800
42	1101000	1167800	1137500	1165500	1064801	1085800	1075800	122	1138800	1085800	1085800	1085800
43	1086000	1073600	1054300	1145000	1161300	1100700	1064300	1075800	1133300	106	1141800	1073587
44	1075800	1134500	1134500	1064500	1142400	1139800	1141800	1139800	1100800	1075800	1064300	1141800
45	1075000	1129200	1155000	1129300	1074520	1156500	1153550	125	1055300	1139800	1153550	1155200
46	1094400	1072100	1052500	1082000	1135150	1100505	1139800	1101000	1153300	1141800	1084500	1139800
47	1161300	1166500	1091000	1139700	1064380	1162500	1097300	1141800	1064380	1054200	1054300	1072800
48	1140000	1064800	1055000	1078000	101	1073000	1084500	1054200	1161300	1072100	1139800	1140000
49	1141800	1081500	1073000	1156300	10965852	1054200	1155500	1150800	1135150	1156500	1097300	1074500
50	1073000	1156500	1154000	1086000	1129440	1072100	1082000	1074500	1100700	1101000	1129300	1054200

Table 6. Station ranking in order of importance for providing regional streamflow information for selected peak-, mean-, and low-flow characteristics and planning horizons, by rank order--Continued

[No., number; Leading zero of station number has been omitted. Abbreviations: Peak, instantaneous peak flow with a 100-year recurrence interval; Mean, annual mean discharge; Low, 7-day low flow with a 10-year recurrence interval; Comp, composite ranking; --, no data available]

Rank	Station No. for 0-year planning horizon				Station No. for 5-year planning horizon				Station No. for 20-year planning horizon			
	Peak	Mean	Low	Comp	Peak	Mean	Low	Comp	Peak	Mean	Low	Comp
51	1054200	1154500	1130000	1129700	1073587	1075800	1129300	1096000	1083500	1142000	1155500	1101000
52	1138800	1161500	1089000	1156450	1100700	1155200	1054300	1072800	1064800	1072850	1082000	1142000
53	1167800	1128500	1153500	1133200	1073600	112	1101000	1073000	1129440	1129300	1133000	1129300
54	1133000	1129300	1138000	1153300	1127880	1165500	1133000	1142000	1155200	1090500	1054200	1096000
55	1076000	1138500	1165500	1155350	1064800	114	1054200	1072850	10965852	1165500	1142000	1089100
56	1094000	1150500	1078000	1135700	1150900	1142000	1162500	1162500	1073600	1073000	1101000	1150800
57	1072850	1144000	1156000	1142400	1064400	1057000	1142000	117	1127880	1162500	1074500	1073000
58	1163200	1160000	1074500	1151200	1097300	1064500	1145000	1133000	1155300	1074520	1155000	1054300
59	1096000	1085000	1135000	1158500	1064300	1141800	1155000	1140000	1140800	1161500	1145000	1165500
60	1142500	1087000	1057000	1075000	1140000	117	1091000	1165500	1167800	1134800	1091000	1134800
61	1140800	1084000	1064500	1139000	1167800	1161500	1086000	106	1150900	1128500	1089000	1133000
62	1052500	1165000	1158500	1140100	1153550	1128500	1142500	1160350	1072850	1057000	1162500	1162500
63	1135300	1153000	1144000	1140500	1085800	1137500	1089000	1140100	1064400	1064500	1086000	112
64	1142000	1139500	1076500	1076500	1093800	1162000	1075000	1129300	1140000	1084000	1154000	1160350
65	1161000	1076000	--	1100900	1155200	1079900	1154000	1139700	1135300	116	1075000	1075500
66	1074500	1083000	--	1155200	1075800	1064800	1074500	1100900	1153550	1073587	1153500	1137500
67	1162500	1141500	--	1129400	1082000	1083000	1134500	1137500	1064300	1072800	1142500	1142500
68	1134500	1075500	--	1100800	116	1133000	1137500	1142500	1097300	1072500	1165500	1140500
69	1075500	1089000	--	1089000	1139800	1055000	1139000	1129400	1075800	1093000	1139000	1140100
70	1137500	1072850	--	1095800	1089100	1084000	1076000	1094000	1093800	1140000	1134500	1100900
71	1073500	1089500	--	1137500	1072850	1072500	1153500	1156300	1085800	1137500	1137500	1052500
72	1155500	1139000	--	1050900	1141800	1076500	1165500	1156450	1075500	1129200	1076000	1134500
73	1084500	1155500	--	1165000	1101000	1094000	1073000	1129700	1141800	1083000	1138000	1139700
74	1165000	1092000	--	1054500	1094400	1093000	1052500	1082000	1139800	1160000	1158500	1082000
75	1089000	1093000	--	1133300	1075000	1160000	1158500	1095800	1082000	1165000	1135000	1095800

Table 6. Station ranking in order of importance for providing regional streamflow information for selected peak-, mean-, and low-flow characteristics and planning horizons, by rank order--Continued

[No., number; Leading zero of station number has been omitted. Abbreviations: Peak, instantaneous peak flow with a 100-year recurrence interval; Mean, annual mean discharge; Low, 7-day low flow with a 10-year recurrence interval; Comp, composite ranking; --, no data available]

Rank	Station No. for 0-year planning horizon				Station No. for 5-year planning horizon				Station No. for 20-year planning horizon			
	Peak	Mean	Low	Comp	Peak	Mean	Low	Comp	Peak	Mean	Low	Comp
76	1055000	1158000	--	1158600	1086000	1129300	1138000	1057000	1075000	1162000	1052500	1094000
77	1165500	1130000	--	1053500	1145000	1129200	1055000	1133200	1094400	1055000	1073000	1075000
78	1130000	1072500	--	1163100	1073000	1052500	1130000	1135700	1086000	1094000	1130000	1135700
79	1158500	1157000	--	1084500	1054200	1142500	1135000	1054300	1145000	1142500	1156000	1165000
80	1139000	1135000	--	1130000	1140800	111	1156000	1163100	1101000	1052500	1055000	1158500
81	1057000	1073500	--	1162000	1163200	109	1078000	1050900	1054200	1133000	1078000	1057000
82	1153000	1066000	--	1062700	1094000	1165000	1057000	1075000	1073000	1134500	1057000	1156450
83	1094500	1054000	--	1160000	1155300	1053500	1064500	1052500	1054300	1076500	1064500	1156300
84	1129300	1151500	--	1066100	1135300	1054500	1144000	1100800	1074500	1054300	1144000	106
85	1151500	1137500	--	1055300	1074500	1134500	1076500	1140500	1142000	1155200	1076500	1129400
86	1078000	1155200	--	1155300	1142000	1154500	--	1075500	1084500	1089500	--	1064500
87	1064500	1135500	--	1129200	1076000	1161000	--	1064500	1089000	1155500	--	1151200
88	1091000	1065500	--	1072100	1096000	1089500	--	1134500	1163200	1054500	--	1163100
89	1156000	1152500	--	1073500	1089000	1155500	--	1155350	1129300	1053500	--	1129700
90	1066500	1156000	--	1166500	1133000	1078000	--	1158500	1133000	1079900	--	1072100
91	1154000	1154000	--	1081500	1165000	1158600	--	1062700	1076000	117	--	1133200
92	1160000	1129500	--	1156500	1084500	1166500	--	1153300	1094000	1158600	--	1156500
93	1135000	1153500	--	1154500	1073500	1138500	--	1165000	1096000	1157000	--	1084500
94	1153500	1100700	--	1161500	1165500	1157000	--	1133300	1091000	1161000	--	1062700
95	1155200	1077000	--	1128500	1142500	1054300	--	1066100	1165500	1073500	--	1050900
96	1089500	1066500	--	1144000	1091000	1073500	--	1156500	1165000	1154500	--	1066100
97	1157000	1155000	--	1094400	1072800	1139500	--	1055000	1052500	1166500	--	1160000
98	1064380	1145000	--	1138500	1066500	1081500	--	1055300	1066500	1078000	--	1055000
99	1135500	1164000	--	1161300	1052500	1065500	--	1100505	1073500	1085000	--	1155350
100	1066000	1084500	--	1150500	1161000	1156000	--	1084500	1142500	1156000	--	1138800

Table 6. Station ranking in order of importance for providing regional streamflow information for selected peak-, mean-, and low-flow characteristics and planning horizons, by rank order--Continued

[No., number; Leading zero of station number has been omitted. Abbreviations: Peak, instantaneous peak flow with a 100-year recurrence interval; Mean, annual mean discharge; Low, 7-day low flow with a 10-year recurrence interval; Comp, composite ranking; --, no data available]

Rank	Station No. for 0-year planning horizon				Station No. for 5-year planning horizon				Station No. for 20-year planning horizon			
	Peak	Mean	Low	Comp	Peak	Mean	Low	Comp	Peak	Mean	Low	Comp
101	1076500	1086000	--	1089500	1162500	1135000	--	1072100	1134500	114	--	1090500
102	1054300	1155300	--	1135000	1054300	1130000	--	1138800	1158500	1066500	--	1133300
103	1065500	1065000	--	1085000	1134500	1066500	--	1151200	1153500	1065500	--	1100800
104	1155300	1090500	--	1154000	1075500	1066000	--	112	1137500	1130000	--	1055300
105	1155000	1134800	--	1087000	1158500	1092000	--	1086000	1154000	1138500	--	1153300
106	1152500	1131500	--	1138800	1137500	1153000	--	1160000	1162500	1081500	--	1064380
107	1065000	1144500	--	1084000	1129300	1150500	--	1161300	1135000	1135000	--	1161500
108	1144000	1138000	--	1153000	1094500	1085000	--	1142400	1130000	1164000	--	1161300
109	1138000	1075000	--	1139500	1057000	1072850	--	1161000	1160000	1139500	--	1128500
110	--	1082000	--	1083000	1089500	1087000	--	1064380	1139000	1066000	--	1145000
111	--	1091000	--	1157000	1160000	1075000	--	1073500	1094500	1153000	--	1073500
112	--	1054300	--	1163200	1154000	1075500	--	1161500	1089500	1087000	--	1084000
113	--	--	--	1141500	1153500	1144000	--	1128500	1055000	1150500	--	1089500
114	--	--	--	1153500	1130000	1140000	--	1145000	1157000	1075000	--	1086000
115	--	--	--	1140800	1155500	1164000	--	1162000	1057000	1151500	--	1072500
116	--	--	--	1066000	1139000	1151500	--	1076000	1064500	1077000	--	1093000
117	--	--	--	1155500	1055000	1158000	--	1076500	1153000	1158000	--	1066500
118	--	--	--	1091000	1064500	1154000	--	1083000	1155000	1139000	--	1140800
119	--	--	--	1092000	1153000	1054000	--	1089500	1078000	1129500	--	1129200
120	--	--	--	1155000	1135000	1084500	--	1084000	1065000	1144000	--	1135000
121	--	--	--	1093000	1078000	1139000	--	1066500	1142400	1154000	--	1083000
122	--	--	--	1066500	1157000	1076000	--	1072500	1065500	1135500	--	1089000
123	--	--	--	1135500	1151500	1077000	--	1078000	1161000	1054000	--	1076000
124	--	--	--	1158000	1156000	1129500	--	1093000	1135500	1152500	--	1130000
125	--	--	--	1072500	1065000	1153500	--	1089000	1151500	1076000	--	1091000

Table 6. Station ranking in order of importance for providing regional streamflow information for selected peak-, mean-, and low-flow characteristics and planning horizons, by rank order--Continued

[No., number; Leading zero of station number has been omitted. Abbreviations: Peak, instantaneous peak flow with a 100-year recurrence interval; Mean, annual mean discharge; Low, 7-day low flow with a 10-year recurrence interval; Comp, composite ranking; --, no data available]

Rank	Station No. for 0-year planning horizon				Station No. for 5-year planning horizon				Station No. for 20-year planning horizon			
	Peak	Mean	Low	Comp	Peak	Mean	Low	Comp	Peak	Mean	Low	Comp
126	--	--	--	1065500	1155000	1082000	--	1129200	1066000	1100505	--	1154000
127	--	--	--	1054000	1065500	1135500	--	1130000	1155500	1082000	--	1157000
128	--	--	--	1054300	1066000	1152500	--	1091000	1156000	1065000	--	1162000
129	--	--	--	1151500	1135500	1090500	--	1154000	1152500	1153500	--	1076500
130	--	--	--	1152500	117	122	--	1135000	1076500	1075500	--	1078000
131	--	--	--	1094500	1076500	1065000	--	1053500	1134800	1084500	--	1139000
132	--	--	--	1156000	1152500	1086000	--	1157000	1138000	1131500	--	1153500
133	--	--	--	1129500	1144000	1138000	--	1054500	1144000	1138000	--	1161000
134	--	--	--	1077000	1138000	1144500	--	1094400	1089100	1092000	--	1155500
135	--	--	--	1138000	--	125	--	1154500	--	1091000	--	1054500
136	--	--	--	1164000	--	1131500	--	1155500	--	1155000	--	1094400
137	--	--	--	1065000	--	1091000	--	1139000	--	1141500	--	1053500
138	--	--	--	1064380	--	1089000	--	1065500	--	1145000	--	1158600
139	--	--	--	1090500	--	1155000	--	1158600	--	1144500	--	1065500
140	--	--	--	1131500	--	1141500	--	1140800	--	1089000	--	1155000
141	--	--	--	1144500	--	1145000	--	1166500	--	1086000	--	1154500
142	--	--	--	--	--	--	--	1138500	--	--	--	1166500
143	--	--	--	--	--	--	--	1163200	--	--	--	1085000
144	--	--	--	--	--	--	--	1153500	--	--	--	1163200
145	--	--	--	--	--	--	--	1066000	--	--	--	1156000
146	--	--	--	--	--	--	--	1139500	--	--	--	1066000
147	--	--	--	--	--	--	--	1081500	--	--	--	1138500
148	--	--	--	--	--	--	--	1156000	--	--	--	1081500
149	--	--	--	--	--	--	--	1092000	--	--	--	1164000
150	--	--	--	--	--	--	--	1155000	--	--	--	1139500

Table 6. Station ranking in order of importance for providing regional streamflow information for selected peak-, mean-, and low-flow characteristics and planning horizons, by rank order--Continued

[No., number; Leading zero of station number has been omitted. Abbreviations: Peak, instantaneous peak flow with a 100-year recurrence interval; Mean, annual mean discharge; Low, 7-day low flow with a 10-year recurrence interval; Comp, composite ranking; --, no data available]

Rank	Station No. for 0-year planning horizon				Station No. for 5-year planning horizon				Station No. for 20-year planning horizon			
	Peak	Mean	Low	Comp	Peak	Mean	Low	Comp	Peak	Mean	Low	Comp
151	--	--	--	--	--	--	--	1153000	--	--	--	1153000
152	--	--	--	--	--	--	--	1150500	--	--	--	1087000
153	--	--	--	--	--	--	--	1085000	--	--	--	1150500
154	--	--	--	--	--	--	--	1144000	--	--	--	1135500
155	--	--	--	--	--	--	--	1087000	--	--	--	1151500
156	--	--	--	--	--	--	--	1164000	--	--	--	1144000
157	--	--	--	--	--	--	--	1151500	--	--	--	1065000
158	--	--	--	--	--	--	--	1158000	--	--	--	1077000
159	--	--	--	--	--	--	--	1054000	--	--	--	1158000
160	--	--	--	--	--	--	--	1094500	--	--	--	1152500
161	--	--	--	--	--	--	--	1065000	--	--	--	1138000
162	--	--	--	--	--	--	--	1135500	--	--	--	1129500
163	--	--	--	--	--	--	--	1077000	--	--	--	1094500
164	--	--	--	--	--	--	--	1138000	--	--	--	1054000
165	--	--	--	--	--	--	--	1129500	--	--	--	1100505
166	--	--	--	--	--	--	--	1152500	--	--	--	1142400
167	--	--	--	--	--	--	--	1090500	--	--	--	1131500
168	--	--	--	--	--	--	--	1144500	--	--	--	1092000
169	--	--	--	--	--	--	--	1131500	--	--	--	1141500
170	--	--	--	--	--	--	--	1141500	--	--	--	1144500

APPENDIX 1: BASIN CHARACTERISTICS OF STREAM-GAGING STATIONS IN THE NEW HAMPSHIRE STREAM-GAGING NETWORK

APPENDIX 1: DEFINITIONS

No.	number
figs.	figures
ft	foot
ft/mi	foot per mile
in.	inch
in/h	inch per hour
mi	mile
mi^2	square mile
--	not available
°	degree
Basin length	is measured along a line areally centered through the drainage area from the basin outlet to where the main channel meets the basin divide
Basin slope	is computed as (total length of selected elevation contours) x (contour interval) / drainage area
Relief	is the difference between elevations of the highest point in the basin and the outlet
Azimuth	is the direction of a line from the point on the main channel where, if extended, it intersects the drainage divide to the outlet; The line is measured in degrees clockwise from north at 0 degrees
Width	is drainage area/basin length; Active status stations are on fig. 2; Discontinued stations are on fig. 3
Shape factor	is the ratio computed by basin length/width
Elongation ratio	is the ratio of the diameter of a circle having an area the same as the drainage area to the basin length
Compactness ratio	is the ratio of the perimeter of the basin to the circumference of a circle having an area the same as the drainage area
Channel length	is the length of the main channel extended to the basin divide
Channel slope	is the slope computed between points 10 and 85 percent up the main channel, which is extended to the basin divide
Sinuosity ratio	channel length / basin length
Slope ratio	channel slope / basin slope

Appendix 1. Basin characteristics of stream-gaging stations in the New Hampshire stream-gaging network

[No., number; fig., figure; mi^2, square mile; ft/mi, foot per mile; in., inch; °, degree; in/h, inch per hour]

Station No. (figs. 2 and 3)	Stream-gaging station name	Drainage area (mi^2)	Basin length[1] (mi)	Perimeter[1] (mi)	Basin slope[1] (ft/mi)	Relief[1] (ft)	Azimuth[1] (degrees)	Width[1] (mi)
01050900	Four Ponds Brook near Houghton, Maine	3.26	3.23	9.92	501	874	72	1.01
01052500	Diamond River near Wentworth Location, N.H.	153	21.8	69.9	934	2,316	172	7.00
01053500	Androscoggin River at Errol, N.H.	1,040	45.7	301	203	2,859	209	22.8
01054000	Androscoggin River near Gorham, N.H.	1,360	69.2	268	204	3,260	201	19.7
01054200	Wild River at Gilead, Maine	69.9	15.1	45.6	1,300	4,089	45	4.63
01054300	Ellis River at South Andover, Maine	130	14.8	62.4	807	3,124	159	8.80
01054500	Androscoggin River at Rumford, Maine	2,070	79.2	433	791	5,771	170	26.1
01055000	Swift River near Roxbury, Maine	96.8	15.7	57.7	973	3,124	180	6.18
01055300	Bog Brook near Buckfield, Maine	10.4	5.07	19.1	400	703	196	2.06
01057000	Little Androscoggin River near South Paris, Maine	74.1	11.9	50.1	718	1,925	89	6.24
01062700	Patte Brook near Bethel, Maine	5.61	4.33	13.1	734	1,212	51	1.30
01064300	Ellis River near Jackson, N.H.	10.5	4.84	14.9	2,040	4,773	142	2.17
01064380	East Branch Saco River at Town Hall Road near Lower Bartlett, N.H.	34.2	9.32	37.9	1,030	2,778	194	3.67
01064400	Lucy Brook near North Conway, N.H.	4.68	3.47	9.88	1,530	2,494	55	1.35
01064500	Saco River near Conway, N.H.	385	26.1	109	1,230	5,855	150	14.8
01064800	Cold Brook at South Tamworth, N.H.	5.41	3.23	9.78	1,380	1,850	197	1.68
01064801	Bearcamp River at South Tamworth, N.H.	67.6	--	--	--	--	--	--
01065000	Ossipee River at Effingham Falls, N.H.	329	25.4	119	202	3,601	109	13.0
01065500	Ossipee River at Cornish, Maine	451	38.6	193	638	3,724	100	11.7
01066000	Saco River at Cornish, Maine	1,290	43.6	221	774	5,981	140	29.7
01066100	Pease Brook near Cornish, Maine	4.53	2.89	10.3	693	980	195	1.56
01066500	Little Ossipee River near South Limington, Maine	162	22.5	104	446	1,009	90	7.22
01072100	Salmon Falls River at Milton, N.H.	107	16.7	73.6	130	1,393	160	6.42
01072500	Salmon Falls River near South Lebanon, Maine	139	23.8	89.2	396	1,611	158	5.84
01072800	Cocheco River near Rochester, N.H.	85.7	--	--	--	--	--	--

Appendix 1. Basin characteristics of stream-gaging stations in the New Hampshire stream-gaging network--Continued

[No., number; fig., figure; mi^2, square mile; ft/mi, foot per mile; in., inch; °, degree; in/h, inch per hour]

Station No. (figs. 2 and 3)	Stream-gaging station name	Drainage area (mi^2)	Basin length[1] (mi)	Perimeter[1] (mi)	Basin slope[1] (ft/mi)	Relief[1] (ft)	Azimuth[1] (degrees)	Width[1] (mi)
01072850	Mohawk Brook near Center Strafford, N.H.	7.47	5.16	14.5	490	841	125	1.45
01072880	Cocheco River, at Spaulding Turnpike, at Dover, N.H.	173	--	--	--	--	--	--
01073000	Oyster River near Durham, N.H.	12.2	7.98	24.4	242	315	117	1.53
01073500	Lamprey River near Newmarket, N.H.	181	17.9	107	361	1,105	121	10.1
01073587	Exeter River, at Haigh Road, near Brentwood, N.H.	63.5	--	--	--	--	--	--
01073600	Dudley Brook near Exeter, N.H.	5.86	4.44	12.5	192	169	78	1.32
01074500	East Branch Pemigewasset River near Lincoln, N.H.	106	12.2	52.7	1,650	4,203	211	8.67
01074520	East Branch Pemigewasset River at Lincoln, N.H.	115	--	--	--	--	--	--
01075000	Pemigewasset River at Woodstock, N.H.	195	21.2	77.8	1,530	4,621	209	9.18
01075500	Baker River at Wentworth, N.H.	57.8	13.2	39.5	1,070	4,222	202	4.38
01075800	Stevens Brook near Wentworth, N.H.	3.29	3.32	8.63	1,270	2,664	217	0.990
01076000	Baker River near Rumney, N.H.	143	20.2	80.1	960	4,301	184	7.08
01076500	Pemigewasset River at Plymouth, N.H.	623	34.6	159	1,200	4,780	196	18.0
01077000	Squam River at Ashland, N.H.	57.8	11.1	52	576	1,658	216	5.19
01078000	Smith River near Bristol, N.H.	86	15	60.3	756	2,363	115	5.75
01079602	Poorfarm Brook at Ellacoya State Park near Gilford, N.H.	6.38	--	--	--	--	--	--
01079900	Shannon Brook near Moultonborough, N.H.	6.99	--	--	--	--	--	--
01080500	Lake Winnipesaukee Outlet at Lakeport, N.H.	363	--	--	--	--	--	--
01081000	Winnipesaukee River at Tilton, N.H.	471	--	--	--	--	--	--
01081500	Merrimack River at Franklin Junction, N.H.	1,510	61	367	777	4,918	187	24.7
01082000	Contoocook River at Peterborough, N.H.	67	9.63	50.6	452	2,407	77	6.95
01083000	Nubanusit Brook below MacDowell Dam near Peterborough, N.H.	45.1	8.48	48.3	551	2,387	140	5.32
01083500	Contoocook River near Elmwood, N.H.	168	--	--	--	--	--	--
01084000	North Branch Contoocook River near Antrim, N.H.	54	9.98	54.7	625	1,539	110	5.42
01084500	Beards Brook near Hillsboro, N.H.	55.3	11.7	41.6	643	1,813	144	4.75

Appendix 1. Basin characteristics of stream-gaging stations in the New Hampshire stream-gaging network--Continued

[No., number; fig., figure; mi^2, square mile; ft/mi, foot per mile; in., inch; °, degree; in/h, inch per hour]

Station No. (figs. 2 and 3)	Stream-gaging station name	Drainage area (mi^2)	Basin length[1] (mi)	Perimeter[1] (mi)	Basin slope[1] (ft/mi)	Relief[1] (ft)	Azimuth[1] (degrees)	Width[1] (mi)
01085000	Contoocook River near Henniker, N.H.	367	32.1	115	529	2,652	189	11.4
01085500	Contoocook River below Hopkinton Dam at West Hopkinton, N.H.	427	--	--	--	--	--	--
01085800	West Branch Warner River near Bradford, N.H.	5.91	3.02	11	959	1,542	122	1.96
01086000	Warner River at Davisville, N.H.	146	21.2	73.1	704	2,259	129	6.88
01087000	Blackwater River near Webster, N.H.	128	23	97.8	680	2,476	135	5.57
01088000	Contoocook River at Penacook, N.H.	766	--	--	--	--	--	--
01088500	Merrimack River at Garvin Falls, N.H.	2,430	--	--	--	--	--	--
01089000	Soucook River near Concord, N.H.	77.8	15.7	53.7	431	1,189	193	4.97
01089100	Soucook River, at Pembroke Road, near Concord, N.H.	82.9	17.8	72.8	402	1,197	194	4.66
01089500	Suncook River at North Chichester, N.H.	154	20.4	92.6	467	1,979	190	7.58
01090500	Merrimack River at Manchester, N.H.	2,850	92.3	550	646	5,011	179	30.9
01090800	Piscataquog River below Everett Dam near East Weare, N.H.	63.1	--	--	--	--	--	--
01091000	South Branch Piscataquog River near Goffstown, N.H.	103	13.7	61.9	570	1,708	87	7.49
01091500	Piscataquog River near Goffstown, N.H.	202	--	--	--	--	--	--
01092000	Merrimack River near Goffs Falls, below Manchester, N.H.	3,080	96.4	524	634	5,069	178	32.0
01093000	Sucker Brook at Auburn, N.H.	28.8	8.17	44.4	298	678	178	3.53
01093800	Stony Brook Tributary near Temple, N.H.	3.62	2.65	7.71	913	1,358	137	1.37
01094000	Souhegan River at Merrimack, N.H.	170	30.1	122	484	2,091	53	5.63
01094400	North Nashua River at Fitchburg, Mass.	63.5	11.5	66.2	457	1,575	96	5.53
01094500	North Nashua River near Leominster, Mass.	107	16.9	85.4	461	1,705	116	6.33
01095800	Easter Brook near North Leominster, Mass.	0.92	0.833	5.3	561	264	56	1.10
01096000	Squannacook River near West Groton, Mass.	66	12.8	62.4	426	1,240	99	5.16
010965852	Beaver Brook at North Pelham, N.H.	47.8	14.3	48.1	321	483	200	3.33
01097300	Nashoba Brook near Action, Mass.	12.8	6.15	20.5	248	301	158	2.08
01100505	Spicket River, at Island Pond Road, at North Salem, N.H.	16.5	--	--	--	--	--	--

Appendix 1. Basin characteristics of stream-gaging stations in the New Hampshire stream-gaging network--Continued

[No., number; fig., figure; mi^2, square mile; ft/mi, foot per mile; in., inch; °, degree; in/h, inch per hour]

Station No. (figs. 2 and 3)	Stream-gaging station name	Drainage area (mi^2)	Basin length[1] (mi)	Perimeter[1] (mi)	Basin slope[1] (ft/mi)	Relief[1] (ft)	Azimuth[1] (degrees)	Width[1] (mi)
01100700	East Meadow River near Haverhill, Mass.	4.74	2.85	13.3	304	262	150	1.66
01100800	Cobbler Brook near Merrimack, Mass.	.76	1.29	4.27	322	182	117	.591
01100900	Parker River Tributary near Georgetown, Mass.	.71	1.21	4.35	209	78	167	.585
01101000	Parker River at Byfield, Mass.	21.2	6.79	34.6	268	318	63	3.13
01127880	Big Brook near Pittsburg, N.H.	6.52	4.29	12.5	662	1,470	166	1.52
01128500	Connecticut River at First Connecticut Lake near Pittsburg, N.H.	83	--	--	--	--	--	--
01129200	Connecticut River below Indian Stream near Pittsburg, N.H.	254	--	--	--	--	--	--
01129300	Halls Stream near East Hereford, Quebec	84.8	15.8	53.1	550	1,608	192	5.35
01129400	Black Brook at Averill, Vt.	.88	1.68	5.17	362	495	125	.525
01129440	Mohawk River near Colebrook, N.H.	35.3	8.11	29.3	768	2,224	193	4.35
01129500	Connecticut River at North Stratford, N.H.	796	45.4	233	654	2,837	217	17.5
01129700	Paul Stream Tributary near Brunswick Springs, Vt.	1.48	1.75	5.46	720	761	186	.845
01130000	Upper Ammonoosuc River near Groveton, N.H.	230	23.6	95.5	857	3,202	157	9.76
01131500	Connecticut River near Dalton, N.H.	1,510	73.4	338	694	4,850	207	20.6
01133000	East Branch Passumpsic River near East Haven, Vt.	51.3	12.4	38.1	782	2,388	153	4.15
01133200	Quimby Brook near Lyndonville, Vt.	2.15	2.8	7.36	566	810	113	.768
01133300	Cold Hill Brook near Lyndon, Vt.	1.64	1.54	5.52	692	688	51	1.06
01134500	Moose River at Victory, Vt.	75.2	14.8	48.6	769	2,299	188	5.08
01134800	Kirby Brook at Concord, Vt.	8.13	5.57	15	770	1,585	167	1.46
01135000	Moose River at St. Johnsbury, Vt.	129	24.9	73.8	780	2,823	207	5.18
01135150	Pope Brook near North Danville, Vt.	3.27	2.85	7.6	715	1,124	121	1.15
01135300	Sleepers River near St. Johnsbury, Vt.	42.5	8.5	31.6	709	1,928	116	5.00
01135500	Passumpsic River at Passumpsic, Vt.	434	30.6	110	748	2,951	185	14.2
01135700	Joes Brook Tributary near East Barnet, Vt.	.7	1.32	3.97	897	902	84	.529
01137500	Ammonoosuc River at Bethlehem Junction, N.H.	88.2	18.1	50.9	1,120	5,062	80	4.86

Appendix 1. Basin characteristics of stream-gaging stations in the New Hampshire stream-gaging network--Continued

[No., number; fig., figure; mi^2, square mile; ft/mi, foot per mile; in., inch; °, degree; in/h, inch per hour]

Station No. (figs. 2 and 3)	Stream-gaging station name	Drainage area (mi^2)	Basin length[1] (mi)	Perimeter[1] (mi)	Basin slope[1] (ft/mi)	Relief[1] (ft)	Azimuth[1] (degrees)	Width[1] (mi)
01138000	Ammonoosuc River near Bath, N.H.	396	38	131	890	5,764	72	10.4
01138500	Connecticut River at Wells River, Vt.	2,640	94.9	439	223	5,869	211	27.8
01138800	Keenan Brook at Groton, Vt.	4.72	3.52	11	622	1,322	56	1.34
01139000	Wells River at Wells River, Vt.	98.7	17	60.5	693	2,851	127	5.80
01139500	Connecticut River at South Newbury, Vt.	2,820	104	475	223	5,880	210	27.0
01139700	Waits River Tributary near West Topsham, Vt.	1.21	2.72	6.12	1,160	1,608	134	0.446
01139800	East Orange Branch at East Orange, Vt.	8.79	3.75	14	1,170	1,207	145	2.34
01140000	South Branch Waits River near Bradford, Vt.	43.8	11.8	36.9	893	1,647	111	3.72
01140100	South Branch Waits River Tributary near Bradford Center, Vt.	0.21	0.675	2.04	675	509	155	.312
01140500	Connecticut River at Orford, N.H.	3,090	115	521	741	5,885	209	26.9
01140800	West Branch Ompompanoosuc River Tributary at South Strafford, Vt.	1.35	1.9	5.4	892	778	91	.712
01141500	Ompompanoosuc River at Union Village, Vt.	131	14.1	56.4	926	1,962	152	9.27
01141800	Mink Brook near Etna, N.H.	4.88	2.89	13.4	727	1,247	222	1.69
01142000	White River near Bethel, Vt.	239	24.2	82.3	1,280	3,199	133	9.88
01142400	Third Branch White River Tributary at Randolph, Vt.	.83	1.87	4.69	853	833	173	.442
01142500	Ayers Brook at Randolph, Vt.	30.5	9.26	27	917	1,634	180	3.29
01144000	White River at West Hartford, Vt.	689	34.6	150	1,080	3,373	127	19.9
01144500	Connecticut River at West Lebanon, N.H.	4,090	136	652	801	5,937	209	30.0
01145000	Mascoma River at West Canaan, N.H.	80.4	14.9	51.2	585	2,349	190	5.39
01150500	Mascoma River at Mascoma, N.H.	153	13.5	92.9	632	2,457	53	11.4
01150800	Kent Brook near Killington, Vt.	3.26	3.09	8.05	1,100	2,300	208	1.06
01150900	Ottauquechee River near West Bridgewater, Vt.	23.3	4.51	22.4	1,280	2,956	106	5.15
01151200	Ottauquechee River Tributary near Quechee, Vt.	.77	1.63	4.28	932	751	137	.472
01151500	Ottauquechee River at North Hartland, Vt.	222	26.5	87	1,080	3,789	96	8.41
01152500	Sugar River at West Claremont, N.H.	270	20.2	96	628	2,326	68	13.4

Appendix 1. Basin characteristics of stream-gaging stations in the New Hampshire stream-gaging network--Continued

[No., number; fig., figure; mi^2, square mile; ft/mi, foot per mile; in., inch; °, degree; in/h, inch per hour]

Station No. (figs. 2 and 3)	Stream-gaging station name	Drainage area (mi^2)	Basin length[1] (mi)	Perimeter[1] (mi)	Basin slope[1] (ft/mi)	Relief[1] (ft)	Azimuth[1] (degrees)	Width[1] (mi)
01153000	Black River at North Springfield, Vt.	158	26.1	77.7	853	3,025	139	6.05
01153300	Middle Branch Williams River Tributary at Chester, Vt.	3.18	4.2	10.3	918	1,411	133	.758
01153500	Williams River at Brockway Mills, Vt.	102	15.8	53	909	2,464	85	6.48
01153550	Williams River near Rockingham, Vt.	112	17.8	58.9	906	2,559	90	6.29
01154000	Saxtons River at Saxtons River, Vt.	72.1	12.7	48.3	965	2,441	105	5.69
01154500	Connecticut River at North Walpole, N.H.	5,490	179	786	803	6,041	204	30.6
01155000	Cold River at Drewsville, N.H.	83.4	16.9	54.7	674	1,739	212	4.93
01155200	Sackets Brook near Putney, Vt.	10.1	4.71	15.1	816	1,211	150	2.15
01155300	Flood Brook near Londonderry, Vt.	9.29	5.33	15.6	785	2,028	121	1.74
01155350	West River Tributary near Jamaica, Vt.	.93	1.77	4.46	683	889	57	.524
01155500	West River at Jamaica, Vt.	177	21.6	73.5	731	3,173	182	8.23
01156000	West River at Newfane, Vt.	306	33.5	104	826	3,540	166	9.13
01156300	Whetstone Brook Tributary near Marlboro, Vt.	1.08	1.96	5.16	428	535	218	0.549
01156450	Connecticut River Tributary near Vernon, Vt.	1.1	1.64	5.43	557	495	140	.673
01156500	Connecticut River at Vernon, Vt.	6,270	--	--	--	--	--	--
01157000	Ashuelot River near Gilsum, N.H.	70.8	20.1	51.9	577	1,709	210	3.53
01158000	Ashuelot River below Surry Mt. Dam, near Keene, N.H.	102	24.8	87.4	202	2,018	211	4.11
01158500	Otter Brook near Keene, N.H.	41.9	10.8	33.5	671	1,404	206	3.89
01158600	Otter Brook below Otter Brook Dam near Keene, N.H.	47.2	12.4	43.5	647	1,438	207	3.82
01160000	South Branch Ashuelot River at Webb near Marlborough, N.H.	35.8	5.82	29.3	563	2,418	101	6.15
01160350	Ashuelot River at West Swanzey, N.H.	316	--	--	--	--	--	--
01161000	Ashuelot River at Hinsdale, N.H.	421	45.3	142	624	2,890	212	9.29
01161300	Millers Brook at Northfield, Mass.	2.31	2.28	9.1	837	1,145	96	1.02
01161500	Tarbell Brook near Winchendon, Mass.	18.6	6.46	27.3	356	399	174	2.88
01162000	Millers River near Winchendon, Mass.	82.5	9.71	72.1	352	1,021	69	8.50

Appendix 1. Basin characteristics of stream-gaging stations in the New Hampshire stream-gaging network--Continued

[No., number; fig., figure; mi^2, square mile; ft/mi, foot per mile; in., inch; °, degree; in/h, inch per hour]

Station No. (figs. 2 and 3)	Stream-gaging station name	Drainage area (mi^2)	Basin length[1] (mi)	Perimeter[1] (mi)	Basin slope[1] (ft/mi)	Relief[1] (ft)	Azimuth[1] (degrees)	Width[1] (mi)
01162500	Priest Brook near Winchendon, Mass.	19	10.7	29.6	354	1,016	178	1.78
01163100	Wilder Brook near Gardner, Mass.	2.44	2.03	11.4	298	361	209	1.21
01163200	Otter River at Otter River, Mass.	34.3	6.54	42	345	445	143	5.24
01164000	Millers River at South Royalston, Mass.	190	14.7	125	104	1,062	59	12.9
01165000	East Branch Tully River near Athol, Mass.	50.6	12.2	43.5	453	1,237	181	4.14
01165500	Moss Brook at Wendell Depot, Mass.	12.2	6.38	18.6	558	1,112	181	1.91
01166500	Millers River at Erving, Mass.	373	30.1	183	422	1,478	71	12.4
01167800	Beaver Brook at Wilmington, Vt.	6.36	3.94	14.2	752	820	76	1.62

[1]Basin characteristic computed with Basinsoft (Harvey and Eash, 1995).

Appendix 1. Basin characteristics of stream-gaging stations in the New Hampshire stream-gaging network--Continued

[No., number; fig., figure; mi^2, square mile; ft/mi, foot per mile; in., inch; °, degree; in/h, inch per hour]

Station No.	Shape factor[1]	Elongation ratio[1]	Compactness ratio[1]	Channel length[1] (mi)	Channel slope[1] (ft/mi)	Sinuosity ratio[1]	Slope ratio[1]	Station		Mean basin elevation[2] (ft)	Percent lake and pond area[3]	Basinwide mean annual	
								Latitude (degrees)	Longitude (degrees)			Snowfall[4] (in.)	Precipitation[4] (in.)
01050900	3.21	0.631	1.55	3.62	29.1	1.12	0.191	44.8319	70.7022	2,414	18.3	153	45.7
01052500	3.12	.640	1.60	25.5	42.1	1.17	.045	44.8778	71.0570	2,119	.34	158	48.6
01053500	2.00	.796	2.63	59.9	4.67	1.31	.023	44.7825	71.1294	1,956	8.09	144	45.3
01054000	3.52	.601	2.05	93.9	3.02	1.36	.015	44.4361	71.1908	1,893	6.41	136	44.7
01054200	3.27	.625	1.54	17.4	116	1.15	.089	44.3906	70.9795	2,051	.02	120	53.0
01054300	1.68	.869	1.54	17.7	65.0	1.20	.081	44.5936	70.7336	1,449	1.55	121	44.2
01054500	3.04	.648	2.69	143	10.1	1.80	.013	44.5425	70.5472	1,774	4.49	128	45.7
01055000	2.53	.707	1.65	19.8	81.6	1.27	.084	44.6422	70.5881	1,863	.18	145	46.6
01055300	2.46	.718	1.67	6.10	25.1	1.21	.063	44.2658	70.3161	490	.21	82.9	46.1
01057000	1.90	.816	1.64	14.0	59.3	1.18	.083	44.3036	70.5400	930	1.73	79.4	45.1
01062700	3.34	.617	1.56	4.99	105	1.15	.143	44.3447	70.7922	958	1.29	75.6	42.3
01064300	2.24	.755	1.30	6.60	552	1.36	.270	44.2189	71.2497	3,355	.03	219	73.5
01064380	2.54	.708	1.83	11.9	154	1.27	.150	44.1217	71.1306	1,994	.39	113	54.4
01064400	2.57	.703	1.29	3.86	352	1.11	.230	44.0703	71.1733	1,517	0	114	55.0
01064500	1.77	.848	1.57	39.3	55.0	1.51	.045	43.9908	71.0914	1,805	.39	125	56.7
01064800	1.93	.813	1.19	3.94	377	1.22	.272	43.8158	71.2975	1,677	.01	138	61.0
01064801	--	--	--	--	--	--	--	--	--	--	--	--	--
01065000	1.96	.806	1.86	29.2	8.95	1.15	.044	43.7956	71.0600	977	3.95	89.8	47.6
01065500	3.30	.621	2.56	44.2	13.6	1.15	.021	43.8072	70.7986	878	3.67	87.3	47.3
01066000	1.47	.930	1.73	74.3	12.0	1.70	.016	43.8081	70.7814	1,090	3.17	96.2	49.9
01066100	1.85	.831	1.37	3.49	144	1.21	.208	43.7886	70.7661	650	.16	82.8	49.4
01066500	3.11	.638	2.31	32.5	12.4	1.45	.028	43.6894	70.6708	537	4.02	78.6	47.4
01072100	2.59	.699	2.01	18.7	4.07	1.12	.031	43.4133	70.9875	679	6.96	85.4	48.0
01072500	4.08	.559	2.14	27.0	18.8	1.14	.047	43.3278	70.9278	617	5.53	83.2	47.9
01072800	--	--	--	--	--	--	--	--	--	--	--	--	--

Appendix 1. Basin characteristics of stream-gaging stations in the New Hampshire stream-gaging network--Continued

[No., number; fig., figure; mi^2, square mile; ft/mi, foot per mile; in., inch; °, degree; in/h, inch per hour]

Station No.	Shape factor[1]	Elongation ratio[1]	Compactness ratio[1]	Channel length[1] (mi)	Channel slope[1] (ft/mi)	Sinuosity ratio[1]	Slope ratio[1]	Station		Mean basin elevation[2] (ft)	Percent lake and pond area[3]	Basinwide mean annual	
								Latitude (degrees)	Longitude (degrees)			Snowfall[4] (in.)	Precipitation[4] (in.)
01072850	3.57	0.598	1.50	5.90	89.1	1.14	0.182	43.2631	71.0972	572	1.36	79.5	47.4
01072880	--	--	--	--	--	--	--	--	--	--	--	--	--
01073000	5.22	.494	1.97	8.36	20.7	1.05	.086	43.1486	70.9656	193	1.45	60.1	43.2
01073500	1.77	.848	2.24	36.9	12.6	2.06	.035	43.1025	70.9531	357	2.01	66.9	44.8
01073587	--	--	--	--	--	--	--	--	--	--	--	--	--
01073600	3.37	.615	1.46	4.76	14.3	1.07	.075	42.9931	71.0222	140	.27	61.1	44.1
01074500	1.41	.952	1.44	17.3	90.2	1.42	.055	44.0614	71.6167	2,682	.05	168	61.8
01074520	--	--	--	--	--	--	--	--	--	--	--	--	--
01075000	2.31	.743	1.57	26.2	79.1	1.23	.052	43.9761	71.6800	2,369	.18	147	57.4
01075500	3.02	.650	1.47	16.5	172	1.25	.161	43.8681	71.9095	1,712	.13	95.3	45.4
01075800	3.36	.616	1.34	4.36	416	1.31	.328	43.8367	71.8853	1,629	0	89.6	43.1
01076000	2.85	.668	1.89	24.4	102	1.21	.106	43.7961	71.8450	1,510	0.70	89.8	43.9
01076500	1.93	.814	1.79	45.1	41.1	1.30	.034	43.7592	71.6861	1,780	.50	117	51.3
01077000	2.15	.773	1.93	14.1	10.6	1.26	.018	43.7053	71.6303	800	20.9	81.1	42.2
01078000	2.60	.698	1.84	24.1	22.4	1.61	.030	43.5678	71.7483	1,182	.74	92.3	43.1
01079602	--	--	--	--	--	--	--	--	--	--	--	--	--
01079900	--	--	--	--	--	--	--	--	--	--	--	--	--
01080500	--	--	--	--	--	--	--	--	--	--	--	--	--
01081000	--	--	--	--	--	--	--	--	--	--	--	--	--
01081500	2.47	.719	2.67	72.8	21.8	1.19	.028	43.4228	71.6533	1,226	7.93	98.1	46.0
01082000	1.39	.959	1.75	14.1	39.7	1.46	.088	42.8625	71.9597	1,160	3.41	75.1	44.8
01083000	1.60	.894	2.03	13.6	43.1	1.61	.078	42.8953	71.9869	1,297	7.17	83.5	46.6
01083500	--	--	--	--	--	--	--	--	--	--	--	--	--
01084000	1.84	.831	2.10	14.2	52.6	1.43	.084	43.0817	71.9789	1,479	4.06	90.2	47.3
01084500	2.46	.717	1.58	13.7	74.1	1.17	.115	43.1142	71.9267	1,158	1.62	85.6	46.1

Appendix 1. Basin characteristics of stream-gaging stations in the New Hampshire stream-gaging network--Continued

[No., number; fig., figure; mi^2, square mile; ft/mi, foot per mile; in., inch; °, degree; in/h, inch per hour]

Station No.	Shape factor[1]	Elongation ratio[1]	Compactness ratio[1]	Channel length[1] (mi)	Channel slope[1] (ft/mi)	Sinuosity ratio[1]	Slope ratio[1]	Station		Mean basin elevation[2] (ft)	Percent lake and pond area[3]	Basinwide mean annual	
								Latitude (degrees)	Longitude (degrees)			Snowfall[4] (in.)	Precipitation[4] (in.)
01085000	2.81	0.673	1.69	40.2	14.6	1.25	0.028	43.1528	71.8567	1,135	3.49	81.0	45.6
01085500	--	--	--	--	--	--	--	--	--	--	--	--	--
01085800	1.54	.908	1.28	3.19	374	1.06	.390	43.2592	72.0264	1,470	.23	88.2	45.4
01086000	3.09	.643	1.71	25.4	35.2	1.20	.050	43.2508	71.7331	937	2.25	85.8	44.4
01087000	4.12	.555	2.44	30.6	29.3	1.33	.043	43.2975	71.6942	1,048	1.56	89.9	43.8
01088000	--	--	--	--	--	--	--	--	--	--	--	--	--
01088500	--	--	--	--	--	--	--	--	--	--	--	--	--
01089000	3.15	.634	1.72	19.7	35.5	1.26	.082	43.2394	71.4622	682	1.30	75.3	39.4
01089100	3.81	.577	2.25	21.1	33.9	1.18	.084	43.2130	71.4803	668	1.58	74.9	39.3
01089500	2.69	.686	2.10	26.5	19.2	1.30	.041	43.2578	71.3695	785	3.50	85.7	44.0
01090500	2.99	.653	2.91	113	9.67	1.23	.015	43.0028	71.4694	1,039	5.41	89.4	44.6
01090800	--	--	--	--	--	--	--	--	--	--	--	--	--
01091000	1.83	.836	1.72	23.9	30.2	1.74	.053	43.0150	71.6417	763	1.40	76.8	43.9
01091500	--	--	--	--	--	--	--	--	--	--	--	--	--
01092000	3.02	.650	2.66	118	8.82	1.22	.014	42.9483	71.4644	1,011	5.13	88.2	44.4
01093000	2.32	.741	2.34	10.2	29.1	1.25	.098	43.0056	71.3481	443	2.54	65.0	41.7
01093800	1.94	.810	1.14	3.56	270	1.34	.296	42.8600	71.8333	1,384	0	79.8	48.1
01094000	5.35	.489	2.64	35.3	30.4	1.17	.063	42.8575	71.5067	782	1.14	71.1	44.9
01094400	2.08	.782	2.34	15.8	51.9	1.37	.114	42.5761	71.7886	980	3.56	75.6	47.1
01094500	2.67	.691	2.33	22.8	42.7	1.35	.093	42.5017	71.7230	839	3.12	72.8	46.8
01095800	.76	1.30	1.56	1.23	99.4	1.48	.177	42.5461	71.7125	470	.44	65.9	46.1
01096000	2.48	.716	2.17	16.0	59.2	1.25	.139	42.6342	71.6583	642	1.07	65.5	45.0
010965852	4.30	.546	1.96	17.5	16.1	1.22	.050	42.7831	71.3539	349	1.54	64.8	43.0
01097300	2.96	.656	1.61	7.10	19.3	1.16	.078	42.5125	71.4047	232	.63	55.0	44.2
01100505	--	--	--	--	--	--	--	--	--	--	--	--	--

Appendix 1. Basin characteristics of stream-gaging stations in the New Hampshire stream-gaging network--Continued

[No., number; fig., figure; mi^2, square mile; ft/mi, foot per mile; in., inch; °, degree; in/h, inch per hour]

Station No.	Shape factor[1]	Elongation ratio[1]	Compactness ratio[1]	Channel length[1] (mi)	Channel slope[1] (ft/mi)	Sinuosity ratio[1]	Slope ratio[1]	Station		Mean basin elevation[2] (ft)	Percent lake and pond area[3]	Basinwide mean annual	
								Latitude (degrees)	Longitude (degrees)			Snowfall[4] (in.)	Precipitation[4] (in.)
01100700	1.71	0.862	1.72	3.86	21.6	1.35	0.071	42.8114	71.0331	129	0.81	56.4	44.6
01100800	2.18	.763	1.38	1.56	56.1	1.21	.174	42.8486	71.0195	207	.04	56.6	44.6
01100900	2.07	.786	1.46	1.36	22.5	1.13	.107	42.7342	70.9728	96	3.80	54.8	45.4
01101000	2.17	.765	2.12	9.59	8.90	1.41	.033	42.7528	70.9461	119	2.36	54.5	45.0
01127880	2.82	.672	1.38	4.50	215	1.05	.324	45.1350	71.2064	2,127	.96	186	48.8
01128500	--	--	--	--	--	--	--	45.0872	71.2928	2,141	--	--	50.0
01129200	--	--	--	--	--	--	--	45.0403	71.4436	1,937	--	--	47.5
01129300	2.96	.658	1.63	19.4	36.7	1.23	.067	45.0447	71.4983	1,650	.04	141	43.6
01129400	3.20	.630	1.55	1.91	250	1.14	.690	45.0039	71.6928	1,935	0	131	44.3
01129440	1.86	.827	1.39	9.59	65.2	1.18	.0849	44.8744	71.4106	1,915	.41	110	47.2
01129500	2.59	.701	2.33	58.6	20.5	1.29	.031	44.7497	71.6317	1,771	1.68	138	45.0
01129700	2.07	.784	1.27	1.86	212	1.06	.294	44.6850	71.6217	1,358	.21	95.0	40.4
01130000	2.42	.725	1.78	32.2	27.4	1.37	.032	44.6250	71.4694	1,900	.62	131	47.4
01131500	3.57	.597	2.45	93.3	11.4	1.27	.016	44.4100	71.7211	1,716	1.24	128	45.6
01133000	2.98	.652	1.50	13.1	86.1	1.06	.110	44.6339	71.8981	1,706	.79	124	44.7
01133200	3.65	.591	1.42	3.17	248	1.13	.439	44.5811	71.9864	1,194	.02	88.7	39.1
01133300	1.46	.938	1.22	1.93	239	1.25	.345	44.5297	72.0503	1,306	.06	99.0	40.5
01134500	2.91	.661	1.58	17.0	78.9	1.15	.103	44.5117	71.8369	1,783	.20	121	46.3
01134800	3.82	.578	1.49	6.88	125	1.23	.163	44.4419	71.8792	1,493	.36	95.8	41.8
01135000	4.81	.515	1.83	32.2	45.7	1.29	.059	44.4228	72.0006	1,567	.36	108	43.7
01135150	2.48	.716	1.19	3.27	223	1.15	.312	44.4764	72.1258	1,602	.04	124	44.0
01135300	1.70	.865	1.37	10.6	123	1.24	.174	44.4344	72.0394	1,352	.09	111	41.9
01135500	2.16	.768	1.49	36.2	34.4	1.18	.046	44.3656	72.0397	1,446	.37	108	42.6
01135700	2.50	.715	1.34	1.46	567	1.10	.632	44.3444	72.0645	994	.05	73.5	37.6
01137500	3.74	.585	1.53	21.3	73.4	1.17	.066	44.2689	71.6311	2,472	.04	175	63.8

Appendix 1. Basin characteristics of stream-gaging stations in the New Hampshire stream-gaging network--Continued

[No., number; fig., figure; mi^2, square mile; ft/mi, foot per mile; in., inch; °, degree; in/h, inch per hour]

Station No.	Shape factor[1]	Elongation ratio[1]	Compactness ratio[1]	Channel length[1] (mi)	Channel slope[1] (ft/mi)	Sinuosity ratio[1]	Slope ratio[1]	Station		Mean basin elevation[2] (ft)	Percent lake and pond area[3]	Basinwide mean annual	
								Latitude (degrees)	Longitude (degrees)			Snowfall[4] (in.)	Precipitation[4] (in.)
01138000	3.65	0.591	1.86	52.8	28.6	1.39	0.032	44.1539	71.9861	1,692	0.26	118	48.1
01138500	3.41	.611	2.41	127	10.7	1.34	.015	44.1536	72.0428	1,613	1.17	118	44.8
01138800	2.63	.696	1.43	5.37	161	1.52	.260	44.2028	72.2014	1,464	.11	94.4	42.2
01139000	2.94	.659	1.72	20.3	36.9	1.19	.053	44.1508	72.0653	1,367	1.41	92.1	40.7
01139500	3.87	.576	2.52	137	9.56	1.31	.013	44.0456	72.0761	1,590	1.15	116	44.5
01139700	6.10	.456	1.57	2.77	429	1.02	.370	44.1414	72.3145	2,054	.05	111	43.4
01139800	1.60	.892	1.33	5.89	162	1.57	.139	44.0928	72.3361	1,809	.16	101	41.7
01140000	3.17	.633	1.57	14.0	90.8	1.19	.102	44.0181	72.2083	1,425	.17	86.6	39.8
01140100	2.16	.766	1.25	0.672	625	1.00	.927	44.0206	72.2039	1,039	0	73.9	37.8
01140500	4.26	.545	2.64	148	9.00	1.29	.012	43.9069	72.1397	1,563	1.10	113	44.1
01140800	2.66	.690	1.31	2.04	264	1.07	.296	43.8322	72.3722	1,375	.09	87.5	40.5
01141500	1.52	.916	1.39	19.7	50.1	1.39	.054	43.7897	72.2553	1,269	.90	83.7	39.0
01141800	1.71	.863	1.71	3.44	163	1.19	.224	43.7022	72.1875	1,502	.29	79.2	40.8
01142000	2.45	.721	1.50	30.9	24.5	1.27	.019	43.8125	72.6569	1,774	.07	110	47.8
01142400	4.24	.550	1.46	1.93	402	1.03	.471	43.9317	72.6828	1,215	0	85.9	39.6
01142500	2.81	.673	1.38	10.9	83.5	1.18	.091	43.9344	72.6583	1,342	.20	92.3	40.6
01144000	1.74	.856	1.62	51.3	13.2	1.48	.012	43.7142	72.4186	1,465	.19	97.7	43.2
01144500	4.55	.531	2.88	171	7.76	1.25	.010	43.6461	72.3128	1,509	.93	108	43.5
01145000	2.77	.679	1.61	16.6	59.7	1.11	.102	43.6500	72.0806	1,393	1.54	83.4	41.6
01150500	1.19	1.03	2.12	20.2	26.4	1.5	.042	43.6486	72.1819	1,264	3.93	81.4	40.9
01150800	2.93	.659	1.26	3.60	432	1.17	.393	43.6733	72.8092	2,337	.49	133	55.0
01150900	0.88	1.21	1.31	9.71	138	2.15	.107	43.6222	72.7595	2,027	.841	127	52.6
01151200	3.45	.607	1.38	1.55	294	.948	.316	43.6603	72.432	1,005	.126	81.1	38.8
01151500	3.15	.634	1.65	39.4	25.7	1.49	.024	43.6025	72.3547	1,507	.36	107	45.7
01152500	1.51	.918	1.65	32.4	28.2	1.60	.045	43.3875	72.3625	1,255	4.31	78.1	41.2

Appendix 1. Basin characteristics of stream-gaging stations in the New Hampshire stream-gaging network--Continued

[No., number; fig., figure; mi^2, square mile; ft/mi, foot per mile; in., inch; °, degree; in/h, inch per hour]

Station No.	Shape factor[1]	Elongation ratio[1]	Compactness ratio[1]	Channel length[1] (mi)	Channel slope[1] (ft/mi)	Sinuosity ratio[1]	Slope ratio[1]	Station		Mean basin elevation[2] (ft)	Percent lake and pond area[3]	Basinwide mean annual	
								Latitude (degrees)	Longitude (degrees)			Snowfall[4] (in.)	Precipitation[4] (in.)
01153000	4.32	0.543	1.74	35.3	28.1	1.35	0.033	43.3333	72.5153	1,497	1.08	95.1	45.9
01153300	5.53	.479	1.63	4.53	229	1.08	.249	43.2703	72.6089	1,242	0.06	84.7	43.0
01153500	2.43	.721	1.48	19.5	64.3	1.24	.071	43.2086	72.5181	1,323	.13	90.6	44.7
01153550	2.83	.671	1.57	21.7	63.2	1.22	.070	43.1917	72.4856	1,280	.13	89.8	44.4
01154000	2.23	.754	1.60	18.1	76.2	1.43	.079	43.1372	72.4881	1,294	.21	95.0	45.7
01154500	5.85	.467	2.99	214	5.15	1.20	.006	43.1261	72.4372	1,440	1.09	102	43.3
01155000	3.43	.610	1.69	21.6	46.0	1.28	.068	43.1317	72.3897	1,246	3.63	77.0	40.9
01155200	2.19	.761	1.34	5.04	181	1.07	.221	42.9992	72.5331	991	.49	81.6	43.3
01155300	3.06	.645	1.45	6.06	186	1.14	.237	43.2364	72.8564	1,966	.40	116	51.2
01155350	3.38	.615	1.31	1.77	380	1.00	.557	43.1256	72.8131	1,571	.07	91.6	47.3
01155500	2.62	.695	1.56	25.7	31.7	1.19	.043	43.1089	72.7758	1,768	.66	107	50.4
01156000	3.67	.589	1.67	39.0	31.1	1.16	.038	42.9953	72.6370	1,664	.50	104	49.8
01156300	3.57	.598	1.40	2.03	140	1.04	.327	42.8783	72.7083	1,620	1.04	91.5	50.3
01156450	2.44	.722	1.46	1.87	194	1.14	.348	42.7836	72.5325	608	.08	66.6	44.7
01156500	--	--	--	--	--	--	--	42.7694	72.5139	1,417	--	--	43.6
01157000	5.68	.472	1.74	23.1	37.5	1.15	.065	43.0392	72.2706	1,509	3.36	87.6	44.3
01158000	6.04	.460	2.44	32.0	43.1	1.29	.065	42.9947	72.3117	1,381	2.88	82.6	43.0
01158500	2.77	.676	1.46	12.5	65.6	1.16	.098	42.9653	72.2333	1,413	2.12	82.4	43.9
01158600	3.24	.625	1.79	14.1	63.9	1.14	.099	42.9458	72.2372	1,373	2.41	80.9	43.5
01160000	0.95	1.16	1.38	9.60	79.3	1.65	.141	42.8722	72.2142	1,275	1.79	73.6	43.6
01160350	--	--	--	--	--	--	--	--	--	--	--	--	--
01161000	4.87	.511	1.95	57.4	23.9	1.27	.038	42.7853	72.4867	1,095	1.99	72.0	42.0
01161300	2.23	.752	1.68	2.32	377	1.02	.450	42.6853	72.4531	945	.06	63.5	44.3
01161500	2.24	.753	1.79	8.84	32.7	1.37	.092	42.7125	72.0858	1,041	3.92	69.5	43.0
01162000	1.14	1.06	2.24	16.2	20.6	1.67	.058	42.6842	72.0839	1,117	5.66	72.6	43.9

Appendix 1. Basin characteristics of stream-gaging stations in the New Hampshire stream-gaging network--Continued

[No., number; fig., figure; mi^2, square mile; ft/mi, foot per mile; in., inch; °, degree; in/h, inch per hour]

Station No.	Shape factor[1]	Elongation ratio[1]	Compactness ratio[1]	Channel length[1] (mi)	Channel slope[1] (ft/mi)	Sinuosity ratio[1]	Slope ratio[1]	Station		Mean basin elevation[2] (ft)	Percent lake and pond area[3]	Basinwide mean annual	
								Latitude (degrees)	Longitude (degrees)			Snowfall[4] (in.)	Precipitation[4] (in.)
01162500	6.04	0.460	1.91	12.4	27.8	1.16	0.078	42.6825	72.1156	1,097	1.52	70.0	43.0
01163100	1.68	.868	2.07	2.32	60.3	1.15	.202	42.5950	72.0147	1,106	.16	74.6	43.1
01163200	1.25	1.01	2.03	10.0	23.2	1.53	.067	42.5883	72.0414	1,077	3.23	72.7	43.6
01164000	1.14	1.06	2.55	23.5	17.5	1.6	.052	42.6297	72.1508	1,069	3.52	70.3	43.3
01165000	2.96	.658	1.72	12.6	52.8	1.03	.117	42.6422	72.2261	1,035	2.49	68.6	43.0
01165500	3.34	.618	1.50	7.27	53.6	1.14	.096	42.6028	72.3600	868	1.18	62.1	42.9
01166500	2.43	.724	2.67	44.0	18.0	1.46	.043	42.5975	72.4386	981	2.8	66.2	42.9
01167800	2.44	.722	1.58	4.53	115	1.15	.153	42.8606	72.8511	1,951	0.52	103	53.0

[1]Basin characteristic computed with Basinsoft (Harvey and Eash, 1995).
[2]Basin characteristic computed with data from the National Elevation Dataset (U.S. Geological Survey, 2001b).
[3]Basin characteristic computed with data from preliminaries of the National Hydrography Dataset (U.S. Environmental Protection Agency and U.S. Geological Survey, 2002).
[4]Basin characteristics computed from the PRISM climatic dataset (Daly, 2000).

Appendix 1. Basin characteristics of stream-gaging stations in the New Hampshire stream-gaging network--Continued

[No., number; fig., figure; mi^2, square mile; ft/mi, foot per mile; in., inch; °, degree; in/h, inch per hour]

Station No.	Basinwide		Forest cover[6] (in decimal percent)	Percent of basin greater than 1,200 in altitude[2] (in decimal percent)	X-coordinate of basin centroid in N.H. State plane coordinates (ft)	Y-coordinate of basin centroid in N.H. State plane coordinates (ft)	Average basin slope[2, 7] (degrees)	Percent of basin having a slope greater than		24-hour rainfall with a recurrence interval[8]		Basinwide mean precipitation for the months of June through October[4] (in.)
	Mean annual temperature[4] (° Fahrenheit)	Mean permeability[5] (in/h)						[2, 7]40° (in decimal percent)	40° and north facing[2, 7] (in decimal percent)	2 year (in.)	100 year (in.)	
01050900	38.0	5.01	0.758	1.00	1,241,600	854,796	37.6	0.489	0.105	2.07	4.96	--
01052500	37.0	2.17	.943	1.00	1,112,244	897,731	53.5	.806	.248	1.94	4.08	17.9
01053500	37.4	2.61	.853	1.00	1,176,099	906,438	42.6	.602	.194	1.99	4.50	--
01054000	38.0	2.98	.866	0.983	1,161,954	877,205	42.9	.602	.194	2.00	4.63	--
01054200	40.7	2.90	.989	.874	1,143,322	660,512	62.4	.921	.343	2.51	6.24	19.9
01054300	40.0	4.66	.916	.555	1,219,921	791,460	46.6	.643	.192	2.20	5.27	17.7
01054500	39.1	3.69	.881	.847	1,170,297	823,451	46.6	.659	.214	2.14	5.05	--
01055000	38.9	3.21	.895	.853	1,254,565	822,546	55.2	.841	.230	2.18	5.17	18.1
01055300	44.0	3.67	.811	0	1,340,963	659,961	32.8	.379	.0661	2.59	6.06	--
01057000	42.6	4.19	.849	.170	1,262,630	674,521	45.3	.635	.182	2.54	6.16	18.3
01062700	42.6	3.65	.956	.128	1,206,850	666,241	46.6	.673	.304	2.53	6.26	--
01064300	36.8	2.24	.915	1.00	1,088,371	636,792	70.9	.969	.154	2.51	6.21	22.4
01064380	40.8	3.06	.975	.926	1,130,748	612,278	56.8	.865	.192	2.59	6.42	--
01064400	41.7	6.90	.983	.604	1,106,694	568,815	60.3	.814	.311	2.60	6.49	20.3
01064500	40.5	5.37	.946	.718	1,091,712	580,298	55.8	.789	.208	2.56	6.38	19.1
01064800	41.6	6.31	.974	.855	1,080,526	472,476	64.3	.949	.453	2.56	6.60	21.2
01064801	--	--	--	--	--	--	--	--	--	--	--	--
01065000	42.6	7.00	.866	.223	1,100,674	479,198	39.7	.514	.149	2.62	6.67	--
01065500	42.8	7.17	.865	.169	1,121,036	476,831	39.4	.509	.152	2.65	6.74	--
01066000	42.2	6.41	.874	.309	1,133,562	539,790	43.6	.583	.163	2.63	6.60	--
01066100	43.2	7.74	.928	.0061	1,220,004	463,977	45.5	.645	.290	2.77	7.00	--
01066500	44.3	8.89	.823	.0005	1,203,440	421,739	31.6	.339	.106	2.78	7.04	--
01072100	45.3	5.98	.818	.0265	1,158,269	373,378	31.8	.345	.117	2.75	7.03	--
01072500	45.5	6.10	.806	.0204	1,161,052	361,308	30.2	.310	.0971	2.76	7.05	--
01072800	--	--	--	--	--	--	--	--	--	--	--	--

Appendix 1. Basin characteristics of stream-gaging stations in the New Hampshire stream-gaging network--Continued

[No., number; fig., figure; mi^2, square mile; ft/mi, foot per mile; in., inch; °, degree; in/h, inch per hour]

Station No.	Basinwide: Mean annual temperature[4] (° Fahrenheit)	Basinwide: Mean permeability[5] (in/h)	Forest cover[6] (in decimal percent)	Percent of basin greater than 1,200 in altitude[2] (in decimal percent)	X-coordinate of basin centroid in N.H. State plane coordinates (ft)	Y-coordinate of basin centroid in N.H. State plane coordinates (ft)	Average basin slope[2, 7] (degrees)	Percent of basin having a slope greater than: [2, 7]40° (in decimal percent)	Percent of basin having a slope greater than: 40° and north facing[2, 7] (in decimal percent)	24-hour rainfall with a recurrence interval[8]: 2 year (in.)	24-hour rainfall with a recurrence interval[8]: 100 year (in.)	Basinwide mean precipitation for the months of June through October[4] (in.)
01072850	45.4	4.51	0.866	0	1,129,071	289,137	33.7	0.359	0.0882	2.67	7.01	18.0
01072880	--	--	--	--	--	--	--	--	--	--	--	--
01073000	46.8	5.63	.742	0	1,160,602	240,355	21.2	.0873	.0297	2.76	7.17	16.9
01073500	46.3	5.87	.779	0	1,118,479	221,808	28.6	.255	.0723	2.66	7.04	--
01073587	--	--	--	--	--	--	--	--	--	--	--	--
01073600	46.9	6.05	.746	0	1,146,954	182,908	15.3	.0272	.0052	2.75	7.21	17.4
01074500	39.4	5.25	.988	0.994	1,019,333	588,479	64.2	.906	.250	2.39	6.02	22.0
01074520	--	--	--	--	--	--	--	--	--	--	--	--
01075000	40.3	5.19	.965	.912	998,938	578,565	62.2	.883	.240	2.34	5.87	19.6
01075500	42.2	6.23	.937	.689	930,310	526,402	54.8	.808	.181	2.22	5.54	17.7
01075800	42.9	5.89	.984	.711	931,362	494,433	61.3	.910	.028	2.25	5.69	17.8
01076000	42.5	5.95	.932	.650	919,076	501,716	51.5	.754	.207	2.23	5.57	18.2
01076500	41.7	5.60	.941	.719	973,939	525,742	56.1	.807	.226	2.32	5.87	17.4
01077000	42.9	5.87	.722	.0980	1,016,152	455,940	36.5	.481	.102	2.43	6.30	--
01078000	43.1	5.96	.858	.411	924,358	387,096	46.1	.666	.195	2.32	5.90	18.4
01079602	--	--	--	--	--	--	--	--	--	--	--	--
01079900	--	--	--	--	--	--	--	--	--	--	--	--
01080500	--	--	--	--	--	--	--	--	--	--	--	--
01081000	--	--	--	--	--	--	--	--	--	--	--	--
01081500	42.9	5.61	.813	.382	1,000,787	453,155	44.9	.619	.180	2.39	6.17	--
01082000	44.4	5.58	.770	.285	897,465	114,582	32.9	.356	.103	2.48	5.93	18.1
01083000	44.4	3.24	.821	.600	881,653	155,766	39.2	.524	.135	2.45	5.84	--
01083500	--	--	--	--	--	--	--	--	--	--	--	--

Appendix 1. Basin characteristics of stream-gaging stations in the New Hampshire stream-gaging network--Continued

[No., number; fig., figure; mi^2, square mile; ft/mi, foot per mile; in., inch; °, degree; in/h, inch per hour]

Station No.	Basinwide		Forest cover[6] (in decimal percent)	Percent of basin greater than 1,200 in altitude[2] (in decimal percent)	X-coordinate of basin centroid in N.H. State plane coordinates (ft)	Y-coordinate of basin centroid in N.H. State plane coordinates (ft)	Average basin slope[2, 7] (degrees)	Percent of basin having a slope greater than		24-hour rainfall with a recurrence interval[8]		Basinwide mean precipitation for the months of June through October[4] (in.)
	Mean annual temperature[4] (° Fahrenheit)	Mean permeability[5] (in/h)						[2, 7]40° (in decimal percent)	40° and north facing[2, 7] (in decimal percent)	2 year (in.)	100 year (in.)	
01084000	44.7	3.52	.886	.927	874,684	218,624	41.6	.580	.161	2.41	5.79	--
01084500	45.1	3.40	.890	.362	893,686	241,289	42.0	.579	.137	2.40	5.80	17.5
01085000	44.9	4.59	0.827	0.374	897,416	182,730	37.4	0.474	0.127	2.44	5.86	--
01085500	--	--	--	--	--	--	--	--	--	--	--	--
01085800	44.6	3.58	.938	.698	882,109	278,339	52.3	.757	.214	2.37	5.78	18.3
01086000	44.4	4.39	.845	.183	919,635	290,437	43.6	.611	.178	2.38	5.87	17.0
01087000	43.9	5.34	.849	.316	931,164	338,869	42.9	.594	.169	2.35	5.93	--
01088000	--	--	--	--	--	--	--	--	--	--	--	--
01088500	--	--	--	--	--	--	--	--	--	--	--	--
01089000	44.5	5.20	.816	.0136	1,041,229	308,155	32.2	.328	.0794	2.47	6.50	16.5
01089100	44.5	5.46	.808	.0126	1,040,925	305,581	32.2	.329	.0812	2.47	6.50	16.1
01089500	44.5	3.76	.793	.0462	1,084,501	317,006	34.0	.376	.119	2.54	6.77	--
01090500	43.7	5.45	.802	.278	987,822	362,065	40.8	.535	.153	2.42	6.17	--
01090800	--	--	--	--	--	--	--	--	--	--	--	--
01091000	44.8	5.05	.833	.0343	960,419	180,209	37.0	.458	.143	2.47	6.04	17.0
01091500	--	--	--	--	--	--	--	--	--	--	--	--
01092000	43.8	5.43	.798	.258	986,893	349,120	40.4	.526	.151	2.42	6.17	--
01093000	45.9	5.94	.746	0	1,070,568	197,446	25.5	.180	.0412	2.57	6.82	--
01093800	44.6	3.46	.948	.694	933,925	135,453	52.1	.790	.160	2.48	6.00	18.9
01094000	45.4	5.63	.752	.132	959,755	120,452	36.5	.446	.126	2.51	6.23	--
01094400	45.4	2.32	.678	.0802	923,993	30,313	34.5	.400	.112	2.57	6.36	--
01094500	46.1	2.98	.594	.0495	935,539	26,821	33.8	.384	.0981	2.58	6.48	--
01095800	47.8	1.22	.512	0	970,028	15,156	41.1	.530	.185	2.64	6.87	--

Appendix 1. Basin characteristics of stream-gaging stations in the New Hampshire stream-gaging network--Continued

[No., number; fig., figure; mi^2, square mile; ft/mi, foot per mile; in., inch; °, degree; in/h, inch per hour]

Station No.	Basinwide		Forest cover[6] (in decimal percent)	Percent of basin greater than 1,200 in altitude[2] (in decimal percent)	X-coordinate of basin centroid in N.H. State plane coordinates (ft)	Y-coordinate of basin centroid in N.H. State plane coordinates (ft)	Average basin slope[2, 7] (degrees)	Percent of basin having a slope greater than		24-hour rainfall with a recurrence interval[8]		Basinwide mean precipitation for the months of June through October[4] (in.)
	Mean annual temperature[4] (° Fahrenheit)	Mean permeability[5] (in/h)						[2, 7]40° (in decimal percent)	40° and north facing[2, 7] (in decimal percent)	2 year (in.)	100 year (in.)	
01096000	46.6	4.78	.778	.0177	959,153	66,781	33.0	.356	.0815	2.57	6.47	--
010965852	46.8	6.05	.537	0	1,074,167	135,352	25.4	.170	.0472	2.64	7.05	17.4
01097300	48.3	7.26	.710	0	1,049,179	14,966	21.9	.125	.0273	2.73	7.27	17.6
01100505	--	--	--	--	--	--	--	--	--	--	--	--
01100700	48.5	9.94	0.736	0	1,151,624	121,109	25.0	0.196	0.0679	2.76	7.34	17.4
01100800	48.5	1.30	.901	0	1,154,550	127,676	27.0	.247	.105	2.77	7.34	--
01100900	48.7	7.14	.577	0	1,169,833	83,130	17.7	.0476	.0113	2.79	7.44	--
01101000	48.7	4.30	.684	0	1,162,746	85,905	22.9	.154	.0546	2.79	7.42	17.6
01127880	36.0	1.43	.907	1.00	1,099,324	969,524	45.5	.633	.087	1.91	3.97	23.1
01128500	--	--	--	--	--	--	41.1	--	--	--	3.96	--
01129200	--	--	--	--	--	--	42.3	--	--	--	3.93	--
01129300	38.0	1.07	.878	0.958	1,029,811	961,050	39.7	.536	.138	1.92	3.93	20.2
01129400	38.5	3.11	.867	1.00	974,205	915,090	33.5	.377	.0845	1.93	4.27	--
01129440	37.8	1.71	.811	1.00	1,065,574	872,428	48.5	.703	.195	1.94	4.18	21.1
01129500	38.1	2.29	.866	.932	1,032,577	909,015	43.5	.607	.177	1.94	4.12	--
01129700	40.5	2.45	.962	.837	995,671	792,744	48.1	.706	.419	1.97	4.80	--
01130000	40.0	3.95	.925	.872	1,065,714	769,914	50.1	.713	.220	2.04	4.95	19.1
01131500	39.3	3.12	.861	.826	1,030,437	832,112	44.3	.609	.183	2.01	4.54	--
01133000	39.2	2.85	.932	.895	923,996	804,180	49.2	.731	.135	1.96	4.88	20.9
01133200	40.7	2.19	.724	.551	894,506	760,950	41.9	.589	.113	1.97	4.94	--
01133300	40.5	1.60	.854	.762	880,909	737,731	48.5	.756	.420	1.97	4.94	--
01134500	40.2	2.57	.886	.933	950,087	756,675	47.6	.683	.164	1.97	4.94	20.2
01134800	41.3	2.72	.775	.740	923,098	723,648	49.4	.744	.091	1.97	4.96	18.8

Appendix 1. Basin characteristics of stream-gaging stations in the New Hampshire stream-gaging network--Continued

[No., number; fig., figure; mi^2, square mile; ft/mi, foot per mile; in., inch; °, degree; in/h, inch per hour]

Station No.	Basinwide: Mean annual temperature[4] (° Fahrenheit)	Basinwide: Mean permeability[5] (in/h)	Forest cover[6] (in decimal percent)	Percent of basin greater than 1,200 in altitude[2] (in decimal percent)	X-coordinate of basin centroid in N.H. State plane coordinates (ft)	Y-coordinate of basin centroid in N.H. State plane coordinates (ft)	Average basin slope[2, 7] (degrees)	Percent of basin having a slope greater than: [2, 7]40° (in decimal percent)	Percent of basin having a slope greater than: 40° and north facing[2, 7] (in decimal percent)	24-hour rainfall with a recurrence interval[8]: 2 year (in.)	24-hour rainfall with a recurrence interval[8]: 100 year (in.)	Basinwide mean precipitation for the months of June through October[4] (in.)
01135000	40.8	2.50	.846	.753	937,858	738,712	48.5	.708	.177	1.97	4.96	18.2
01135150	39.1	1.67	.815	.987	859,096	724,568	47.7	.715	.112	1.98	4.94	--
01135300	40.0	1.92	.785	.625	868,567	720,128	46.6	.680	.169	1.98	4.94	18.3
01135500	40.3	2.54	.807	.679	907,050	753,755	47.7	.694	.180	1.97	4.94	--
01135700	42.2	3.26	.753	.142	877,589	671,134	56.3	.894	.422	1.98	4.96	--
01137500	39.3	4.31	.886	1.00	1,036,624	639,093	55.6	.790	.285	2.27	5.09	19.8
01138000	41.4	4.74	0.887	0.698	967,406	625,433	50.0	0.708	0.256	2.19	5.02	17.4
01138500	40.0	3.31	.847	.746	985,438	770,486	45.9	.645	.195	2.03	4.73	--
01138800	41.0	1.92	.880	.860	836,077	614,798	44.8	.646	.288	2.00	4.97	--
01139000	41.0	2.49	.833	.645	840,684	627,177	46.1	.671	.199	2.00	4.96	17.4
01139500	40.1	3.36	.844	.729	977,875	759,594	45.9	.645	.196	2.03	4.74	--
01139700	40.3	2.94	.941	1.00	809,325	604,528	59.5	.869	.048	2.01	4.97	--
01139800	40.6	2.87	.906	1.00	799,657	582,009	61.3	.926	.279	2.03	4.97	19.7
01140000	41.3	2.55	.856	.693	815,558	555,228	53.8	.826	.275	2.06	4.99	18.3
01140100	42.1	2.01	.719	.0598	844,321	553,064	51.8	.900	.477	2.08	5	--
01140500	40.3	3.37	.844	.712	966,548	742,141	46.4	.656	.198	2.03	4.77	--
01140800	42.0	5.31	.643	.831	793,619	485,447	56.1	.903	.394	2.15	5.08	--
01141500	42.2	3.12	.861	.560	815,122	507,014	53.8	.824	.219	2.13	5.05	--
01141800	43.3	2.84	.851	.906	850,903	439,568	48.9	.735	.144	2.22	5.22	18.4
01142000	41.9	2.78	.935	.864	678,032	492,117	62.4	.920	.270	2.13	5.03	17.2
01142400	42.5	2.69	.847	.552	715,920	528,259	53.9	.827	0	2.10	5	--
01142500	42.0	2.57	.731	.650	722,155	549,554	53.2	.792	.121	2.08	4.99	17
01144000	42.0	2.94	.839	.689	721,818	506,847	57.7	.862	.241	2.12	5.03	16.7
01144500	40.8	3.31	.839	.681	914,680	682,675	48.6	.698	.206	2.06	4.85	--

Appendix 1. Basin characteristics of stream-gaging stations in the New Hampshire stream-gaging network--Continued

[No., number; fig., figure; mi^2, square mile; ft/mi, foot per mile; in., inch; °, degree; in/h, inch per hour]

Station No.	Basinwide		Forest cover[6] (in decimal percent)	Percent of basin greater than 1,200 in altitude[2] (in decimal percent)	X-coordinate of basin centroid in N.H. State plane coordinates (ft)	Y-coordinate of basin centroid in N.H. State plane coordinates (ft)	Average basin slope[2, 7] (degrees)	Percent of basin having a slope greater than		24-hour rainfall with a recurrence interval[8]		Basinwide mean precipitation for the months of June through October[4] (in.)
	Mean annual temperature[4] (° Fahrenheit)	Mean permeability[5] (in/h)						40°[2, 7] (in decimal percent)	40° and north facing[2, 7] (in decimal percent)	2 year (in.)	100 year (in.)	
01145000	42.9	5.03	.853	.646	893,086	437,294	42.4	.583	.127	2.25	5.25	17.6
01150500	43.1	4.46	.827	.498	881,145	428,427	42.0	.576	.126	2.25	5.65	--
01150800	41.5	3.32	.950	1	678,853	422,860	60.4	.905	.468	2.21	5.15	22.8
01150900	41.3	2.79	.858	.978	686,519	424,567	59.9	.868	.313	2.21	5.16	21
01151200	43.4	2.01	.655	.0866	780,474	427,981	56.0	.856	.036	2.20	5.21	--
01151500	42.2	2.83	.858	.698	733,070	409,846	57.7	.866	.255	2.22	5.24	--
01152500	44.2	4.39	.781	.534	854,361	329,715	42.5	.590	.168	2.30	5.55	--
01153000	42.8	2.78	0.861	0.703	722,797	341,718	51.3	0.758	0.217	2.29	5.44	--
01153300	43.4	1.70	.960	.563	727,201	291,021	54.9	.852	.194	2.35	5.63	--
01153500	43.0	2.49	.893	.567	723,723	282,924	54.1	.820	.252	2.36	5.66	17.5
01153550	43.1	2.64	.886	.523	726,870	280,703	54.0	.818	.247	2.36	5.67	17.5
01154000	42.6	3.31	.906	.556	733,359	239,472	54.8	.825	.223	2.42	5.81	18.0
01154500	41.5	3.37	.833	.632	882,494	597,525	48.8	.703	.206	2.11	5.03	--
01155000	44.6	3.09	.855	.653	822,023	251,882	44.9	.639	.185	2.39	5.76	16.8
01155200	43.9	2.67	.846	.224	745,144	191,015	51.7	.811	.152	2.47	5.92	17.4
01155300	42.0	2.92	.922	1.00	654,567	277,579	49.0	.716	.170	2.37	5.63	20.2
01155350	41.4	3.35	.977	1.00	674,732	228,200	49.2	.789	.409	2.45	5.87	--
01155500	41.7	2.53	.898	.933	668,424	266,455	46.8	.665	.169	2.39	5.7	19.1
01156000	41.7	2.83	.906	.846	676,562	242,612	50.1	.731	.203	2.43	5.81	18.0
01156300	43.0	2.97	.807	1.00	703,055	135,179	36.4	.404	.155	2.50	6	--
01156450	45.9	2.05	.854	0	747,986	105,241	40.7	.550	.088	2.50	5.99	--
01156500	--	--	--	--	--	--	48.3	--	--	--	5.13	--
01157000	44.4	3.98	.876	.900	847,456	233,666	41.4	.568	.155	2.41	5.81	--

Appendix 1. Basin characteristics of stream-gaging stations in the New Hampshire stream-gaging network--Continued

[No., number; fig., figure; mi^2, square mile; ft/mi, foot per mile; in., inch; °, degree; in/h, inch per hour]

Station No.	Basinwide: Mean annual temperature[4] (° Fahrenheit)	Basinwide: Mean permeability[5] (in/h)	Forest cover[6] (in decimal percent)	Percent of basin greater than 1,200 in altitude[2] (in decimal percent)	X-coordinate of basin centroid in N.H. State plane coordinates (ft)	Y-coordinate of basin centroid in N.H. State plane coordinates (ft)	Average basin slope[2, 7] (degrees)	Percent of basin having a slope greater than: [2, 7]40° (in decimal percent)	Percent of basin having a slope greater than: 40° and north facing[2, 7] (in decimal percent)	24-hour rainfall with a recurrence interval[8]: 2 year (in.)	24-hour rainfall with a recurrence interval[8]: 100 year (in.)	Basinwide mean precipitation for the months of June through October[4] (in.)
01158000	44.3	3.84	.873	.759	836,461	224,039	43.7	.611	.153	2.41	5.78	--
01158500	43.9	2.80	.882	.891	850,072	189,905	45.7	.676	.199	2.45	5.9	17.6
01158600	44.0	2.80	.878	.823	847,956	188,273	45.6	.670	.186	2.43	5.81	--
01160000	43.7	3.54	.839	.574	849,463	125,573	39.0	.482	.128	2.48	5.98	--
01160350	--	--	--	--	--	--	--	--	--	--	--	--
01161000	44.6	4.20	.829	.420	825,888	160,410	42.6	.594	.157	2.47	5.94	--
01161300	45.3	4.18	.880	.216	780,961	65,195	52.7	.791	.353	2.50	5.99	--
01161500	44.1	3.80	.729	.0266	872,709	94,056	27.8	.239	.049	2.48	5.9	--
01162000	44.0	4.34	.692	.190	892,558	77,785	28.4	.251	.059	2.50	5.99	--
01162500	44.0	3.81	0.794	0.197	860,720	93,669	29.8	0.269	0.0345	2.48	5.89	17.7
01163100	44.0	1.75	.847	.0633	894,027	43,459	23.8	.177	.020	2.53	6.09	--
01163200	44.1	3.68	.542	.0458	893,469	23,263	26.8	.231	.0586	2.54	6.16	--
01164000	44.1	4.58	.678	.118	883,086	59,646	28.1	.243	.055	2.51	6.01	--
01165000	44.2	4.23	.825	.142	841,736	78,782	35.1	.408	.055	2.50	5.99	--
01165500	44.8	5.11	.876	.0050	798,183	54,117	39.8	.531	.115	2.50	5.99	18.2
01166500	44.5	4.92	.730	.0869	853,914	55,520	32.8	.355	.072	2.51	5.97	--
01167800	42.6	1.72	.868	1.00	674,198	132,718	48.9	.731	.240	2.51	6.03	21.8

[2]Basin characteristic computed with data from the National Elevation Dataset (U.S. Geological Survey, 2001b).
[4]Basin characteristic computed with data from the PRISM climatic dataset (Daly, 2000).
[5]Basin characteristic computed with data from the STATSGO soils dataset (U.S. Geological Survey, 1997).
[6]Basin characteristic computed with data from the Global Land Cover Characterization Dataset (U.S. Geological Survey, 2001a).
[7]Average basin slope in degrees determined using the ARC/INFO SLOPE command (Environmental Systems Research Institute, 1994) with a Z-factor of 10.
[8]Basin characteristic computed with a coverage made from data in Wilkes and Cember (1993).

APPENDIX 1. REFERENCES

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