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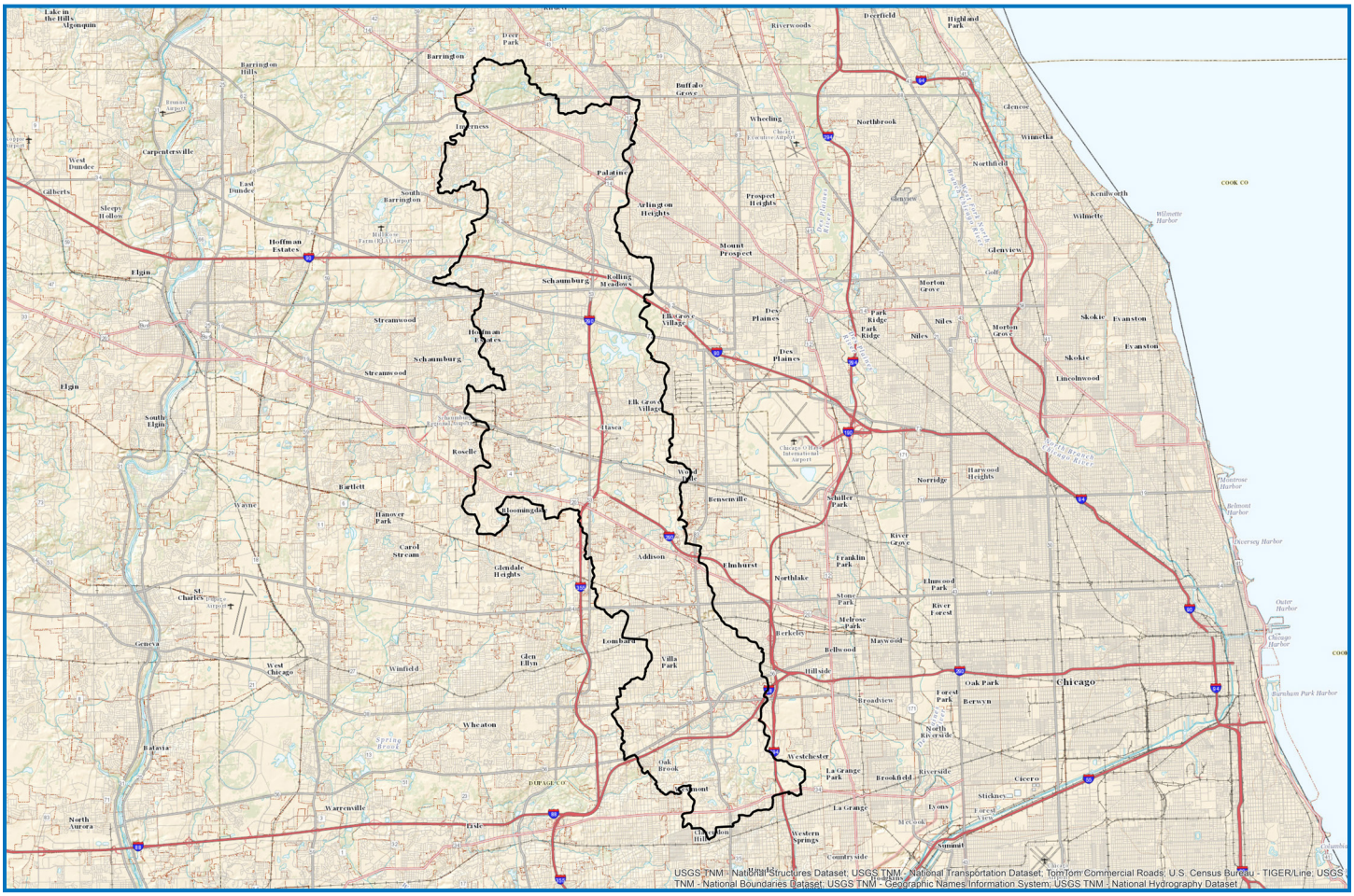
Watershed Data Management (WDM) Database for Salt Creek Streamflow Simulation, DuPage County, Illinois, Water Years 2005–11



Data Series 870

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

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Conversion Factors

Multiply	By	To obtain
	Length	
inch (in.)	2.54	centimeter (cm)
inch (in.)	25.4	millimeter (mm)
foot (ft)	0.3048	meter (m)
mile (mi)	1.609	kilometer (km)
	Volume	
acre-foot (acre-ft)	1,233	cubic meter (m^3)
	Flow rate	
cubic foot per second (ft^3/s)	0.02832	cubic meter per second (m^3/s)
	Precipitation, Evapotranspiration	
inches per year (in/yr)	25.4	millimeter per year (mm/yr)
	Solar radiation	
Langleys per day (Lg/d)	279.12	Watts per square meter (W/m^2)

Temperature in degrees Celsius (°C) may be converted to degrees Fahrenheit (°F) as follows:

$°F=(1.8×°C)+32$

Watershed Data Management (WDM) Database for Salt Creek Streamflow Simulation, DuPage County, Illinois, Water Years 2005–11

By Maitreyee Bera

Abstract

The U.S. Geological Survey (USGS), in cooperation with DuPage County Stormwater Management Division, maintains a USGS database of hourly meteorologic and hydrologic data for use in a near real-time streamflow simulation system, which assists in the management and operation of reservoirs and other flood-control structures in the Salt Creek watershed in DuPage County, Illinois. Most of the precipitation data are collected from a tipping-bucket rain-gage network located in and near DuPage County. The other meteorologic data (wind speed, solar radiation, air temperature, and dewpoint temperature) are collected at Argonne National Laboratory in Argonne, Ill. Potential evapotranspiration is computed from the meteorologic data. The hydrologic data (discharge and stage) are collected at USGS streamflow-gaging stations in DuPage County. These data are stored in a Watershed Data Management (WDM) database. An earlier report (Murphy and Ishii, 2006) describes in detail the WDM database development including the processing of data from January 1, 1997, through September 30, 2004, in SEP04.WDM database. SEP04.WDM is updated with the appended data from October 1, 2004, through September 30, 2011, water years 2005–11 and renamed as SEP11.WDM. This report details the processing of meteorologic and hydrologic data in SEP11.WDM.

This report provides a record of snow affected periods and the data used to fill missing-record periods for each precipitation site during water years 2005–11. The meteorologic data filling methods are described in detail in Over and others (2010), and an update is provided in this report.

Introduction

The U.S. Geological Survey (USGS), in cooperation with DuPage County Stormwater Management Division, maintains a database of hourly meteorologic and hydrologic data for use in a near real-time streamflow simulation system, which assists in the management and operation of reservoirs and other flood-control structures in the Salt Creek watershed in DuPage County, Illinois. The Hydrological Simulation Program-FORTRAN (HSPF) hydrologic model (Bicknell and others, 2000) and Full Equations (FEQ) hydraulic model (Franz and Melching, 1997) are currently (2013) used by the USGS and DuPage County to develop simulations of the watershed rainfall runoff and routed streamflow, respectively, at a 1-hour time step. The meteorologic and hydrologic data are collected at various sites (Murphy and Ishii, 2006). The precipitation data are from a watershed- and county-wide network of real-time tipping-bucket rain gages maintained by the USGS and DuPage County. The other meteorologic data (wind speed, solar radiation, air temperature, and dewpoint temperature) are from Argonne National Laboratory (ANL) in Argonne, Ill. Potential evapotranspiration is computed from the meteorologic data according to the method described in Murphy (2005). The hydrologic data are from both USGS stage and discharge gages and DuPage County stage gages. Water-surface elevation (stage) and discharge data for Salt Creek are collected by the USGS at four locations, and stage data are collected by DuPage County at two additional locations. These data are stored weekly in the WDM database by USGS staff and are initially provisional and subject to change due to periodic equipment malfunctions. The WDM database is updated and corrected annually with quality-assured and quality-controlled (QA/QC) meteorologic and hydrologic data. This annual update is done to maintain a record of the data in a model-compatible format and for studying historical storms. Although this database was compiled for the Salt Creek watershed, the data could be used in other hydrologic models in northeastern Illinois or by scientists studying rain distribution or climate in the area.

Murphy and Ishii (2006) describe the data sources and data organization used to create the QA/QC version of the WDM database. The estimation of missing or inaccurate precipitation data through September 30, 2004 in SEP04.WDM is described in this earlier report as well. The procedures to ensure quality of the streamflow data are given in the annual USGS Water Data Reports (WDR) for Illinois (U.S. Geological Survey, 2012) and are not repeated in this report. This report discusses the procedures to ensure quality of the data

in SEP11.WDM for the period from October 1, 2004, through September 30, 2011.

Precipitation data are collected at 14 rain gages in and near Salt Creek watershed. Some of the rain gages are heated (table 1). The rain gages have radio telemetry, which transmits the data to a DuPage county facility. The non-precipitation meteorologic data (wind speed, solar radiation, air temperature, and dewpoint temperature) in the database are collected at ANL in Argonne, Ill. The treatment of missing and snow-affected data in the precipitation datasets is the focus of this report. The processing of other meteorologic and hydrologic datasets is described in the annual Water Data Report (U. S. Geological Survey, 2012) and Over and others (2010).

Watershed Data Management Database

The Watershed Data Management (WDM) database is a binary, direct-access electronic file (Flynn and others, 1995). It was developed by the USGS to be used with hydrologic and water-quality models and analyses. Data within the WDM database are stored in datasets. WDM databases can be accessed with the ANNIE computer program (Flynn and others, 1995) or with the GenScn (Generation and Analysis of Model Simulation Scenarios) computer program (Kittle and others, 1998). The SEP11.WDM database contains meteorologic and hydrologic data collected in and near DuPage County, Ill. The data organization and sources for precipitation, stage, and discharge are discussed in an earlier report (Murphy and Ishii, 2006). To aid in identifying the contents of WDM database, dataset numbers (DSNs) are assigned in a systematic order as described in Murphy and Ishii (2006).

As part of the process for ensuring data quality, the SEP11.WDM precipitation datasets were filled where data were missing and corrected for periods of snowfall. The missing data were most often filled with radio transmitted data but sometimes were filled with data from a nearby rain gage if there is no backup record available at the gage. Periods of snowfall were flagged using records from heated gages (table 1) and air temperature observations at O'Hare International Airport. Snowfall-affected data were processed two different ways in the database; for water years 1997–2000, the snowfall-affected data were replaced with data from a heated gage outside the network, and for water years (WY) 2001–11, the snowfall-affected data were left as recorded at the gage. Appendix table 1-2 lists snowfall-affected periods during WY2005–11 in the SEP11.WDM database for DuPage County. Missing non-precipitation meteorologic data were filled from meteorologic stations at St. Charles, Ill., and O'Hare International Airport, Chicago, Ill.

[1] A water year is the 12-month period from October 1 to September 30. It is designated by the year in which it ends.

Precipitation Data

The source of precipitation data in the WDM database is the USGS/DuPage County real-time flood-warning rain-gage network. Murphy and Ishii (2006) describe the location and type of gages in detail; however, the network has had some changes since that report. The northern boundary of the watershed delineation has been slightly expanded to represent improved topographic information. The rain gage at Busse Woods at Elk Grove Village, Ill., (DSN 145; site 45) was discontinued on May 28, 2007. The rain gage at Westmont Water Department at Westmont, Ill., (DSN 185; site 85) was removed on April 13, 2010. Two new gages were added in Cook County. The rain gage at Harper College at Palatine, Ill., (420453088043200; site 89) began recording data on July 16, 2008 and a new dataset for this new rain gage was added to SEP11.WDM as DSN 189. The rain gage at Sundling Jr. High School at Palatine, Ill., (420745088025901; site 90) started recording data on July 7, 2009 and a new dataset for this rain gage was added to SEP11.WDM as DSN 190. The precipitation record for the period before those two gages were installed was copied from the Rolling Meadow (DSN 188; site 88) dataset into DSN 189 and DSN 190 starting July 1, 2008. Figure 1 shows the location of the Salt Creek watershed and data-collection sites in and near DuPage County, Illinois. The precipitation data processing for WY 2005–06 is different from that for WY 2007–11, as described in the next two sections.

Water Years 2005–06

For WY2005 and WY2006, any missing values of precipitation were not estimated during production of the annual WDR, and snow-affected data were left as they were recorded at the gage. This is different from the previous water year, 2004, and means that the WDM database did not contain estimated data for days with missing data and snow-affected data went into the WDM database. In WY2005 the Spring Creek (DSN 150; site 50) dataset was the only dataset filled with data from different gages (see table 1-1 in appendix 1). This gage lacks a back-up data logger, and transmission of this data was so poor that it was not included in the Water Data Report that year. The gages at Addison (DSN 128; site 28) and Westmont (DSN185; site 85) had missing data; the records were left as-is with the representative missing value (-99.9) for the missing periods. No other radio gages had missing data during WY2005.

As described in the earlier report (Murphy and Ishii, 2006) for both WY2005 and WY2006, unit value precipitation data from ADAPS were summed to hourly rainfall using a utility program called unitvaluesummation.exe. In WY2005, a new dataset for the new rain gage at Rolling Meadows (05530990; site 88) was added to the WDM as DSN 188. The Rolling Meadows gage record starts March 15, 2006, but the precipitation record for the period before the gage was installed was copied from the Schaumburg gage (DSN 170;

Table 1. Heated and unheated rain gages during Water Years 2005–11.

[Latitude and longitude given as: degrees (°) minutes (′) seconds (″); WWTF, wastewater-treatment facility ;Yes, heated; No, not heated; --, information not available; *, gage removed]

Site identifier (fig.1)	USGS station number	Location of gage, with Latitude, Longitude	Period of record in SEP11.WDM database (month/day/year)	2005	2006	2007	2008	2009	2010	2011
14	415356087575000	Elmhurst Quarry at Elmhurst, Ill. 41°53′56″, 87°57′50″	07/18/97–09/30/11	Yes	--	Yes	Yes	--	No	No
23	415651088051900	Bloomingdale Lift Station at Bloomingdale, Ill. 41°56′51″, 88°05′19″	10/01/00–09/30/11	Yes	--	Yes	Yes	--	No	No
28	415518087583000	Addison WWTF at Addison, Ill. 41°55′18″, 87°58′30″	07/18/97–09/30/11	No	--	No	No	--	No	No
29	415751087591000	Wood Dale WWTF at Wood Dale, Ill. 41°57′51″, 87°59′10″	07/01/97–09/30/11	Yes	--	Yes	Yes	--	No	Yes
45	420057088001700	Busse Woods at Elk Grove Village, Ill. 42°00′57″, 88°00′17″	07/18/97–09/30/11	No	--	No	*	--	--	--
50	415737088031100	Spring Creek Reservoir near Bloomingdale, Ill. 41°57′37″, 88°03′11″	07/18/97–09/30/11	No	--	*	No	--	No	No
64	415037087581700	Oak Brook Well at Oak Brook, Ill. 41°50′37″, 87°58′17″	07/18/97–09/30/11	Yes	--	Yes	Yes	--	No	Yes
70	420052088034200	Schaumburg Public Works at Schaumburg, Ill. 42°00′52″, 88°03′42″	07/18/97–09/30/11	Yes	--	Yes	Yes	--	No	Yes
85	414747087582700	Westmont Water Department at Westmont, Ill. 41°47′47″, 87°58′27″	10/01/00–09/30/11	No	--	No	No	--	No	--
86	05531410	Salt Creek at 22nd Street at Oak Brook, Ill. 41°50′50″, 87°56′12″	07/18/97–09/30/11	--	No	No	No	No	No	No
87	05531300	Salt Creek at Elmhurst, Ill. 41°53′10″, 87°57′33″	07/18/97–09/30/11	--	No	No	No	No	No	No
88	05530990	Salt Creek at Rolling Meadows, Ill. 41°47′47″, 87°58′27″	07/18/97–09/30/11	--	No	No	No	No	No	No
89	420453088043200	Harper College at Palatine, Ill. 41°47′47″, 87°58′27″	07/01/08–09/30/11	--	--	--	--	No	No	No
90	420745088025901	Sundling Jr. High School at Palatine, Ill. 42°07′45″, 88°02′59″	07/01/08–09/30/11	--	--	--	--	Yes	Yes	Yes

site 70) dataset into DSN 188 starting with July 18, 1997. In WY2006 the missing periods for the Spring Creek gage (DSN 150; site 50) dataset were filled with data from the Bloomingdale gage (DSN 123; site 23). No other gage had missing data.

Water Years 2007–11

Unit value precipitation data for water years 2007-11 were retrieved from the USGS Automated Data Processing System (ADAPS) (USGS, 2003) database and were used as the basis for ensuring the quality of the WDM database. ADAPS unit value data were processed into hourly values by using the Meteorologic and Hydrologic GenScn Input Converter (MAGIC) computer program (Ortel and Martin, 2010), and any missing (hourly) values of precipitation were filled with the corresponding data from a nearby network gage. The days in the annual WDR were identified as estimated with flag "e" based on precipitation (rain and snow) and air temperature (low and high) observation at O'Hare International Airport. A daily value was considered an estimate and assigned an "e" if 1) an observation station had snowfall, 2) an observation station had precipitation and the high for the day was less than 33°F, or 3) the observation station did not show snowfall or rainfall shortly after a snow event, but the USGS gage did (snow/ice eventually melted out of the funnel).

Other Meteorologic Data

The U.S. Department of Energy facility, ANL, is the main source of meteorologic data in the WDM database. The temperature, dewpoint temperature, wind speed, and solar radiation data were obtained from the ANL Web site (Argonne National Laboratory, 2012). Any missing data were estimated to provide a full and accurate data record in the WDM database. The data were quality controlled by ANL staff (Argonne National Laboratory, 2012). These data were then adjusted to account for different data-collection methods at the ANL

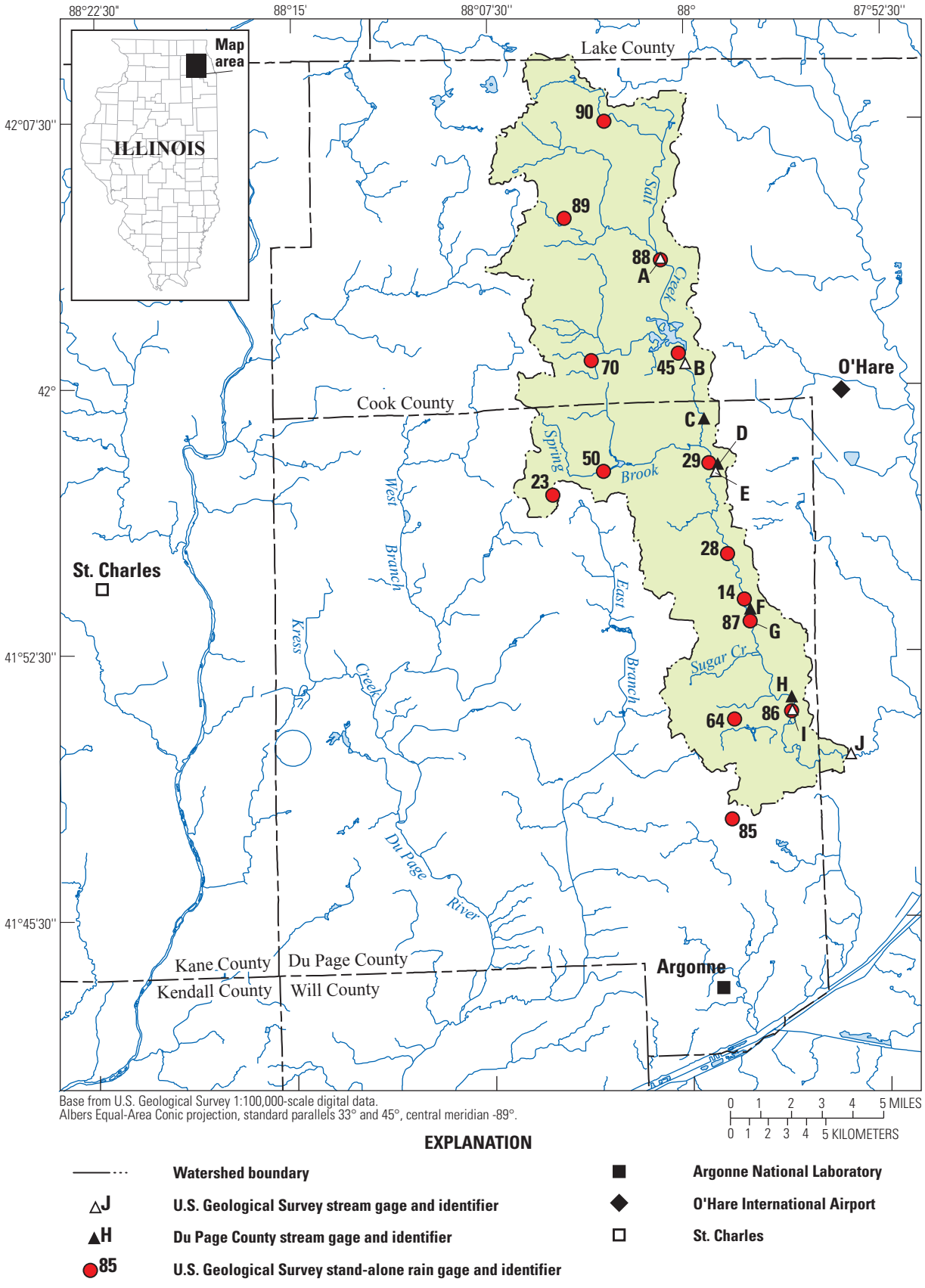

Figure 1. Location of the Salt Creek watershed and data-collection sites in and near DuPage County, Illinois.

station over the period of record, and missing values were estimated from adjusted data derived from the St. Charles, Ill, and O'Hare International Airport, Chicago, Ill meteorologic stations (Over and others, 2010) (fig.1). The adjustments were computed based on the regressions between the primary data series from ANL and the backup series from St. Charles, O'Hare, and Wheaton using data obtained during common periods. Each hourly meteorologic data value is assigned a corresponding data-source flag using a three-digit code in the form "xyz" (Over and others, 2010). These flags provide complete information regarding the origin and transformations of each hourly value in the database. In addition to the hourly meteorologic data the SEP11.WDM contains those data-source flags describing the meteorologic data.

Details of these regression equations and data-source flags are documented in Over and others, 2010. The regression equation for the solar radiation is changed on the basis of the regression analysis of the backup data series at St. Charles (STC) for WYs 2008–10. The new equation is

$$ANL\_DAT = 0.7449 * STC^{1.04} \text{ and } z = 3$$

where

ANL_DAT is the solar radiation at Argonne National Laboratory (ANL)

STC is the solar radiation at St. Charles used as backup

z portion of the data source flag identifying the transformation used to convert the backup series to the ANL_DAT database

The regression line corresponding to this new equation is shown in figure 2.

Hydrologic Data

In addition to the meteorologic data used as inputs to the Hydrologic Simulation Program-FORTRAN (HSPF) model, the WDM database contains discharge and water-surface elevation (stage) datasets, which are described in detail in Murphy and Ishii, 2006. These data are used for comparison with the simulated discharges and water-surface elevations generated by HSPF and FEQ, respectively. Hourly flow and stage data for WY2005 and WY2006 were retrieved from ADAPS in bcard format (USGS, 2003) and read into the WDM database using IOWDM (USGS, 2014). Hourly flow and stage data for WYs 2007–11 were retrieved from ADAPS using OUTWAT (USGS, 2003) in flat file format and processed by using MAGIC (Ortel and Martin, 2010). In the flat files, the missing data are identified as -123456E20. The MAGIC processing creates a file in hydhr format (Bicknell and others, 2000), which is written to the WDM database by using an

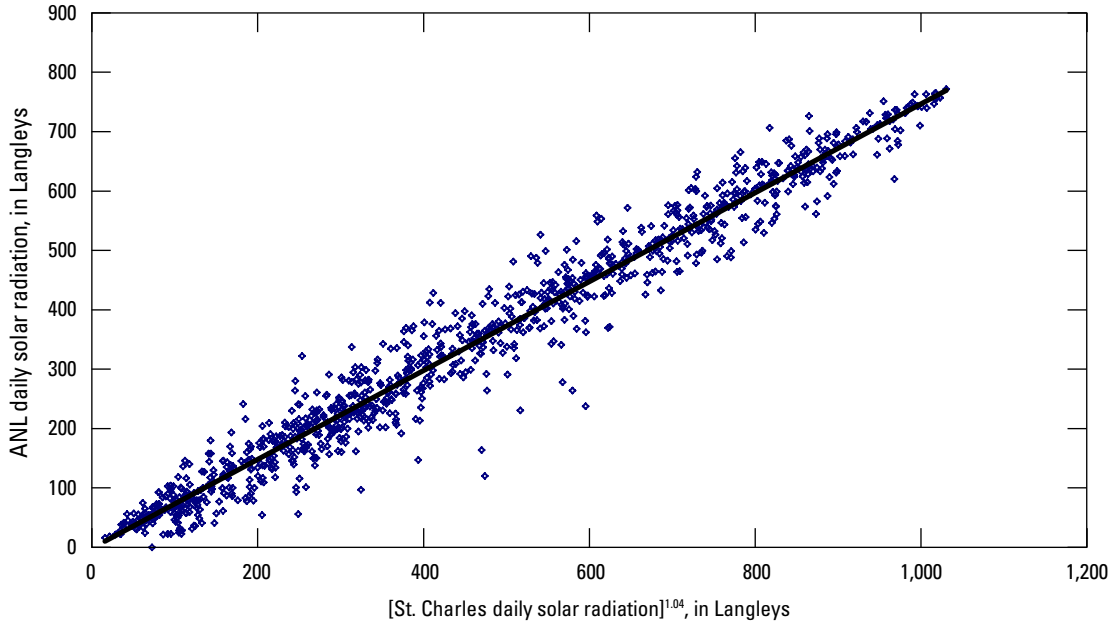

Figure 2. Regression relating daily solar radiation at St. Charles, Illinois, to solar radiation at Argonne National Laboratory (ANL), Illinois, water years 2008–10.

HSPF user control input (uci) file. Also the water-surface elevation data in ADAPS do not have the datum added, but the HSPF uci file is written such that the correct datum is added to the elevation data. The missing data and the estimated days are assigned a value of -99.9 in the WDM database. Appendix table 1-4 and table 1-5 describe the periods of missing and estimated data for stage and discharge, respectively.

Summary

The U.S. Geological Survey (USGS), in cooperation with DuPage County Stormwater Management Division, maintains a database of hourly meteorologic and hydrologic data for use in a near real-time streamflow simulation system, which assists in the management and operation of reservoirs and other flood-control structures in the Salt Creek watershed in DuPage County, Illinois. The precipitation data are from a watershed- and county-wide network of real-time tipping-bucket rain gages maintained by the USGS and DuPage County. Murphy and Ishii (2006) describe the location and type of gages in detail; however, the network has had some changes since that report. The northern boundary of the watershed delineation has been slightly expanded to represent improved topographic information. Two new rain gages were added in Cook County. The rain gage at Harper College at Palatine, Ill. (site 89), and the rain gage at Sundling Jr. High School at Palatine, Ill (site 90). The other meteorologic data (wind speed, solar radiation, air temperature, and dewpoint temperature) are from Argonne National Laboratory (ANL) located in Argonne, Ill. Potential evapotranspiration is computed from the meteorologic data according to the method described in Murphy (2005). The hydrologic data are from USGS stage and discharge gages. This database is updated annually with quality-assured/quality-controlled (QA/QC) data. A version of the database that contains QA/QC data for the period October 1, 2004, through September 30, 2011, SEP11.WDM, is described in this report. As a part of QA/QC process precipitation datasets were filled when data were missing. The missing data were filled with data from a nearby rain gage. Periods of snowfall were flagged using records from heated gages and air temperature observations at O'Hare International Airport.

The treatment of missing and snow-affected data in the precipitation datasets is discussed in detail in this report and the other meteorologic and hydrologic datasets are fully described in the annual USGS Water Data Reports (WDR). The regression equation for the solar radiation is changed on the basis of the regression analysis of the backup data series at St. Charles, Ill (STC) for WYs 2008–10. The non-precipitation meteorologic data (wind speed, solar radiation, air temperature, and dewpoint temperature) are collected at ANL, and the missing data are filled from meteorologic stations at St. Charles, Ill., and O'Hare International Airport, Chicago, Ill. In addition to the meteorologic data used as inputs to the Hydrological Simulation Program FORTRAN (HSPF) hydrologic model, the Watershed Data Management (WDM) database contains observed discharge and water-surface elevation (stage) datasets, which are described in detail in an earlier report (Murphy and Ishii, 2006).

Although this database was compiled for the Salt Creek watershed, the data could be used in other hydrologic models in northeastern Illinois or by scientists studying rainfall distribution or climate in the area.

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Appendix. Descriptions of missing and estimated data periods in the SEP11.WDM Watershed Data Management database

Table 1-1. Missing data periods for real-time network of rain gages in and near DuPage County, Illinois, water years 2005–11 in the SEP11.WDM Watershed Data Management database.

[For more details, consult corresponding annual U.S. Geological Survey (USGS) Water Data Report; DSN, dataset number; WWTF, wastewater treatment facility; site numbers correspond to figure 1; Do., ditto]

Station with missing data (site number)	
Station used to fill in missing data (site number)	**Missing period (month/day/year)**
Salt Creek at Rolling Meadows, Ill. (Site 88; DSN 188)	
Busse Woods at Elk Grove Village, Ill. (Site 45; DSN 145)	10/01/05-03/15/06
Do.	10/14/06-11/30/06
Do.	04/17/07
Do.	09/19/07-09/20/07
Schaumburg Public Works at Schaumburg, Ill. (Site 70; DSN 170)	10/27/07-10/31/07
Do.	02/05/08-03/02/08;
Do.	08/11/10-08/19/10
Salt Creek at 22nd Street in Oak Brook, Ill. (Site 86; DSN 186)	
Oak Brook Well at Oak Brook, Ill. (Site 64; DSN 164)	12/01/06-12/04/06
Do.	11/30/08-02/12/09
Do.	10/30/09-11/12/09
Do.	04/06/10-04/09/10
Do.	07/25/10
Do.	09/28/09-10/14/10
Do.	12/10/10-12/26/10
Oak Brook Well at Oak Brook, Ill. (Site 64; DSN 164)	
Salt Creek at 22nd Street at Oak Brook, Ill. (Site 86; DSN 186)	11/05/10-12/07/10;
Do.	03/29/11-08/18/11
Westmont Water Department at Westmont, Ill. (Site 85; DSN 185)	
Not filled (left as missing data)	02/10/05-02/12/05
Do.	02/16/05-02/19/05
Do.	02/21/05-02/26/05
Do.	03/01/05-03/03/05
Do.	03/05/05-03/06/05
Do.	03/08/05-03/16/05
Do.	03/20/05-03/22/05
Do.	03/27/05-03/29/05
Do.	03/31/05
Do.	04/03/05-04/06/05
Do.	04/08/05-04/11/05
Do.	04/13/05
Do.	06/23/05-06/29/05
Do.	07/01/05-07/03/05
Do.	07/05/05-07/11/05
Do.	07/13/05-07/19/05
Do.	07/21/05-07/22/05
Do.	07/24/05
Do.	07/27/05-08/09/05
Do.	08/12/05-08/17/05
Do.	08/19/05
Do.	08/21/05-09/13/05
Do.	09/16/05-09/18/05
Do.	09/20/05-09/21/05

Table 1-1. Missing data periods for real-time network of rain gages in and near DuPage County, Illinois, water years 2005–11 in the SEP11.WDM Watershed Data Management database.—Continued

[For more details, consult corresponding annual U.S. Geological Survey (USGS) Water Data Report; DSN, dataset number; WWTF, wastewater treatment facility; site numbers correspond to figure 1; Do., ditto]

Station with missing data (site number)	
Station used to fill in missing data (site number)	**Missing period (month/day/year)**
Westmont Water Department at Westmont, Ill. (Site 85; DSN 185)—Continued	
Do.	09/23/05
Do.	09/25/05
Do.	09/27/05
Do.	09/29/05-09/30/05
Oak Brook Well at Oak Brook, Ill. (Site 64; DSN 164)	01/23/07-02/28/07
Do.	10/30/07-11/10/07
Do.	07/10/08-08/12/08
Do.	12/10/09-12/16/09
Do.	12/29/09-01/06/10
Do.	01/09/10-01/11/10
Do.	01/13/10-01/15/10
Do.	01/17/10
Do.	01/19/10-01/20/10
Do.	01/29/10
Do.	01/31/10
Do.	04/14/10-09/30/10
Schaumburg Public Works at Schaumburg, Ill. (Site 70; DSN 170)	
Busse Woods at Elk Grove Village, Ill. (Site 45; DSN 145)	11/07/06-03/13/07
Bloomingdale Lift Station at Bloomingdale, Ill. (Site 23; DSN 123)	03/14/07-03/21/07
Busse Woods at Elk Grove Village, Ill. (Site 45; DSN 145)	03/22/07-05/09/07
Bloomingdale Lift Station at Bloomingdale, Ill. (Site 23; DSN 123)	05/10/07-05/20/07
Busse Woods at Elk Grove Village, Ill. (Site 45; DSN 145)	05/21/07
Bloomingdale Lift Station at Bloomingdale, Ill. (Site 23; DSN 123)	05/22/07-05/24/07
Busse Woods at Elk Grove Village, Ill. (Site 45; DSN 145)	05/25/07-05/27/07
Bloomingdale Lift Station at Bloomingdale, Ill. (Site 23; DSN 123)	05/28/07-09/30/07
Spring Creek Reservoir near Bloomingdale, Ill. (Site 50; DSN 150)	10/01/07-10/03/07
Salt Creek at Rolling Meadows (Site 88; DSN 188)	01/01/11-03/30/11
Do.	08/19/11-09/29/11
Spring Creek Reservoir near Bloomingdale, Ill. (Site 50; DSN 150)	
Bloomingdale Lift Station at Bloomingdale, Ill. (Site 23; DSN 123)	10/01/04-05/17/05
Do.	07/12/05
Do.	07/14/05-07/18/05
Do.	07/211/05-07/22/05
Do.	07/24/05
Do.	07/26/05-08/02/05
Do.	08/04/05-08/10/05
Do.	08/13/05-09/30/05
Do.	10/01/05-10/01/07
Do.	12/03/07-01/15/08
Do.	12/24/09-12/25/09
Wood Dale WWTF at Wood Dale, Ill. (Site 29; DSN 129)	08/18/11-09/09/11
Busse Woods at Elk Grove Village, Ill. (Site 45; DSN 145)	
Wood Dale WWTF at Wood Dale, Ill. (Site 29; DSN 129)	03/14/07-03/21/07
Do.	05/10/07-05/20/07
Do.	05/22/07-05/24/07
Do.	05/28/07-09/30/07

Table 1-1. Missing data periods for real-time network of rain gages in and near DuPage County, Illinois, water years 2005–11 in the SEP11.WDM Watershed Data Management database.—Continued

[For more details, consult corresponding annual U.S. Geological Survey (USGS) Water Data Report; DSN, dataset number; WWTF, wastewater treatment facility; site numbers correspond to figure 1; Do., ditto]

Station with missing data (site number)	
Station used to fill in missing data (site number)	**Missing period (month/day/year)**
Wood Dale WWTF at Wood Dale, Ill. (Site 29; DSN 129)	
Addison WWTF at Addison, Ill. (Site 28; DSN 128)	01/09/06-01/27/06
Do.	01/31/06-02/01/06
Busse Woods at Elk Grove Village, Ill. (Site 45; DSN 145)	02/02/06-02/04/06
Addison WWTF at Addison, Ill. (Site 28; DSN 128)	02/05/06-03/02/06
Do.	11/14/07-01/16/08
Spring Creek Reservoir near Bloomingdale, Ill. (Site 50; DSN 150)	10/13/10-03/30/11
Addison WWTF at Addison, Ill. (Site 28; DSN 128)	
Not Filled (left as missing data)	08/15/05-09/30/05
Elmhurst Quarry at Elmhurst, Ill. (Site 14; DSN 114)	02/02/06-02/04/06
Do.	05/12/06-06/15/06
Do.	08/23/06-09/17/06
Do.	02/12/07-02/14/07
Do.	08/05/07
Do.	01/06/08-02/03/08
Elmhurst Quarry at Elmhurst, Ill. (Site 14; DSN 114)	05/16/11-06/20/11
Bloomingdale Lift Station at Bloomingdale, Ill. (Site 23; DSN 123)	
Spring Creek Reservoir near Bloomingdale, Ill. (Site 50; DSN 150)	06/08/08-07/18/08
Do.	09/30/08
Do.	04/26/09-05/31/09
Do.	06/20/09-07/06/09
Do.	05/06/10-07/28/10
Spring Creek Reservoir near Bloomingdale, Ill. (Site 50; DSN 150)	10/27/10-12/01/10
Do.	01/01/11-03/29/11
Wood Dale WWTF at Wood Dale, Ill. (Site 29; DSN 129)	08/18/11-09/30/11
Elmhurst Quarry at Elmhurst, Ill. (Site 14; DSN 114)	
Addison WWTF at Addison, Ill. (Site 28; DSN 128)	06/07/09-06/24/09
Salt Creek at Elmhurst, Ill. (Site 87; DSN 187)	07/24/10-07/28/10
Addison WWTF at Addison, Ill. (Site 28; DSN 128)	07/23/11-08/18/11
Harper College at Palatine, Ill. (Site 89; DSN 189)	
Salt Creek at Rolling Meadows (Site 88; DSN 188)	07/01/08-07/15/08
Do.	03/20/09-07/06/09
Do.	02/26/10-04/13/10
Sundling Jr. HS at Palatine, Ill. (Site 90; DSN 190)	
Salt Creek at Rolling Meadows (Site 88; DSN 188)	07/01/08-07/07/09
Do.	03/14/10-04/13/10
Harper College at Palatine, Ill. (Site 89; DSN 189)	03/30/11-09/15/11

Table 1-2. Snowfall-affected periods, water years 2005–11, for the real-time network of rain gages in and near DuPage County, Illinois, in the SEP11.WDM Watershed Data Management database.

[WWTF, wastewater treatment facility; DSN, dataset number; USGS, U.S. Geological Survey; site number corresponds to figure 1]

Snow-affected periods (month/day/year) for Addison WWTF at Addison, Ill. (Site 28; DSN 128)			
11/25/04-11/26/04	01/14/07-01/15/07	12/01/08-12/03/08	12/3/10-12/6/10
11/29/04	01/26/07	12/08/08	12/9/10-12/13/10
12/01/04-12/02/04	02/19/07	12/11/08	12/16/10
01/09/05-01/11/05	02/25/07-02/26/07	12/13/08	12/20/210-12/22/10
01/13/05	03/09/07	12/24/08	12/24/10-12/27/10
01/19/05	03/15/07	01/31/09	12/29/10-12/30/10
01/23/05-01/26/05	12/04/07-12/05/07	02/24/09	01/01/11
02/20/05	12/07/07	03/29/09	01/05/11-01/08/11
02/22/05	12/09/07-12/10/07	11/25/09-11/27/09	01/11/11-01/20/11
02/28/05	12/18/07	12/03/09-12/10/09	01/22/11-01/31/11
03/10/05	12/29/07	12/12/09-12/13/09	02/01/11-02/02/11
03/12/05	12/31/07-01/02/08	12/17/09-01/18/10	02/06/11-02/08/11
03/17/05	02/04/08	01/20/10-01/21/10	02/11/11-02/12/11
03/23/05	02/07/08-02/08/08	01/24/10-02/11/10	02/19/11-02/28/11
03/25/05	02/12/08-02/13/08	02/15/10-02/16/10	03/05/11
02/01/06	02/20/08	02/19/10-03/03/10	03/10/11
11/30/06	02/22/08	03/19/10-03/21/10	03/23/11-03/25/11
12/06/06	02/26/08-02/27/08	04/08/10-04/09/10	04/16/11
12/09/06-12/10/06	02/29/08	11/24/10	04/18/11
12/20/06	03/21/08-03/22/08	11/30/10	
01/06/07-01/07/07	03/28/08	12/01/10	
Snow-affected periods (month/day/year) for Bloomingdale Lift Station at Bloomingdale, Ill. (Site 23; DSN 123)			
11/24/04-11/26/04	03/23/05	03/09/07	02/19/10-02/27/10
11/29/04	03/25/05	11/25/09-11/26/09	03/19/10
12/01/04	10/12/06	12/03/09-12/04/09	03/21/10
12/18/04	11/30/06-12/01/06	12/06/09-12/10/09	12/03/10-12/06/10
01/05/05-01/11/05	12/06/06	12/18/09-12/28/09	12/09/10-12/13/10
01/13/05	12/10/06	12/30/09-12/31/09	12/16/10
01/19/05	12/20/06	01/06/10-01/08/10	12/20/10-12/22/10
01/23/05-01/24/05	01/06/07-01/07/07	01/10/10-01/12/10	12/24/10-12/26/10
01/27/05	01/14/07-01/15/07	01/15/10-01/18/10	12/29/10
02/20/05	01/21/07-01/22/07	01/20/10-01/21/10	04/16/11
02/28/05	02/06/07	01/25/10-02/03/10	04/18/11
03/10/05	02/13/07	02/05/10-02/10/10	
03/17/05	02/24/07-02/25/07	02/15/10-02/16/10	
Snow-affected periods (month/day/year) for Busse Woods at Elk Grove Village, Ill. (Site 45; DSN 145)			
11/24/04-11/26/04	02/11/05	10/12/06	02/01/07
11/29/04	02/20/05	10/24/06	02/09/07-02/10/07
12/01/04	02/22/05	11/30/06	02/12/07
12/18/04	02/28/05	12/02/06	02/14/07
01/10/05-01/11/05	03/01/05	12/06/06	02/17/07
01/13/05	03/03/05	12/20/06	02/25/07-02/26/07
01/19/05	03/10/05-03/12/05	01/06/07-01/07/07	02/28/07
01/21/05	03/17/05	01/14/07-01/17/07	03/02/07-03/04/07
01/23/05-01/24/05	03/23/05	01/19/07	03/07/07
01/27/05	03/25/05	01/22/07	03/09/07

Table 1-2. Snowfall-affected periods, water years 2005–11, for the real-time network of rain gages in and near DuPage County, Illinois, in the SEP11.WDM Watershed Data Management database.—Continued

[WWTF, wastewater treatment facility; DSN, dataset number; USGS, U.S. Geological Survey; site number corresponds to figure 1]

Snow-affected periods (month/day/year) for Elmhurst Quarry at Elmhurst, Ill. (Site 14; DSN 114)			
11/24/04-11/26/04	03/10/05	03/19/10-03/21/10	01/05/11-01/08/11
11/29/04	03/17/05	04/08/10-04/09/10	01/11/11-01/20/11
12/01/04	03/23/05	11/24/10	01/22/11-02/02/11
01/04/05	03/25/05	11/30/10	02/06/11-02/08/11
01/06/05-01/09/05	11/25/09-11/27/09	12/01/10	02/11/11-02/12/11
01/11/05	12/03/09-12/10/09	12/03/10-12/06/10	02/20/11-02/23/11
01/13/05	12/12/09-12/13/09	12/09/10	02/25/11-02/28/11
01/19/05	12/17/09-01/18/10	12/11/10-12/13/10	03/05/11
01/24/05-01/25/05	01/20/10-01/21/10	12/16/10	03/10/11
01/27/05	01/24/10-02/11/10	12/20/10-12/22/10	03/23/11-03/25/11
02/20/05	02/15/10-02/16/10	12/24/10-12/26/10	04/16/11
02/28/05	02/19/10-03/03/10	01/01/11	04/18/11
Snow-affected periods (month/day/year) for Oak Brook Well at Oak Brook, Ill. (Site 64; DSN 164)			
11/24/04-11/26/04	03/25/05	11/25/09-11/27/09	12/16/10
11/29/04	11/30/06-12/02/06	12/03/09-12/10/09	12/20/10-12/22/10
01/04/05-01/06/05	12/06/06	12/12/09-12/13/09	12/24/10-12/26/10
01/08/05-01/09/05	12/10/06	12/17/09-01/02/10	01/01/11
01/11/05	12/20/06	01/04/10-01/09/10	01/05/11-01/08/11
01/13/05	01/06/07-01/07/07	01/11/10-01/12/10	01/11/11-01/20/11
01/18/05-01/19/05	01/14/07-01/15/07	01/14/10-01/18/10	01/22/11-02/02/11
01/21/05-01/23/05	01/21/07	01/20/10-01/21/10	02/06/11-02/08/11
01/25/05	02/06/07	01/24/10-02/11/10	02/11/11-02/12/11
02/20/05	02/12/07-02/14/07	02/15/10-02/16/10	02/20/11-02/23/11
02/22/05	02/17/07	02/19/10-03/03/10	02/25/11-02/28/11
02/28/05	02/25/07-02/26/07	03/19/10-03/21/10	03/05/11
03/10/05	03/02/07	04/08/10-04/09/10	03/10/11
03/23/05	03/09/07	12/09/10-12/13/10	03/23/11-03/25/11
Snow-affected periods (month/day/year) for Schaumburg Public Works at Schaumburg, Ill. (Site 70; DSN 170)			
11/24/04	02/28/05-03/01/05	01/24/10-02/02/10	12/09/10
11/26/04	03/10/05-03/11/05	02/04/10-02/10/10	12/11/10-12/13/10
11/29/04	03/17/05	02/14/10-02/16/10	12/16/10
12/18/04	03/25/05	02/19/10-02/28/10	12/20/10-12/22/10
01/06/05	10/15/09-10/16/09	03/19/10-03/21/10	12/24/10-12/26/10
01/11/05	11/25/09-11/26/09	04/07/10-04/08/10	04/16/11
01/13/05	12/02/09-12/10/09	11/24/10	04/18/11
01/18/05-01/19/05	12/17/09-12/27/09	11/30/10	
01/24/05	12/29/09-01/12/10	12/01/10	
02/20/05	01/14/10-01/20/10	12/03/10-12/06/10	

Table 1-2. Snowfall-affected periods, water years 2005–11, for the real-time network of rain gages in and near DuPage County, Illinois, in the SEP11.WDM Watershed Data Management database.—Continued

[WWTF, wastewater treatment facility; DSN, dataset number; USGS, U.S. Geological Survey; site number corresponds to figure 1]

Snow-affected periods (month/day/year) for Spring Creek Reservoir near Bloomingdale, Ill. (Site 50; DSN 150)			
11/21/07-11/22/07	12/15/08	12/26/09-12/31/09	12/20/10-12/22/10
12/01/07	12/20/08	01/06/10-01/08/10	12/24/10-12/26/10
01/17/08-01/26/08	12/24/08	01/10/10-01/12/10	12/29/10
01/29/08-02/03/08	12/28/08	01/15/10-01/18/10	01/01/11
02/05/08-02/15/08	01/06/09	01/25/10-02/03/10	01/05/11-01/08/11
02/18/08-02/22/08	01/22/09	02/05/10-02/10/10	01/11/11-01/20/11
02/25/08-02/29/08	02/14/09	02/12/10-02/13/10	01/22/11-02/02/11
03/04/08	02/18/09	02/15/10-02/16/10	02/06/11-02/08/11
03/06/08-03/10/08	02/21/09-02/22/09	02/19/10-02/27/10	02/11/11-02/12/11
03/21/08-03/22/08	03/29/09	03/19/10-03/21/10	02/20/11-02/28/11
03/27/08	04/05/09	11/24/10	03/05/11
11/24/08	11/25/09-11/26/09	11/30/10-12/01/10	03/10/11
11/30/08	12/03/09-12/04/09	12/03/10-12/06/10	03/23/11-03/25/11
12/03/08	12/06/09-12/10/09	12/09/10-12/13/10	04/16/11
12/09/08-12/10/08	12/18/09-12/23/09	12/16/10	04/18/11
Snow-affected periods (month/day/year) for Westmont Water Department at Westmont, Ill. (Site 85; DSN 185)			
11/24/04-11/26/04	01/06/07-01/07/07	01/31/08-02/03/08	03/29/09
11/29/04	01/14/07-01/15/07	02/06/08-02/08/08	04/05/09-04/06/09
12/01/04	01/20/07	02/11/08-02/12/08	12/03/09-12/09/09
12/18/04	03/09/07	02/18/08-02/21/08	12/17/09-12/28/09
01/09/05	12/01/07	02/25/08-02/29/08	01/07/10-01/08/10
01/11/05	12/04/07-12/10/07	03/07/08-03/08/08	01/12/10
01/13/05	12/15/07-12/17/07	03/10/08	01/25/10-01/28/10
01/23/05	12/23/07-12/24/07	03/21/08-03/22/08	01/30/10
01/27/05	12/28/07	03/27/08	02/01/10-02/03/10
01/29/05	12/30/07-01/02/08	11/30/08	02/05/10-02/06/10
10/12/06	01/14/08-01/15/08	12/03/08	02/08/10-02/11/10
11/30/06	01/17/08-01/18/08	12/09/08-12/10/08	02/15/10-02/16/10
12/02/06	01/21/08-01/23/08	12/18/08	02/19/10-02/27/10
12/06/06	01/25/08	02/14/09	03/19/10-03/21/10
12/20/06	01/29/08	02/18/09	
Snow-affected periods (month/day/year) for Wood Dale WWTF at Wood Dale, Ill. (Site 29; DSN 129)			
11/24/04-11/26/04	03/10/05-03/11/05	01/21/07	01/24/10-02/02/10
11/29/04	03/17/05	02/06/07	02/04/10-02/10/10
12/01/04	03/23/05	02/12/07-02/14/07	02/14/10-02/16/10
12/18/04	03/25/05	02/17/07	02/19/10-02/28/10
01/06/05-01/08/05	10/12/06	02/24/07-02/25/07	03/19/10-03/21/10
01/11/05	11/30/06-12/02/06	03/09/07	04/07/10-04/08/10
01/13/05	12/06/06	11/25/09-11/26/09	04/16/11
01/18/05-01/24/05	12/10/06	12/02/09-12/10/09	04/18/11
01/27/05	12/20/06	12/17/09-12/27/09	
02/20/05	01/06/07-01/07/07	12/29/09-01/12/10	
02/28/05	01/14/07-01/15/07	01/14/10-01/20/10	

Table 1-2. Snowfall-affected periods, water years 2005–11, for the real-time network of rain gages in and near DuPage County, Illinois, in the SEP11.WDM Watershed Data Management database.—Continued

[WWTF, wastewater treatment facility; DSN, dataset number; USGS, U.S. Geological Survey; site number corresponds to figure 1]

Snow-affected periods (month/day/year) for Harper College at Palatine, Ill. (Site 89; DSN 189)			
10/26/08-10/27/08	01/17/09-01/18/09	01/03/10-01/08/10	12/11/10-12/13/10
11/07/08-11/11/08	01/20/09	01/10/10-01/12/10	12/16/10
11/15/08-11/17/08	01/27/09-01/29/09	01/15/10	12/20/10-12/22/10
11/20/08	02/03/09	01/17/10-01/18/10	12/24/10-12/26/10
11/24/08	02/13/09-02/15/09	01/20/10	01/01/11
11/30/08-12/07/08	02/17/09-02/19/09	01/25/10-01/27/10	01/05/11-01/08/11
12/09/08	02/21/09-02/22/09	01/29/10-01/30/10	01/11/11-01/20/11
12/13/08	02/27/09-03/03/09	02/01/10-02/02/10	01/22/11-02/02/11
12/15/08-12/21/08	03/11/09	02/05/10-02/11/10	02/06/11-02/08/11
12/23/08-12/24/08	10/16/09	02/15/10-02/16/10	02/11/11-02/12/11
12/26/08	11/26/09	02/20/10-02/25/10	02/20/11-02/28/11
12/28/08	12/03/09-12/05/09	11/24/10	03/05/11
12/30/08-12/31/08	12/07/09-12/10/09	11/30/10-12/01/10	03/10/11
01/03/09-01/04/09	12/18/09-12/27/09	12/03/10-12/06/10	03/23/11-03/25/11
01/06/09-01/14/09	12/30/09-01/01/10	12/09/10	
Snow-affected periods (month/day/year) for Sundling Jr. HS at Palatine, Ill. (Site 90; DSN 190)			
11/25/09-11/26/09	01/20/10-02/03/10	12/16/10	02/11/11-02/12/11
12/03/09-12/10/09	02/05/10-02/12/10	12/20/10-12/22/10	02/20/11-02/23/11
12/12/09-12/14/09	02/15/10-02/16/10	12/24/10-12/26/10	02/25/11-02/28/11
12/17/09-12/28/09	02/19/10-03/01/10	01/01/11	03/05/11
12/30/09-01/02/10	11/24/10	01/05/11-01/08/11	03/10/11
01/06/10-01/08/10	11/30/10-12/01/10	01/11/11-01/20/11	03/23/11-03/25/11
01/10/10-01/12/10	12/03/10-12/06/10	01/22/11-02/02/11	
01/14/10-01/18/10	12/09/10-12/13/10	02/05/11-02/08/11	
Snow-affected periods (month/day/year) for Salt Creek at Rolling Meadows, Ill. (Site 88; DSN 188)			
12/01/06-12/07/06	02/11/08-02/14/08	02/03/09	11/24/10
01/15/07-01/22/07	02/16/08-02/22/08	02/13/09-02/15/09	11/30/10
01/27/07-01/29/07	02/25/08-02/26/08	02/17/09-02/19/09	12/01/10
02/06/07	02/28/08-02/29/08	02/21/09-02/23/09	12/03/10-12/06/10
02/09/07	03/03/08	02/27/09-03/03/09	12/09/10-12/13/10
02/11/07-02/14/07	03/06/08-03/10/08	03/11/09	12/16/10
02/17/07	03/17/08	03/28/09-03/29/09	12/20/10-12/22/10
02/24/07-03/03/07	03/21/08-03/22/08	04/05/09-04/06/09	12/24/10-12/26/10
03/06/07-03/07/07	03/27/08-03/28/08	10/16/09	12/29/10
11/21/07-11/22/07	10/26/08-10/27/08	11/26/09	12/31/10
12/01/07-12/02/07	11/07/08-11/10/08	12/03/09-12/10/09	01/01/11
12/04/07-12/12/07	11/15/08-11/17/08	12/12/09-12/13/09	01/05/11-01/08/11
12/15/07-12/17/07	11/20/08	12/19/09-12/26/09	01/11/11-01/20/11
12/23/07-12/24/07	11/24/08	12/28/09-01/01/10	01/22/11-01/31/11
12/28/07	11/30/08-12/10/08	01/03/10-01/12/10	02/01/11-02/02/11
12/30/07-01/04/08	12/13/08	01/15/10	02/06/11-02/08/11
01/08/08	12/15/08-12/21/08	01/17/10-01/18/10	02/11/11-02/12/11
01/10/08	12/23/08-12/24/08	01/20/10	02/20/11-02/28/11
01/11/08	12/26/08	01/24/10-01/27/10	03/05/11
01/13/08-01/15/08	12/28/08	01/29/10-01/30/10	03/10/11
01/17/08-01/19/08	12/30/08-12/31/08	02/01/10-02/02/10	03/23/11-03/25/11
01/21/08-01/23/08	01/06/09-01/14/09	02/05/10-02/12/10	04/16/11
01/25/08-01/29/08	01/17/09-01/18/09	02/15/10-02/16/10	04/18/11
01/31/08-02/04/08	01/20/09-01/22/09	02/20/10-02/28/10	
02/07/08-02/09/08	01/27/09-01/29/09	03/20/10-03/21/10	

Table 1-2. Snowfall-affected periods, water years 2005–11, for the real-time network of rain gages in and near DuPage County, Illinois, in the SEP11.WDM Watershed Data Management database.—Continued

[WWTF, wastewater treatment facility; DSN, dataset number; USGS, U.S. Geological Survey; site number corresponds to figure 1]

Snow-affected periods (month/day/year) for Salt Creek at Elmhurst, Ill. (Site 87; DSN 187)			
11/30/06	01/14/08	02/06/09	11/24/10
12/01/06	01/17/08-01/18/08	02/09/09	11/30/10
12/03/06	01/21/08-01/23/08	02/14/09	12/01/10
12/05/06-12/06/06	01/25/08-01/29/08	02/19/09	12/03/10-12/06/10
01/15/07-01/22/07	01/31/08-02/15/08	02/21/09-02/24/09	12/09/10-12/13/10
01/24/07-01/29/07	02/18/08-02/20/08	03/30/09	12/16/10
02/06/07	02/25/08-02/26/08	04/06/09	12/20/10-12/22/10
02/12/07-02/14/07	02/28/08-02/29/08	12/07/09-12/14/09	12/24/10-12/26/10
02/17/07	03/06/08-03/10/08	12/18/09-12/19/09	12/29/10-12/31/10
02/19/07	03/21/08-03/23/08	12/21/09-12/22/09	01/01/11
02/24/07-02/28/07	03/27/08-03/28/08	12/26/09-12/27/09	01/05/11-01/08/11
03/02/07-03/03/07	11/17/08	12/31/09	01/11/11-01/12/11
03/06/07-03/10/07	11/24/08	01/06/10-01/08/10	01/14/11-01/20/11
03/12/07	11/30/08-12/01/08	01/14/10	01/22/11-02/02/11
11/21/07-11/22/07	12/03/08	01/20/10-01/21/10	02/06/11-02/08/11
12/01/07-12/02/07	12/06/08-12/11/08	01/25/10-01/28/10	02/11/11-02/12/11
12/04/07-12/06/07	12/13/08-12/14/08	02/01/10-02/03/10	02/20/11-02/28/11
12/08/07-12/09/07	12/17/08	02/05/10-02/06/10	03/05/11
12/15/07-12/16/07	12/19/08-12/22/08	02/08/10-02/10/10	03/10/11
12/18/07-12/20/07	12/24/08-12/27/08	02/12/10-02/13/10	03/23/11-03/25/11
12/23/07	01/07/09-01/15/09	02/15/10-02/16/10	04/16/11
12/28/07	01/18/09-01/19/09	02/19/10-02/25/10	04/18/11
12/30/07-01/01/08	01/29/09	02/28/10-03/01/10	
01/04/08-01/05/08	01/31/09-02/01/09	03/03/10	
Snow-affected periods (month/day/year) for Salt Creek at 22nd Street at Oak Brook, Ill. (Site 86; DSN 186)			
12/06/06	01/05/08	02/17/09	11/24/10
12/10/06	01/14/08	02/19/09	11/30/10
01/14/07-01/19/07	01/17/08-01/18/08	02/21/09-02/22/09	12/01/10
01/21/07-01/22/07	01/21/08-01/23/08	02/24/09	12/03/10-12/06/10
01/24/07-01/26/07	01/25/08-01/26/08	03/30/09	12/09/10
01/28/07-02/03/07	01/29/08	04/06/09	12/29/10-12/30/10
02/06/07	01/31/08	12/07/09-12/14/09	01/01/11
02/11/07-02/14/07	01/31/08-02/06/08	12/18/09-12/22/09	01/05/11-01/08/11
02/16/07-02/17/07	02/08/08-02/09/08	12/26/09-12/27/09	01/11/11-01/31/11
02/19/07	02/11/08-02/14/08	01/06/10-01/08/10	02/01/11-02/03/11
02/24/07-03/03/07	02/17/08-02/20/08	01/13/10-01/14/10	02/06/11-02/08/11
03/06/07-03/09/07	02/25/08-02/26/08	01/21/10-01/22/10	02/10/11-02/13/11
11/21/07-11/22/07	02/28/08-02/29/08	01/25/10-01/26/10	02/20/11-02/28/11
12/01/07-12/02/07	03/06/08-03/10/08	02/01/10-02/03/10	03/05/11
12/04/07-12/09/07	03/21/08-03/23/08	02/05/10-02/06/10	03/10/11-03/11/11
12/15/07-12/18/07	03/27/08-03/28/08	02/08/10-02/12/10	03/23/11-03/25/11
12/23/07	11/17/08	02/15/10-02/16/10	04/16/11-04/18/11
12/28/07	11/24/08	02/19/10-02/25/10	
12/30/07-01/01/08	02/14/09	02/27/10-02/28/10	

Table 1-3. Descriptions of estimated days with flag "e" and missing days in Salt Creek stage data, water years 2005–11, in the SEP11. WDM Watershed Data Management for U.S. Geological Survey database.

[For more details, consult corresponding U.S. Geological Survey (USGS) annual Water Data Report; DSN, dataset number; hr., hour; WWTF, wastewater-treatment facility; streamgage identifiers correspond to figure 1]

Station number (site number)	Missing period (month/day/year)	Estimated period (month/day/year)
Salt Creek at Rolling Meadows, Ill. (USGS streamgage A; DSN 4900)	03/21/07 hr.16-03/23/07 hr.9; 04/16/07 hr.18-04/18/07 hr.5; 09/18/07 hr.17-09/21/07 hr.6; 10/27/07 hr.20-10/30/07 hr.10; 02/05/08-02/06/08; 08/26/08	None
Salt Creek near Elk Grove Village, Ill. (USGS streamgage B; DSN 4800)	05/27/06 hr.15-06/01/06 hr.15; 02/18/07 hr.17-02/22/07 hr.12; 06/14/07 hr.23-06/19/07 hr.10; 09/18/07 hr.7-09/30/07 hr.23; 10/01/07 hr.0-11/13/07 hr.23; 12/23/07 hr.5-12/27/07 hr.13; 08/13/08 hr.23-08/31/08 hr.23; 10/01/08 hr.0-11/02/08 hr.9; 11/12/08 hr.23-11/14/08 hr.22; 12/14/08 hr.0-12/15/08 hr.23; 12/20/08 hr.0-12/20/08 hr.23; 12/24/08 hr.0-12/25/08 hr.23; 12/28/08 hr.0-12/31/08 hr.23; 01/21/09 hr. 0-01/22/09 hr.23; 05/31/09 hr. 0-06/16/09 hr.23; 06/20/09 hr. 0-07/06/09 hr.23	None
Salt Creek at Wood Dale, Ill. (USGS streamgage E; DSN 4600)	12/18/04; 12/22/04-12/23/04; 01/02/06 hr.23-01/04/06 hr.9; 05/12/06 hr.21-05/18/06 hr.8; 08/09/08 hr.10-08/26/08 hr.6; 07/06/11-07/07/11; 08/05/11-08/09/11	None
Salt Creek at Elmhurst, Ill. (USGS streamgage G; DSN 4500)	01/25/08; 01/27/08; 01/29/08 hr.19-02/04/08 hr.12; 05/21/09 hr.21-05/27/09 hr.8	12/18/04; 12/22/04-12/23/04; 12/25/04-12/06/04; 01/24/08
Salt Creek at 22nd Street at Oak Brook, Ill. (USGS streamgage I; DSN 4200)	10/30/06-10/31/06; 11/30/06 hr.9-12/04/06 hr.10; 02/17/08-02/19/08; 06/04/08; 12/31/08; 07/24/10-07/26/10; 08/09/10-08/10/10; 08/27/10-08/31/10; 09/07/10-09/16/10; 09/28/10-09/30/10; 10/13/10	None
Salt Creek at Western Springs, Ill. (USGS streamgage J; DSN 4100)	12/28/09-12/30/09; 06/22/11-07/12/11; 08/27/11-08/31/11	07/18/05; 07/20/05-07/21/05

Table 1-4. Descriptions of estimated days with flag "e" and missing days in Salt Creek discharge data, water years 2005–11, in the SEP11.WDM Watershed Data Management for U.S. Geological Survey database.

[For more details, consult corresponding U.S. Geological Survey (USGS) annual Water Data Report; DSN, dataset number; WWTF, wastewater-treatment facility; streamgage identifiers correspond to figure 1]

Station number (site number)	Missing period (month/day/year)	Estimated period (month/day/year)
Salt Creek at Rolling Meadows, Ill. (USGS streamgage A; DSN 2900)	None	12/19/04; 12/21/04-12/23/04; 12/26/04-12/27/04; 12/31/04; 01/20/05-01/24/05; 10/13/05-11/03/05; 11/17/05-11/26/05; 12/04/05-12/07/05; 12/11/05-12/17/05; 12/20/05; 12/26/05; 12/28/05-12/29/05; 01/08/06-01/09/06; 02/10/06-02/13/06; 02/23/06-03/03/06; 12/05/06-12/06/06; 01/24/07-02/18/07; 03/21/07-03/23/07; 04/16/07-04/18/07; 09/18/07-09/21/07; 10/27/07-10/29/07; 12/05/07-12/09/07; 12/16/07-12/19/07; 12/28/07-01/03/08; 01/22/08-01/26/08; 02/01/08-02/02/08; 02/05/08-02/06/08; 02/13/08-02/15/08; 02/21/08-02/29/08; 08/26/08; 11/24/08; 12/03/08-12/08/08; 12/18/08-12/26/08; 01/03/09-01/12/09; 01/15/09-01/19/09; 01/21/09-01/23/09; 01/25/09-02/01/09; 08/24/10-09/03/10; 09/15/10-09/16/10; 09/21/10; 09/28/10-10/24/10; 10/30/10-11/22/10; 11/27/10-12/31/10; 01/22/11-01/31/11; 02/05/11-02/14/11; 07/04/11-07/09/11; 07/14/11-07/21/11; 09/03/11-09/18/11; 09/22/11-09/25/11
Salt Creek near Elk Grove Village, Ill. (USGS streamgage B; DSN 2800)	None	01/21/05-01/27/05; 12/09/05-12/10/05; 05/27/06-06/01/06; 10/30/06-11/10/06; 11/14/06-11/29/06; 12/03/06-12/11/06; 12/15/06-12/21/06; 12/25/06-01/07/07; 01/30/07-02/05/07; 02/08/07-02/21/07; 06/15/07-06/18/07; 09/10/07-09/30/07; 10/01/07-11/13/07; 12/23/07-12/27/07; 08/13/08-08/31/08; 10/01/08-11/02/08; 11/12/08-11/14/08; 12/14/08-12/15/08; 12/20/08; 12/24/08-12/25/08; 12/28/08-12/31/08; 01/21/09-01/22/09; 05/31/09-06/16/09; 06/20/09-07/06/09; 02/06/11-02/12/11
Salt Creek at Elmhurst, Ill. (USGS streamgage G; DSN 2500)	None	12/27/04-12/29/04; 01/21/05-01/23/05; 01/31/07-02/17/07; 01/20/08; 01/25/08; 01/27/08; 01/29/08-02/04/08; 05/21/09-05/27/09; 01/13/11; 01/18/11-01/21/11; 02/02/11-02/05/11; 02/07/11; 02/09/11-02/10/11
Salt Creek at Western Springs, Ill. (USGS streamgage J; DSN 2100)	None	10/01/04; 10/03/04-10/22/04; 10/25/04-10/31/04; 12/23/04-12/29/04; 01/22/05-01/28/05; 07/26/05-09/30/05; 12/07/05-12/12/05; 12/19/05-12/24/05; 01/29/07-02/20/07; 06/21/07-07/02/07; 07/06/07-07/18/07; 07/21/07-08/04/07; 08/13/07-08/18/07; 11/01/07-11/20/07; 01/03/08; 01/19/08-02/02/08; 12/22/08-12/25/08; 01/15/09-01/21/09; 01/25/09-01/27/09; 02/04/09-02/06/09; 12/28/09-12/30/09; 01/03/10-01/04/10; 01/11/10; 01/21/11-02/15/11; 06/22/11-07/12/11; 08/27/11-08/29/11

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